

Telecast Fiber Solutions

CopperHead RCP 2050 User Guide

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Warranty information is available in the Support section of the Grass Valley Web site (www.miranda.com).

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About CopperHead RCP 2050

This chapter provides an overview of the CopperHead RCP 2050A Operational Control Unit and includes the safety and warranty information about it.

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<i>Unpacking the CopperHead RCP 2050A Operational Control Unit</i>	3

About CopperHead RCP 2050

The CopperHead RCP 2050A Operational Control Unit provides remote control facilities for a range of broadcast cameras/camcorders from several different manufacturers. It has been designed to emulate control units from Hitachi, Ikegami, JVC, Panasonic, and Sony. The 2050A interfaces directly with Fiber Systems' CopperHead fiber optic extension systems, or can be connected directly to a camera or a camcorder.



Fig. 1-1: CopperHead RCP 2050A Operational Control Unit

The 2050 provides reliable, noise free, non-contact joystick controls of iris, pedestal and preview. Joystick tension is easily adjustable.

The main connector is a DB15 type which is reliable, economical, and readily available. This connector carries camera control data, power, and Red and Green tally inputs and preview volt-free contacts. Preview contact closure is also available on a BNC coax connector. Composite video monitor input and video output are available on BNC connectors.

Multiple non-volatile storage and retrieval scene files are available both internally and via SD card access. The SD card allows scene file settings to be transported across multi-channel systems as well as off-site backup.

An On Screen Display (OSD) video output provides operational information and SD scene file access menus. This OSD output can be connected to an external standard definition composite VBS monitor or, optionally, a tiltable 3.5 inch (89mm) TFT-LCD unit is available (Fiber Systems CHRCP-LCD1) which is designed to match and fit the 2050.

The 2050 will function over a large supply voltage range with low power consumption. If the TFT-LCD is fitted this supply voltage range is reduced.

For in-desk fitment, the low-profile design of only 40mm below desktop surface gives maximum under desk clearance. Panel mounting brackets are available for this purpose.

Configuration

The CopperHead RCP 2050A Operational Control Unit has been supplied configured to emulate the control panel specified on your order or otherwise agreed. You can see other emulations by following the procedure in [Engineering Setup](#) on page 9.

Unpacking the CopperHead RCP 2050A Operational Control Unit

Individual items shipped with a CopperHead RCP 2050 system depend on the particular configuration.

Please consult your packing slip and purchase order to ensure that you have received all of the expected Fiber Systems components. Inspect all components for scratches and other mechanical damage, and inspect the electrical connectors for bent or damaged pins and latches. Report any missing or damaged components to Grass Valley. See [Product Returns](#) on page 3 regarding product returns.

You must use your own video and audio cables to make connections for Video, Tally, Black Burst/Genlock, Base Station monitor, intercom, and other ancillary signals and equipment. Suggestions for these cables are discussed later in [Dimensions and Cables](#) on page 32.

Product Returns

In the unlikely event of damage to your CopperHead RCP 2050A Operational Control Unit during shipping or delivery please note the damage with the delivery or shipping service and document the packaging and product where you see damage. If any component does not work correctly out of the box, please contact Grass Valley (see [Contact Us](#) on page 31).

If the problem cannot be remedied through a service telephone call, you will receive an RMA number (Return of Merchandise Authorization). Please note this RMA number inside and outside of all shipping boxes and on all documentation provided with the items to be returned.

About this User Guide

This user guide is designed to cover all of the various options and so not every page in this guide will apply to your specific system.

About CopperHead RCP 2050

About this User Guide

Installation and Configuration



This chapter explains how to install and configure the CopperHead RCP 2050 system, as well as how to configure the engineering settings.

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<i>Connectors</i>	6
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About the Installation

The unit has low power dissipation and does not require any special ventilation requirements. It may be used free standing or with optional brackets, mounted into a desk top. All cables leave the OCU from the rear. Because of the unit's low profile height, the rear connector panel may be tilted downwards to provide easier access as necessary for cabling when mounted in- desk. To do this loosen the screw either side of the connector panel (in the slot) and tilt the panel as required, re-tighten the screws.

Device Storage

As with all electronic equipment, both high and low temperature extremes should be avoided as well as the ingress of moisture and dust. The units are rugged in construction, but sharp shocks and high levels of vibration must also be avoided. Keep the unit within the limits defined in the specification.

Connectors

The CHRCP2050A has four connectors:

- Main I/O (DB15)
- Preview Output (BNC)
- Video Input (BNC)
- Video Output (BNC)

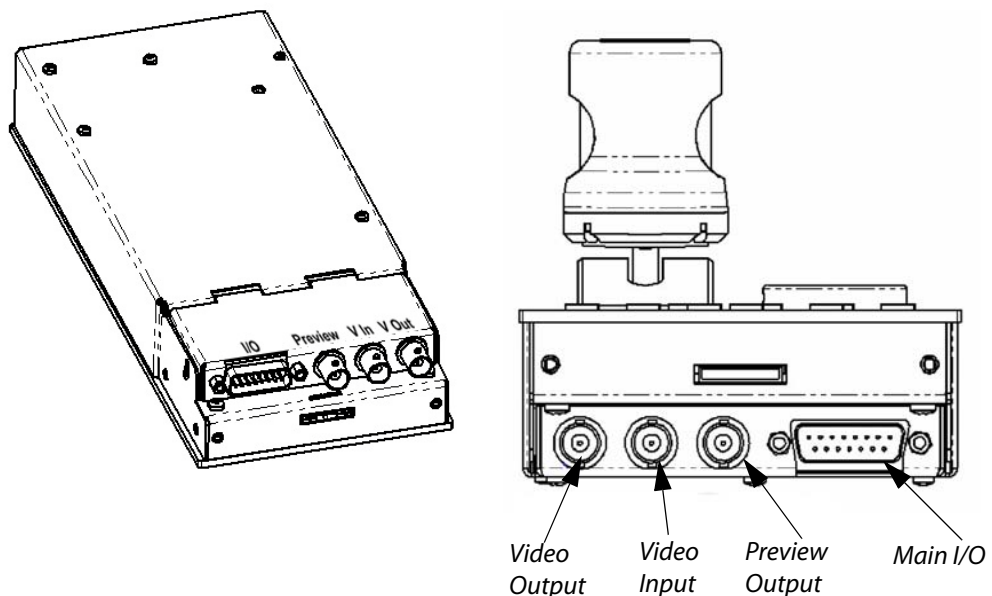


Fig. 2-1: Rear Panel Connectors

Main I/O Connector

The Main I/O connector is a DB15 female, and carries data, power, and Tally Inputs.

Pinouts are as follows:

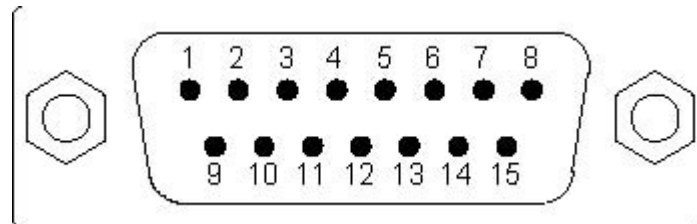


Fig. 2-2: DB 15 Male Plug

- Pin 1: GND
- Pin 2: RS422 Out+
- Pin 3: RS422 In-
- Pin 4: REM /EN
- Pin 5: +SUPPLY
- Pin 6: PREVIEW 1
- Pin 7: PREVIEW 2
- Pin 8: GND
- Pin 9: TALLY RED
- Pin 10: RS422 Out-
- Pin 11: RS422 In+
- Pin 12: TALLY GREEN
- Pin 13: RS232 In
- Pin 14: RS232 Out
- Pin 15: Bi-Directional I/O

Camera Control Interface

Camera Control is connected via various pins the **MAIN I/O** connector to your CopperHead Base Station or directly to a camera. The **OCU** has four electrical control interfaces (RS422, RS232, "Sony bi-di," and "Panasonic bi-di") which are automatically determined when each emulation is selected. However, they can be changed via the "ENGr" menu if necessary for type and sense (see [Engineering Setup](#) on page 9).

Power

The CHRCP2050A runs on DC power, which is supplied from the CopperHead Base Station or directly from the camera, and is supplied via the **MAIN I/O** connector. If the camera/camcorder does not have enough power to supply the OCU and/or TFT-LCD, an optional connector and AC adaptor are available for powering the units externally.

Note: When the 2060 TFT-LCD display is attached, the power supply voltage range is reduced(see [Specifications](#) on page 29).

Tally Inputs

Tally inputs are found on the **MAIN I/O** connector (DB15). Both Red and Green tally inputs are available. These can be configured for either voltage or contact closure. Voltage must be positive reference ground. Contact closure is also reference ground. An open collector bipolar NPN transistor or open drain N channel FET may also drive the inputs. Configuration is via the **ENGr** menu.

The panel tally LED is a bi-color Red/Green with the priority Red.

Preview Output

A volt-free solid state contact closure is available as standard. This is activated when the joystick knob is pushed down. Observe the contact ratings defined in the specifications. The contacts are not polarity conscious. This contact closure is duplicated on the Preview Output BNC.

Preview Output Connector

The same Preview output contact closure found on the Main I/O Connector (Preview Output 3.2.1.4, above) is duplicated on this BNC.

Pinout specifications are as follows:

	Inner	Outer
BNC coax	Preview1 (volt free contact 1)	Preview2 (volt free contact 2)

Video Input Connector

The video BNC input is terminated in 75 ohms and accepts standard definition 1V p-p video - composite sync, Y, or VBS.

Pinout specifications are as follows:

	Inner	Outer
BNC coax	1V p-p 75 ohms	Ground

Video Output Connector

A valid video input is switched directly to the video output. When the MON button is activated, the OSD characters are superimposed onto the video in white with a black border to make them easily readable with varying program content.

If no video input is applied, the video output is Composite Sync with black background and OSD superimposed, without color subcarrier. BNC output video is sourced in 75 ohms and gives 1V p-p when correctly terminated in 75 ohms.

The output video is also available on the multi-way connector for the optional 3.5 inch TFT-LCD display (2060).

Pinout specifications are as follows:

	Inner	Outer
BNC coax	1V p-p 75 ohms	Ground

Engineering Setup

Connect the unit to the CopperHead Base Station and turn on the power to the camera head. If no LCD screen is attached, then connect the Video Output BNC of the unit to an external monitor.

When the ENGr button is pressed, the OSD displays the unit's Engineering Menu. There are four pages of menus. Use the Rotary Encoder to scroll thru the selections. Push the Rotary Encoder to select one of the menu items, or to change to the next page.

Note: A camera/camcorder needs to be connected for full access to Engineering menus.

When switching emulations, ensure that rotary encoder is pressed to confirm the selection before exiting the menu. When switching emulations, it is necessary to calibrate the joystick each time.

Configuring the Emulation

Because every manufacturer's RCP is slightly different, you must configure the emulation correctly so that the universal remote control panel works correctly.

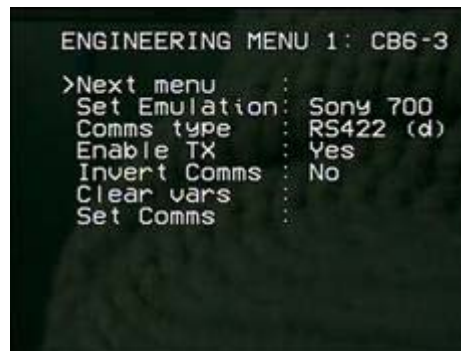


Fig. 2-3: Engineering Menu, Page 1

To configure the Emulation:

- 1 Select **MON** to turn on the On Screen Display and then **ENGR** menu. The first page of the **ENGR** menu will appear.
- 2 Using the rotary control, select **SET EMULATION** and push down once. The appropriate emulation type can now be selected by scrolling through the available options and pressing down on the rotary control to confirm.
- 3 Once the appropriate emulation type is confirmed, scroll down to **SET COMMS** and select by pressing down on the rotary control. This will automatically set the required I/O parameters.
- 4 Exit the **ENGR** menu to confirm all of the settings. It may be necessary to switch the camera head OFF/ON for communication to be established.

The iris range of the joystick can be adjusted to suit individual users or cameras.

Note: A camera/camcorder is required to be connected and operational.

Adjusting the Camera Iris

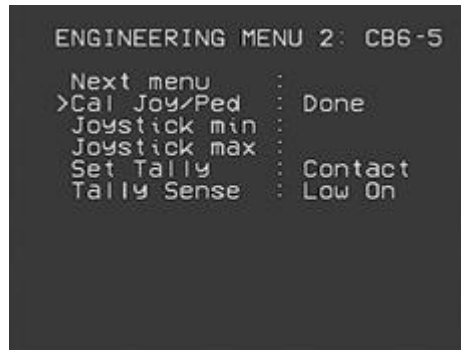


Fig. 2-4: Engineering Menu, Page 2

To configure the Camera/Joystick Iris:

- 1 Turn **AUTO IRIS** off.
- 2 Pull joystick toward minimum iris position (all the way back towards you) and set **MASTER PEDESTAL** knob to mid- point. ("12 O'Clock")
- 3 Press **ENGR** to enter the **ENGINEERING** screen.
- 4 Using the rotary control click on **NEXT MENU** until you reach **ENGINEERING MENU 2**.
- 5 Select Cal Joy\Ped with rotary encoder and then push rotary encoder to set. The display will report **Done**.
- 6 Scroll down to **Joystick min** and press the rotary encoder switch. The OSD will report **Joystick min: Busy** and display the iris value.
- 7 Use the rotary encoder to set the camera's iris to the **Closed** position, ideally by viewing the iris ring on the lens of the camera. If this is not possible due to the location of the camera, then set the iris value to the **Closed** position according to the **On Screen Display** message (see notes below).
- 8 Once the iris is set to the **Closed** position, press the rotary encoder to confirm the setting and the display will change from **Busy** to **Done**.
- 9 Push the joystick all the way forward and select **Joystick Max** and press the rotary encoder switch. The OSD will report **Joystick max: Busy** and display the iris value.
- 10 Use the rotary control to set the camera's iris to the fully open position, ideally by viewing the iris ring on the lens of the camera. If this is not possible due to the location of the camera, then set the maximum iris value to the **Open** position according to the **On Screen Display** message (see notes below).
- 11 Once the iris is set to the open position, click the rotary control to confirm the setting and the display will change from **Busy** to **Done**.
- 12 Press **ENGR** to exit.
- 13 Check that the iris can be controlled by the joystick across the complete range.

Note:

- Normally the joystick iris control range is set so that it matches the camera iris range, but it is possible to adjust the settings **MIN & MAX** so that a large movement of the joystick controls a small camera iris movement for fine control. Simply adjust the rotary encoder for lens iris positions that are required relative to the joystick position.
 - Some Sony camera models allow iris adjustment across a range between approximately 038 minimum and 110.
 - Always adjust the minimum control position first.
-

TFT/LCD Screen adjustments

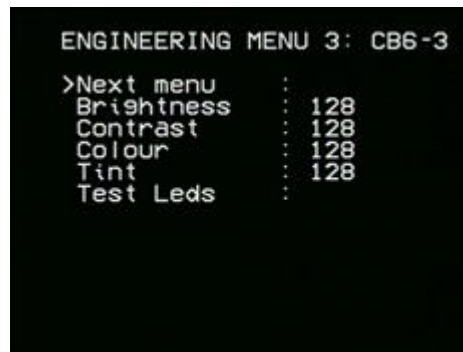


Fig. 2-5: Engineering Menu, Page 3

Page 3 of the Engineering menu allows you to control four aspects of the built-in optional LCD/TFT screen. Each has a range of 0 to 255. Default is 128

- **Brightness:** adjust from 0 to 255. Push the **Rotary Encoder** to select.
- **Contrast :** adjust from 0 to 255. Push the **Rotary Encoder** to select.
- **Colour:** adjust from 0 to 255. Push the **Rotary Encoder** to select.
- **Tint:** adjust from 0 to 255. Push the **Rotary Encoder** to select.
- **Test LEDs:** when selected, the test will start by illuminating tally (Red and Green), and then illuminate the buttons in groups and end with the blue leds. The OCU will then revert to normal operation.

Note that the SHUTTER ▲▼ and GAIN ▲▼ buttons do not illuminate.

Calibrate Camera/Joystick

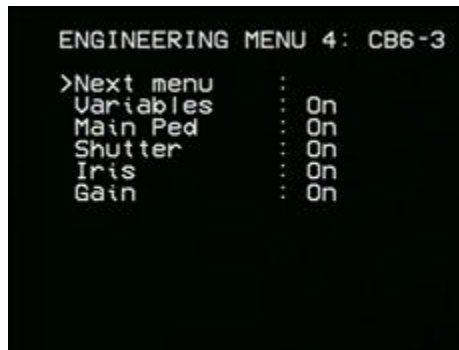


Fig. 2-6: Engineering Menu, Page 4

Page 4 of the Engineering menu allows you to enable or disable control of various camera functions, as well as to calibrate the joystick for your particular camera:

- **Variables:** On or Off
- **Main Ped:** On or Off
- **Shutter:** On or Off
- **Iris:** On or Off
- **Gain:** On or Off

Joystick Tension

Joystick tension may be adjusted to personal preference using the adjuster screw, which is accessible through a hole in the under side of the unit directly under the centre of the joystick when centrally positioned.

LED Illumination Test

Note that a camera/camcorder does not need to be connected.

Adjustment Procedure:

- 1 Switch the **OCU** to **OFF**.
- 2 Press and hold **ENGr** button, press the **ON/OFF** button.

The test will start by illuminating tally and then illuminate the buttons in groups and end with the blue leds. The OCU will then revert to normal operation.

Note that the **SHUTTER ▲ ▼** and **GAIN ▲ ▼** buttons do not illuminate.

Re-Programming Software/Firmware

The OCU may be field re-programmed with software/firmware updates. Two programming connectors are available underneath the rear connector panel

- one for processor software
- one for for FPGA firmware.

To access these connectors, remove the two connector panel adjusting screws (in the slots either side) and raise the panel up. The connectors are marked appropriately.

An optional programming kit is available for this purpose. Software and the re-programming procedure are available from Fiber Systems Customer Support (see [Contact Us](#) on page 31).

CopperHead RCP 2050 Features



This chapter describes the main CopperHead RCP 2050 features including the controls, buttons, display, and OSD Output.

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Controls

The following descriptions indicate the full potential control of the CHRCP-2050A but do NOT imply that all controls are available for any particular control panel emulation.

Cameras and controllers differ considerably in the functionality they offer. Refer to [Emulation and Control Features](#) on page 23 for available control features.

All camera settings and adjustments must be read with reference to the emulated control panel and specific camera manuals.

Variable Adjust Buttons

The variable adjust buttons along the unit's left side allow digital bit increment and decrement of the parameter selected with the rotary encoder. A flashing illuminated variable button means that the rotary encoder is active for this item. The 'adjust' LED should be illuminated. The variable value is shown on the OSD. A steady illuminated variable button means the parameter value previously varied is now fixed and operational.

To adjust a parameter, select by pressing the appropriate button once. The button will flash if the parameter is available. The camera will be updated with the value associated with the parameter and adjustment can be made.

- A flashing illuminated variable button means someone is using the rotary encoder to change its setting. The dual mode **GAIN** display indicates the variable value with an inverted display.
- A steady illuminated variable button means the parameter value is fixed and operational.
- If the button is pushed, again the LED will extinguish and the previous parameter value will be reinstated. To retain the adjusted value, leave the LEDs on.
- If another parameter adjustment is required, press the appropriate button. The previous button will go to steady illumination indicating that its particular value has been retained and the new button will flash indicating the new parameter adjustment active.
- To switch off a previously fixed parameter, press its button twice. Once will force the parameter adjustment active and the second will turn it off.

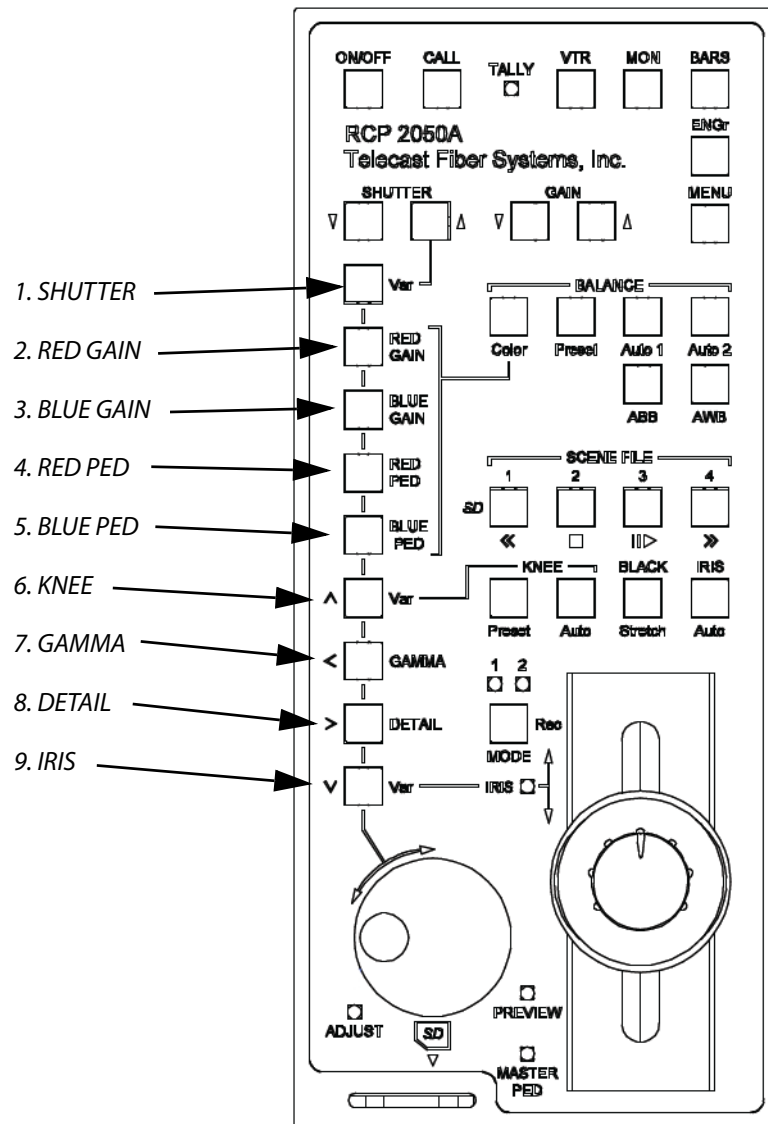


Fig. 3-1: Panel's Variable Adjust Controls

Parameter	Description
1. SHUTTER	Variable adjustment of shutter value.
2. RED GAIN*	Adjusts red amplitude level
3. BLUE GAIN*	Adjusts blue amplitude level
2&3. GREEN GAIN*	Adjusts green amplitude level. Only available on certain cameras.
4. RED PED*	Adjusts red pedestal (black) level
5. BLUE PED*	Adjusts blue pedestal (black) level
6. KNEE	Adjusts the variable knee camera characteristic.

Parameter	Description
7. GAMMA	Adjusts the camera gamma characteristic.
8. DETAIL	Adjusts the picture edge detail. Some call it 'Contour' or aperture correction.
9. IRIS	Inhibits the joystick IRIS control. Varies the iris as the joystick. Selecting IRIS AUTO reduces the sensitivity of control, allowing small variation of the auto setting. This is camera dependant. Some cameras do not allow any adjustment in IRIS AUTO mode.

Note: Color **GAIN** and **PED** Adjustments can be adjusted by pushing each individual button, or for quicker access, by pushing down on the **ROTARY ENCODER** (10) to cycle between **RED**, **BLUE**, and **GREEN** (when available).

Rotary Encoder

The encoder allows bit increment and decrement of the selected value.

The encoder also has a push switch. This is used in some emulations to switch between functions. Refer to 'Control Features Chart'.

- If either '**RED GAIN**' or '**BLUE GAIN**' LEDs are active (flashing), pushing the switch will swap control to the other.
- If either '**RED PED**' or '**BLUE PED**' LEDs are active (flashing), pushing the switch will swap control to the other.

Function buttons

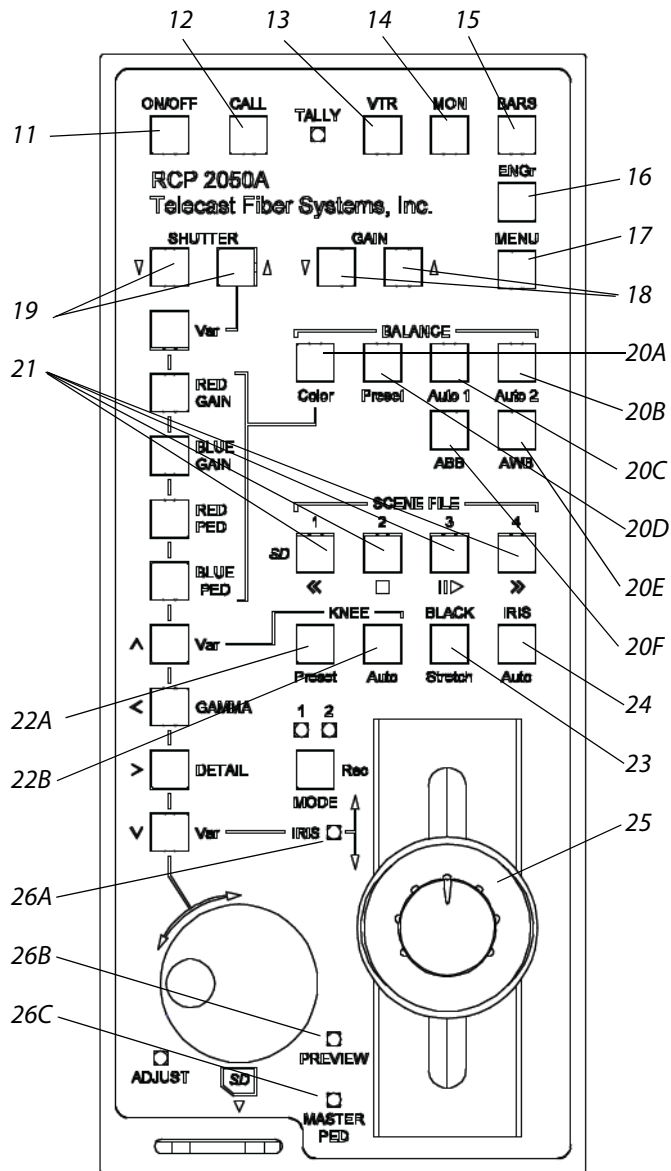


Fig. 3-2: Function buttons

Buttons	Description
11. ON/OFF	OCU on/off. Toggles the OCU on/off. On power-up, the LED flashes indicating that the OCU is acquiring comms with the camera. The LED attains steady state when comms are correctly established and the last saved scene file is recalled and applied.
12 CALL	Performs call function with the camera. Usually this means flashing the tally lights on the camera and the viewfinder. This can vary with camera type or camera settings.
13. VTR	Switches the scene file and MODE buttons to VTR mode - on or off as applicable.
14. BARS	Toggles camera color bars on and off.
15. MON	Switches on or off the color monitor On Screen Display characters (OSD).
16. ENGR	Switches on and off the Engineering setup menus.
17. MENU	Switches the camera menu on and off if applicable. When on, the rotary encoder is enabled for item selection and adjustment.
18. GAIN	Increments or decrements the fixed gain value shown on the OSD.
19. SHUTTER	Increments or decrements the fixed shutter value shown on the OSD. To turn shutter OFF, hold down the DOWN button for two seconds.
20. BALANCE	
20A.COLOR	Enables variable adjustment of the 4 color balance controls.
20B. AUTO2	Applies auto balance 2.
20C. AUTO1	Applies auto balance 1.
20D. PRESET	Sets the camera internal preset color balance levels.
20E. AWB	Performs an auto-white balance.
20F. ABB	Performs an auto-black balance.
21. SCENE FILE 1 - 4	Saves and recalls 5 complete OCU settings. On power-up the last saved scene file is recalled. <ul style="list-style-type: none"> • To save a file - press and hold the button to save for approximately 2.5 seconds until all four scene file buttons are illuminated. On release of the button the single stored scene file button then illuminates. • To recall a file - press a button momentarily for less than 2 seconds. The selected file button then illuminates. De-selecting a scene file (pressing illuminated button - all files off) recalls the user default file which can be a starting point for setting a new scene file. This file is stored by pressing button 1 followed by button 4 within 2.5 seconds. Factory default settings can be recalled by pressing 'CALL' followed by 'TEST' buttons.

Buttons	Description
21A. ALTERNATE FUNCTIONS	
<<	VTR mode fast rewind
■	VTR mode stop
▶	VTR mode pause/play
>>	VTR mode fast forward
SD	<p>When an SD card is inserted, Scene File 1 button enables access to the SD OSD menu. Previously stored scene files may be retrieved or the currently applied scene file saved to SD.</p> <p>Before using an SD card for the first time please see the specifications section to ensure compatibility. Additionally, the SD card must first be formatted on a PC to create a FAT16 Master Boot Record. The SD card can then be formatted in the unit by selecting the 'Format Card' option.</p> <p>When selecting a scene file to be saved, the filename will change to indicate the one selected. In the example above Scene File 4 has been selected for saving. The filename can be edited using the Change Description option before saving.</p> <p>When retrieving the scene file using the load option, the scene file is loaded into the scene file 1 position. To transfer these settings to another scene file, exit the SD Menu and save to one of the other available locations, e.g. Scene File 2.</p>
22. KNEE	Adjust the camera knee characteristic.
22A. Preset	Sets the camera preset knee value.
22B. Auto	Selects the camera auto knee function.
23. BLACK STRETCH	Adjusts the picture in the black region allowing more picture content to be seen.
24. IRIS AUTO	Sets camera auto iris mode. Most cameras automatically adjust iris to the correct level and allow small adjustment of this level via the joystick 'IRIS' or variable controls.
25. MODE	<p>When MODE is off, camera iris and pedestal values are updated immediately when switching between variable IRIS, joystick IRIS and when selecting different scene files. When MODE is on, joystick IRIS and PED adjustments pick up control only when the current camera values have been reached with the controls. This prevents potentially large changes occurring after switching and when not desired (e.g. live on air).</p> <p>The IRIS and PED leds only illuminate when the controls are active.</p> <p>Other MODE settings are also reserved for future functions.</p> <p>ALTERNATE FUNCTION</p> <p>Rec: VTR mode Record if media is present in camcorder.</p>

Buttons	Description
26A. IRIS	Control of lens iris using non-contact technology for noiseless, smooth and reliable operation. <ul style="list-style-type: none">• When the IRIS LED is illuminated, the Joystick IRIS is in control.• When IRIS Auto is selected, Joystick IRIS has a reduced control.• While IRIS Var is selected, Joystick IRIS is turned off. See MODE for additional information.
26B. PREVIEW	Pushing the joystick downwards enables the preview volt-free contact closure. This electronic circuit uses a non-contact sensor and a solid state output relay for reliability.
26C. PEDESTAL	Controls video black level pedestal. When the MASTER PED LED is illuminated the Joystick PED is in control. See MODE for additional information.

Emulation and Control Features

Manufacturer:	Panasonic	Sony	Sony	Sony	JVC	Hitachi
Emulation:	RC-10G	RM-M7G	RCP-TX7	700 (RMB)	RM-LP25	RC-Z2
ON/OFF	•	•	•	•	•	•
CALL				•	◀	
VTR - Controls	•			•		
- Stop	•			•		
- Play	•			▼		
- Pause Play	•			▼		
- Fast Forward	•			▼		
- Fast Rewind	•			▼		
- Review Fwd	•			▼		
- Review Rev	•			▼		
- Review Clip				•		
- Record	•			•		
- Record Pause	•			▼		
BARS	•	•	•	•	•	•
ENGr Menu	•	•	•	•	•	•
MENU - Camera	•			•		
SHUTTER - Speeds	•		•	•	•	
- Variable	•		•	•	•	
- Norm	•	+	•	•	•	
GAIN - Auto						
- Levels	•	+	•	•	•	•
BALANCE - Color	•	•	•	•	•	•
- Red Gain	•	•	•	•	•	•
- Blue Gain	•	•	•	•	•	•
- Red Ped	•	•	•	•	•	•
- Blue Ped	•	•	•	•	•	•
- Relative to AWB\ABB	•			•		
- Preset	•	•	•	•	•	•
- Auto1	•	•	•	•	•	•
- Auto2	•	•	•	•	•	•
- ABB	•	•	•	•	•	•
- AWB	•	•	•	•	•	•
SCENE FILE 0 - 4	•	+	•	•	•	+

CopperHead RCP 2050 Features
Emulation and Control Features

Manufacturer:	Panasonic	Sony	Sony	Sony	JVC	Hitachi
Emulation:	RC-10G	RM-M7G	RCP-TX7	700 (RMB)	RM-LP25	RC-Z2
KNEE - Auto	•	•	•	•	•	•
- Preset	•	•	•	•	•	•
- Variable	•	•	•	•	•	•
BLACK Stretch	•				•	
BLACK Stretch - Variable			•			
IRIS - Auto	•	•	•	•	•	•
- Variable	•	•	•	•	•	•
- Joystick	•	+	+	+	•	+
GAMMA - Variable	•	•	•	•	•	•
DETAIL - Variable	•	•	•	•	•	•
PEDESTAL - Joystick	+	+	+	+	?	+
PREVIEW - Joystick	+	+	+	+	?	+
MODE - 1 Iris ctrl latch	•	+	+	+	+	+
- 2 M.PED Lock	•		•	•	•	
Rotary Encoder ADJUST	•	•	•	•	•	•
Rotary Encoder Switch	•	•	•	•	•	•
Tally - OCU	•	•	•	•	•	•
- camera					◀	
-DTS2070 Tally Mon. Unit	•			•		
- VIDEO IN\OUT	•	•	•	•	•	•
- DTS2060 TFT Option	•	•	•	•	•	•

Notes:

•	Includes feature
◀	Camera Model Dependent
+	Additional feature compared to manufacturers panel
▼	Cam to Studio tally mode

OSD Output

The OSD output provides various on screen camera control information as well as SD card memory information and control. The characters will be superimposed on a valid video input. If no video input is present, the OSD outputs a black background.

The video output is fed to the rear panel BNC connector and also to the miniature multiway connector for the optional TFT-LCD color display.



Shutter: off Gain: +3db

Fig. 3-3: Typical on Screen information (simulated)



Red Gain: 128
Shutter: 1/500 Gain: 0dB

Fig. 3-4: Typical on Screen information while Red Gain is selected for variable adjustment

Optional LCD/TFT Display

The optional CHRCP-LCD1 LCD/TFT display mounts to the CHRCP-2050A Control Panel. It displays the input VBS video, as well as superimposed On Screen Display (OSD). The display may be tilted up to 45° for optimum user viewing angle.

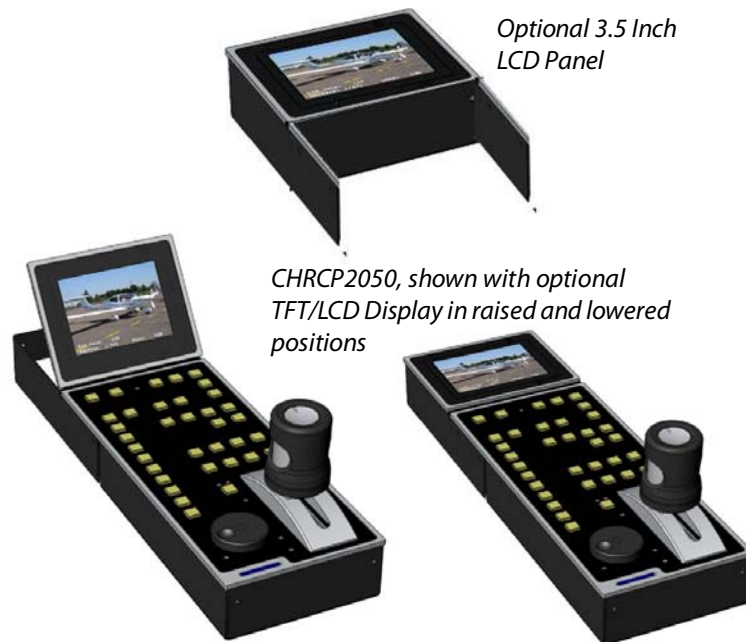


Fig. 3-5: CHRCP2050 with its optional 3.5 Inch LCD Panel

To install the CHRCP-LCD1 display:

- 1 Attach the LCD panel to the rear of the Control Panel using the two supplied screws (Figure 3-6).

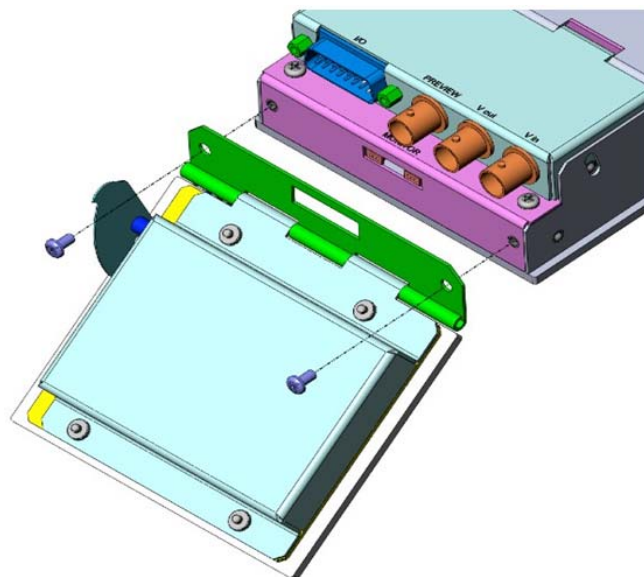


Fig. 3-6: CHRCP-LCD1 Installation Step #1

- 2 Attach the monitor frame to the sides of the Control Panel, using three screws on each side (Figure 3-7).

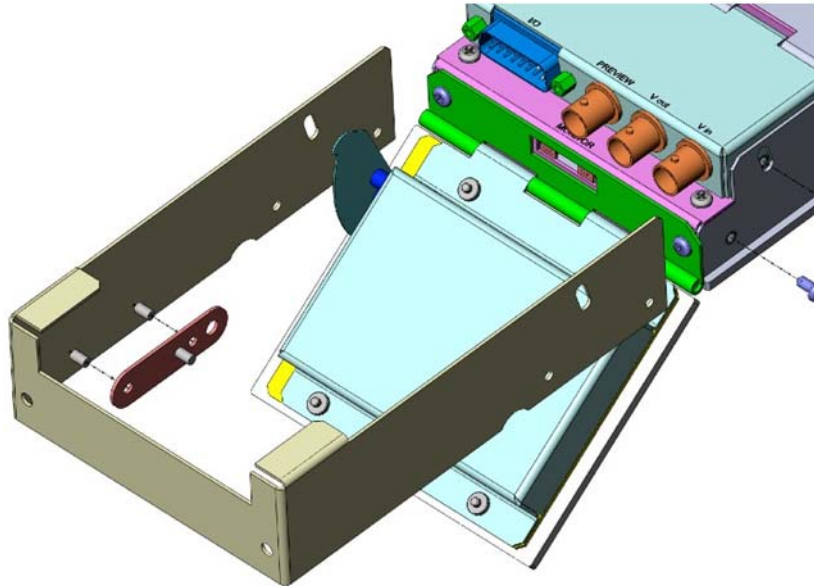


Fig. 3-7: CHRCP-LCD1 Installation Step #2

- 3 Attach hinges on each side (Figure 3-8).

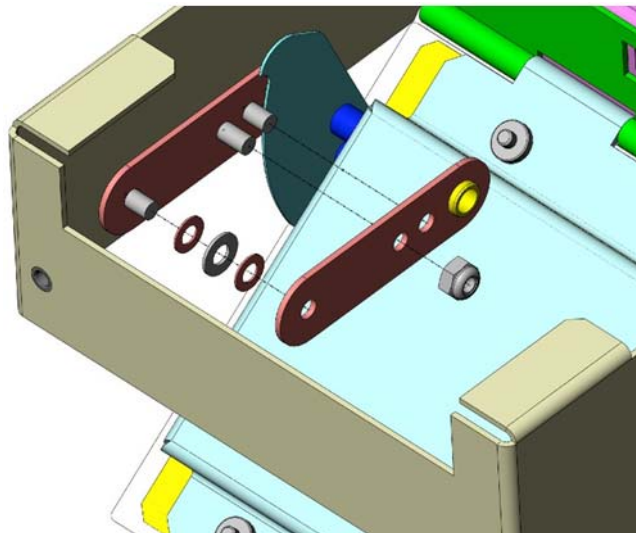


Fig. 3-8: CHRCP-LCD1 Installation Step #3

- 4 Adjust the hinges so that the LCD panel extends to the full 45-degree range, and retracts flat (Figure 3-9).

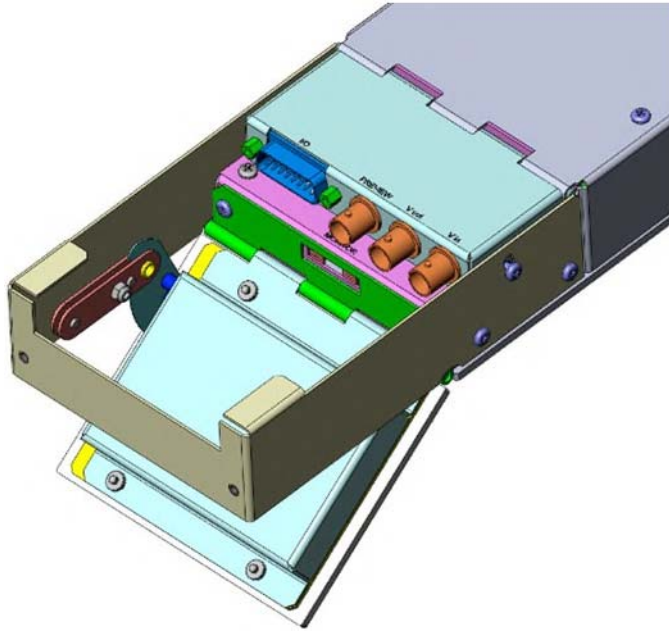


Fig. 3-9: CHRCP-LCD1 Installation Step #4

4 Specifications

Power Input

OCU 2050 only

Voltage 8 – 48 VDC
Power (@12V) 1.5W typical
..... 3.5W maximum

With Display 2060

Voltage 10 > 14 VDC
Power (@12V) 5.5 W combined typical
..... 7 W combined maximum

Serial control

RS422 Differential I/O (4 wire + gnd) or Single ended i/p
RS232 I/O (2 wire + gnd)
Sony bi-directional (1 wire + gnd)
Panasonic bi-directional (1 wire + gnd)

Tally input (red & green)

Voltage

level off 0V (Gnd)* - CMOS
level on +5V* Levels
resistance 10K
max i/p +20V

Contact

level off open circuit
level on connect to 0V (Gnd)
resistance 10K to +5V

* Nominal logic sense - levels and sense may vary depending on panel emulation and menu settings.

REM /EN o/p

level off +5V
..... (when ON/OFF LED is off)
level on 0V
..... (when ON/OFF LED is on or flashing)

Preview Contacts o/p

Voltage 100V maximum
Current 120mA AC maximum
..... 250mA DC maximum

On resistance 25ohms maximum
Isolation.....5000Vrms maximum

Video input and output

Composite PAL or NTSC ("VBS")

Compatibility

See [Emulation and Control Features](#) on page 23

Size

See [Physical Dimensions](#) on page 33



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A

Dimensions and Cables

This appendix provides the dimensions of the CopperHead RCP 2050 device, as well as the included cables.

Physical Dimensions 33
CopperHead Cables 34

Physical Dimensions

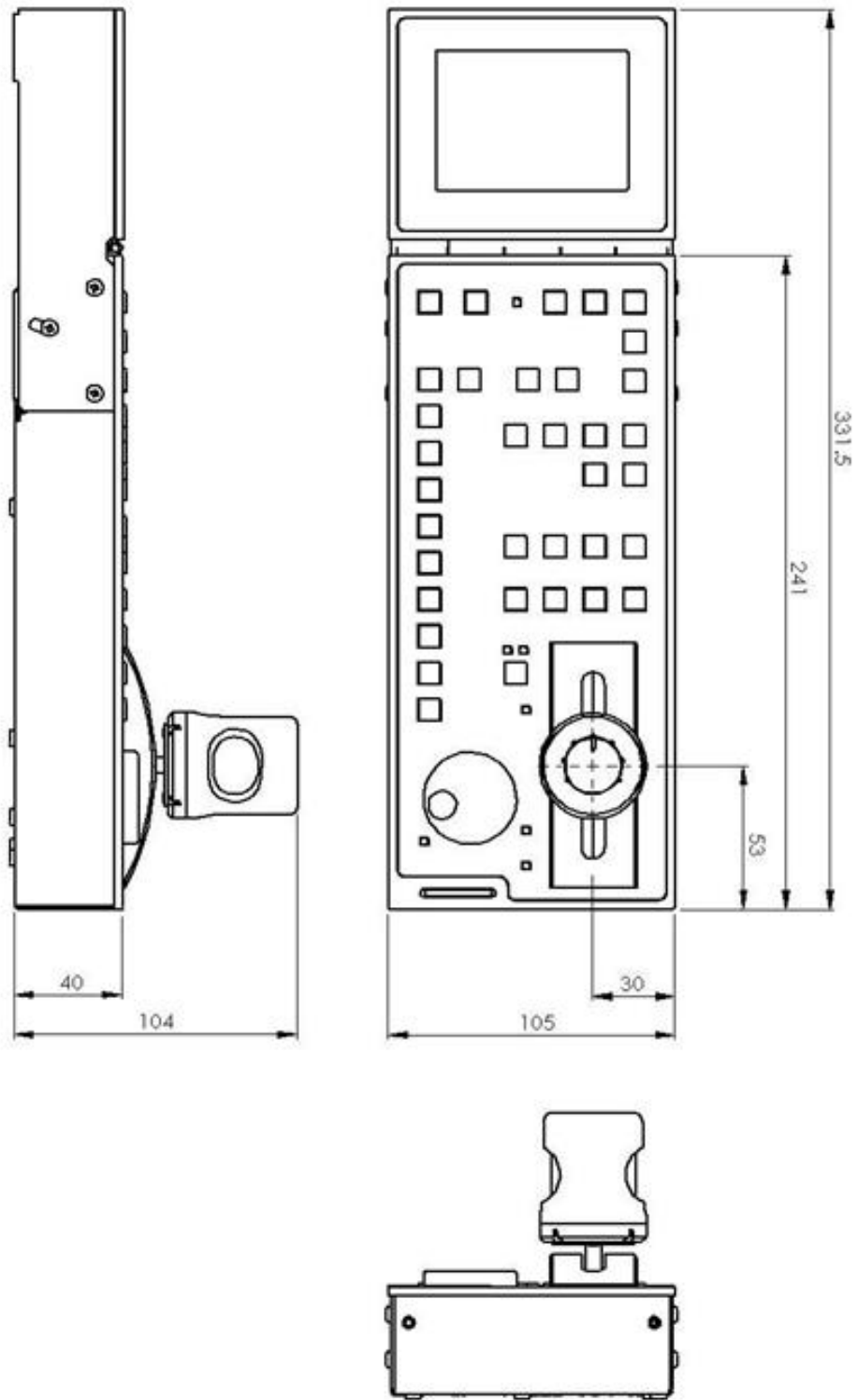
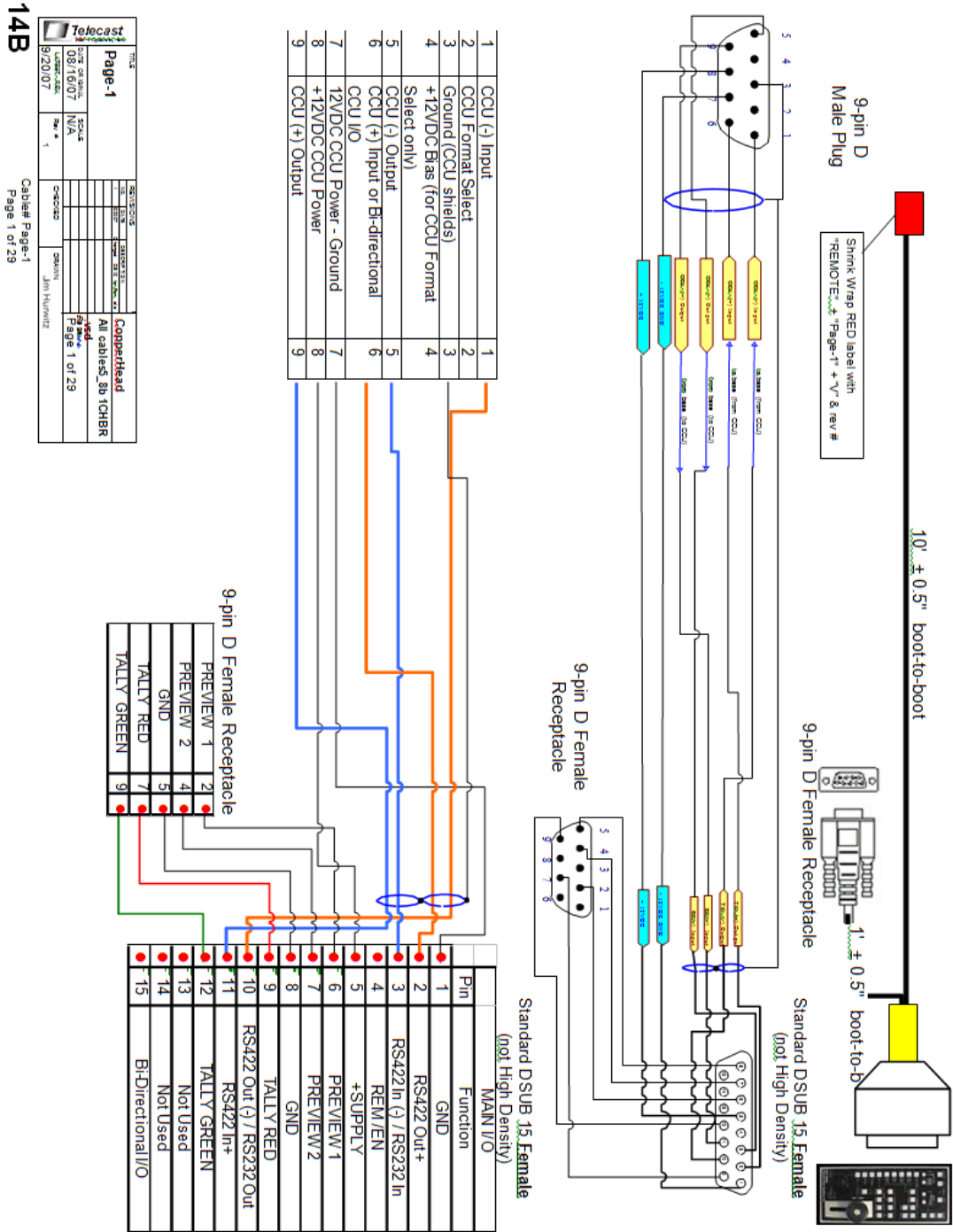


Fig. A-1: Physical Dimensions

CopperHead Cables

For cameras using RS422 Protocol



Telecast	
Page-1	
DATE OF ORG.	SCALE
08/16/07	N/A
DATE OF REV.	SCALE
8/20/07	N/A
CopperHead	
All cables 8b 1CHBR	
Page 1 of 29	
Cable# Page-1	
Page 1 of 29	

Fig. A-2: RS422 Protocol

For cameras using RS232 Protocol

14C

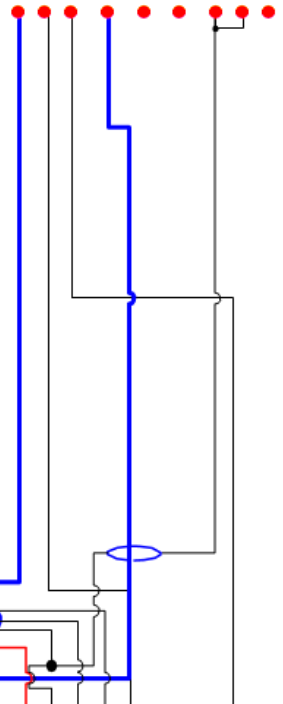
		TITLE Page-1	
DATE ORIGINAL 8/23/07	SCALE N/A	REVISIONS NO. DATE BY 1 11/23/07 JWH	APPROVAL DATE BY 11/23/07 JWH
LATEST REV 11/23/07	DWG # 2	CHECKED JWH	DRAWN JWH
CopperHead All cables, 3b rcher		Page 1 of 29	

Cable# Page-1
Page 1 of 29

Data Structure: RS-232

Note: DO NOT POT/HOT GLUE ANY OF THESE CONNECTORS

CCU (-) Input	1
CCU Format Select	2
Ground (CCU shields)	3
+12VDC Bias (for CCU Format Select only)	4
CCU (-) Output	5
CCU (+) Input or Bi-directional CCU I/O	6
+12VDC CCU Power - Ground	7
+12VDC CCU Power	8
CCU (+) Output	9



PREVIEW 1	2
PREVIEW 2	4
GND	5
TALLY RED	7
TALLY GREEN	9

Pin	Function
1	GND
2	RS422 Out+
3	RS422 In (-)
4	REM/EN
5	+SUPPLY
6	PREVIEW 1
7	PREVIEW 2
8	GND
9	TALLY RED
10	RS422 Out (-)
11	RS422 In+
12	TALLY GREEN
13	RS232 In
14	RS232 Out
15	Bi-Directional I/O

9-pin D Female Receptacle
Standard DSUB 15 Female
(not High Density)

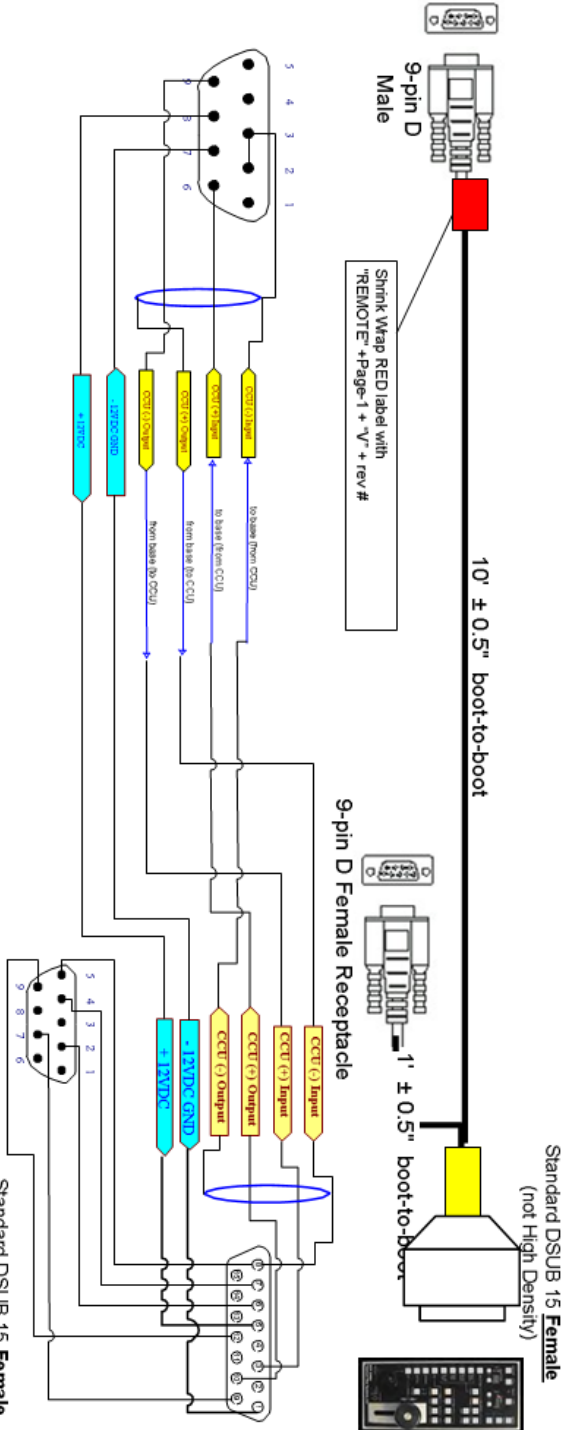


Fig. A-3: RS232 Protocol

For cameras using Bi-directional TTL Protocol

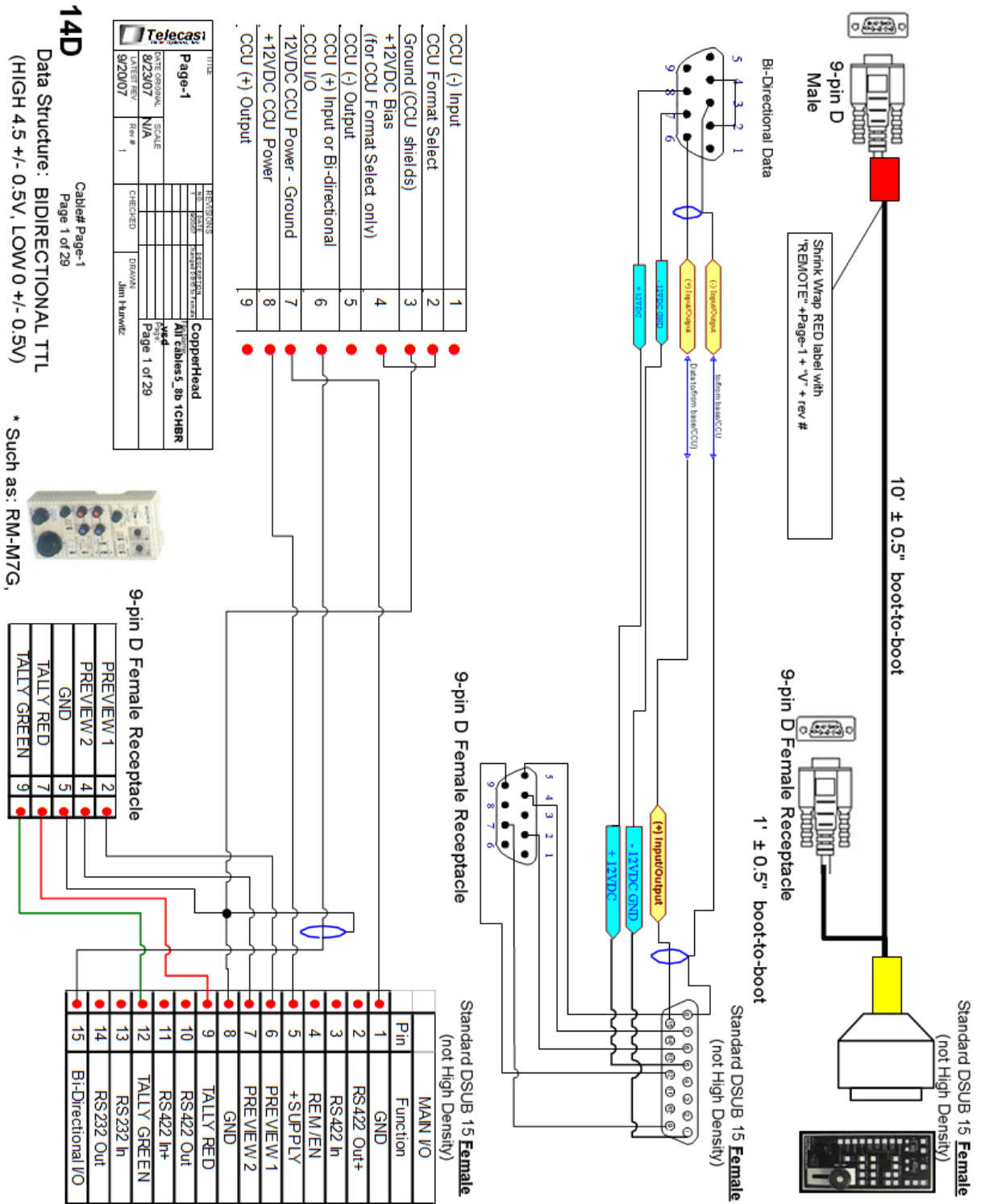


Fig. A-4: Bi-directional TTL Protocol

