grass valley
A BELDEN BRAND

User's Guide

13-00088-000 January 2020 v0.50 Draft

Creative Grading

Camera Control System

Declaration of Conformity

We, Grass Valley Nederland B.V., Bergschot 69, 4817 PA Breda, The Netherlands, declare under our sole responsibility that these products are in compliance with the following standards:

- EN62368-1:2014 + AC:2015 — Safety
- EN55032:2012 + C2:2013 — EMC (Emission)
- EN55103-2:2009 — EMC (Immunity)

following the provisions of:

a. the Low Voltage directive 2014/35/EU
b. the EMC directive 2014/30/EU
c. the RoHS directive 2011/65/EU

FCC CLASS A Statement

This product generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause interference to radio communications.

It has been tested and found to comply with the limits for a CLASS A digital device pursuant to part 15 of the FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Operation of this product in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

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Trademarks

Website

Visit the Grass Valley public website to download the latest user's guide updates and additional information about your broadcast product:

www.grassvalley.com

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Environmental Information

European (CE) WEEE directive.

This symbol on the product(s) means that at the end of life disposal it should not be mixed with general waste.

Visit www.grassvalley.com for recycling information.

Grass Valley believes this environmental information to be correct but cannot guarantee its completeness or accuracy since it is based on data received from sources outside our company. All specifications are subject to change without notice.

If you have questions about Grass Valley environmental and social involvement (WEEE, RoHS, REACH, etc.), please contact us at environment@grassvalley.com

Packing for return

If a unit is being returned to Grass Valley for servicing, try to use the containers and materials of the original packaging. Attach a tag indicating the type of service required, return address, model number, full serial number and the return number which will be supplied by your Grass Valley service centre.

If the original packing is not available or can no longer be used contact your regional Grass Valley service representative to have a return package provided.

Important information

Read this information carefully before installing this equipment and retain them for future reference. Read and comply with the warning and caution notices that appear in the manual. Any changes or modifications not expressly approved in this manual could void your authority to operate this equipment..

Safety Summary

This informaton is intended as a guide for trained and qualified personnel who are aware of the dangers involved in handling potentially hazardous electrical/electronic equipment. It is not intended to contain a complete list of all safety precautions which should be observed by personnel in using this or other electronic equipment.

During installation and operation of this equipment, local building safety and fire protection standards must be observed.

Whenever it is likely that safe operation is impaired, the apparatus must be made inoperative and secured against any unintended operation. The appropriate servicing authority must then be informed.

Warnings

Warnings indicate danger that requires correct procedures or practices to prevent death or injury to personnel.

- Do not modify this equipment;
- Installation of this equipment must only be performed by qualified personnel;
- Do not use any accessories other than those recommended by the manufacturer;
- In case of an emergency ensure that the power is disconnected;
- Mount equipment so that power lead can be accessed to disconnect power;
- To prevent fire or shock hazard, do not expose the unit to rain or moisture;
- There are no user servicable parts inside. Refer servicing to qualified personnel only or contact your local Grass Valley representative.

Cautions

Cautions indicate procedures or practices that should be followed to prevent damage or destruction to equipment or property.

- Do not subject the unit to severe shocks or vibration;
- Do not expose the unit to extremes of temperature;
- To prevent risk of overheating, ventilate the product correctly.

Chapter 1

Introduction

1.1 Welcome

Comprised of a control panel (CGP 500) and a companion touchscreen application (CGA), Grass Valley's Creative Grading bundles multiple camera operations into an intuitive and versatile user interface. Camera shaders can now easily and quickly manage adjustments, such as transitions from indoor to outdoor lighting. Shaders can seamlessly manipulate images thanks to the tight connection between panel and control and the dynamic adaptation to any format (HDR, WCG, 4K UHD, etc.) in real-time.

1.1.1 About this guide

The purpose of this user's guide is to present a detailed description of how to install, set up and operate the Creative Grading system.

1.1.2 Compatibility

This user's guide describes the functionality of the following system components:

System component	Part number:	Version
CGP 500 — Creative Grading Panel	1-5000100-0100	v01.00
CGA — Creative Grading Application	n/a	v1.0
CCS-ONE — Cameras Control Server	1-5500100-0100	v0.03.003
CGE — Creative Grading Engine	n/a	v1.0.0017

Make sure that your hardware components are using the listed software versions. Refer to the information below for more details about getting more information and download the latest software.

1.1.3 Related documents

Before proceeding, check the Grass valley website at www.grassvalley.com for the latest version of this user's guide and additional information:

- Online versions of documentation; updated versions of user's guides, data sheets, brochures, application notes in pdf-format are available for download.
  - To access some of the information, registration is required.
- Software updates, release notes and installation instructions are available for download.

1.2 Overview

The Creative Grading system consists of three main components: the CGP 500 (panel), the CGA (tablet) and the CCS-ONE (server).

1.2.1 CGP 500 - Creative Grading Panel

The CGP offers the most flawless and intuitive control of Grass Valley camera system. The large color display, the touch buttons and the completely re-engineered stick put the camera's creativity back in the shader's hands.

☞ Note

The CGP 500 can also run without the CCS-ONE, providing basic single-camera functionality.

1.2.2 CCS-ONE - Cameras Control Server

This is the brain of the system. The CCS-ONE is required to have the additional functionality of Creative Grading, like tablet-connectivity. On the CCS-ONE, the so-called Creative Grading Engine (CGE) runs, which is pre-installed on the CCS-ONE.

One CCS-ONE is required per C2IP subnet and can host up to 99 cameras.

It runs Windows 10 IoT LTSB, which means it can run the latest and greatest network safety tools, as demanded by many broadcasters. LTSB guarantees minimal updates, long support and minimal amount of not-needed processes running in the background.

☞ Note

An MCP 450 PC Box can not run the Creative Grading Engine (CGE). A CCS-ONE is required for this functionality.

1.2.3 CGA - Creative Grading Application

The Creative Grading Application is the rich user interface of the Creative Grading system. The app is available free of charge from the respective app stores. The CGA runs on a standard, commercially available tablet computer (not sold by Grass Valley). The Creative Grading Application requires a CCS-ONE (with the Creative Engine software installed) to operate.

☞ Note

The Creative Grading Application is currently only available for Apple Ipad tablets.

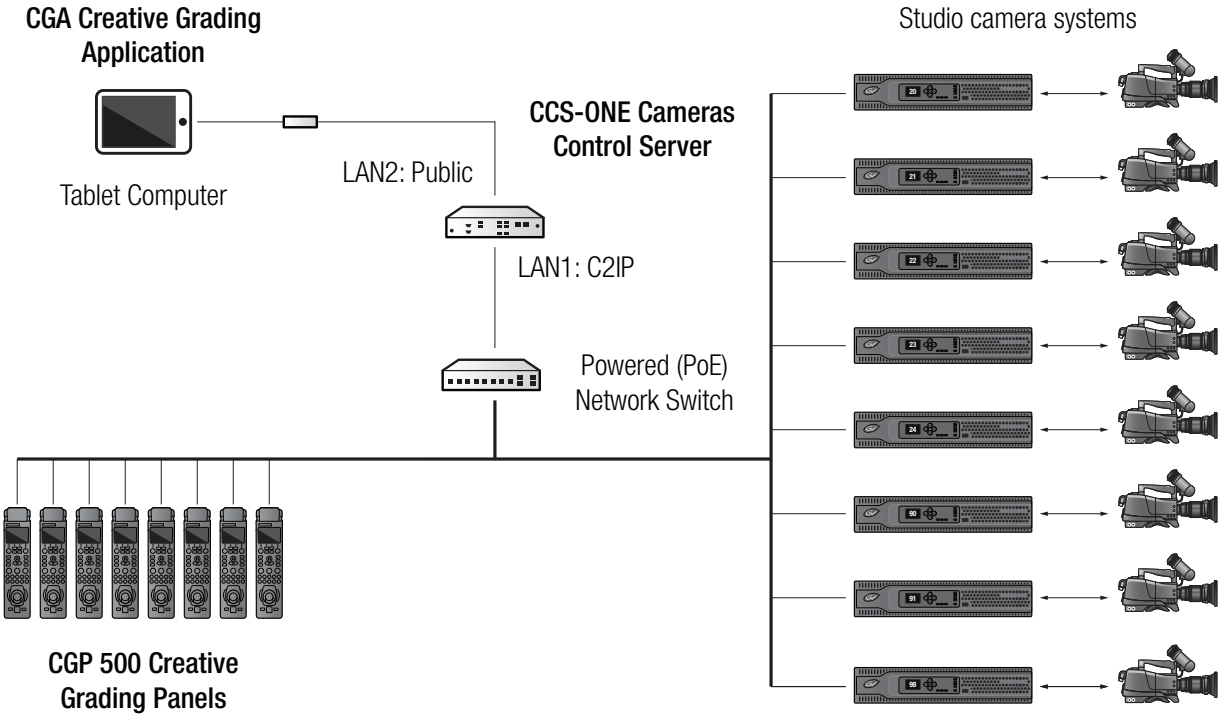
Chapter 2

Installation

2.1 Overview

2.1.1 Control network configuration

The following diagram shows a basic configuration with 8 camera systems, 8 CGP 500 Creative Grading Panels, 1 CCS-ONE Cameras Control Server and 1 CGA Creative Grading Application for a single shader position:



2.1.2 System components

The following hardware components are not included in the package and need to be obtained from other sources:

- **Tablet** — Apple iPad (6th generation running iOS 13 or higher) with Apple Ethernet connection and powering hardware.
- **Ethernet switch** — equipped with enough ports for the total amount of CGPs. A Power over Ethernet (PoE) switch is recommended.
- **Power supply unit** — for each CGP if Power over Ethernet is not used.
- Ethernet UTP cables.

2.2 Installing the CCS-ONE Cameras Control Server

2.2.1 Connecting the server

- Attach a monitor via HDMI and a mouse and keyboard via USB to the CCS-ONE (monitor, mouse and keyboard are not delivered with the product).
- Connect power (use the power supply that is shipped with the product) to the DC Input of the CCS-ONE . The unit powers up automatically after power is applied.

2.2.2 Setting up the server

- In the Windows start screen, log in with **admin** as the user name and enter **admin** as the password.
- Go to Start on the taskbar and go to **Settings > Network & Internet > View your network properties** and locate the IP (IPv4) settings of the **LAN Public** network interface. Copy or write down these settings for later use when installing the CGA app.

2.2.3 Setting up the network

- Connect the Ethernet switch to the **C2IP** Ethernet port of the CCS-ONE. The CGPs will be connected to this switch later on.

2.3 Installing the CGA Creative Grading Application

Make sure you have an up-to-date Apple iPad, fully configured and set up with a valid account and access to the public internet.

2.3.1 Connecting the tablet

Follow these steps to set up a wired network connection between the tablet and the CSS-ONE:

- Connect the tablet to the **Public** Ethernet port of the CCS-ONE using a suitable Ethernet connection for your tablet.

- Apply external power to the tablet. It is strongly advices to use an external power supply as the USB to Ethernet adapter may draw too much power for the internal battery.
- Switch on the tablet.

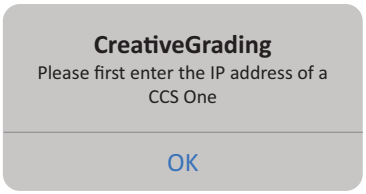
2.3.2 Installing the app

Follow these steps to install the Creative Grading App on your tablet:

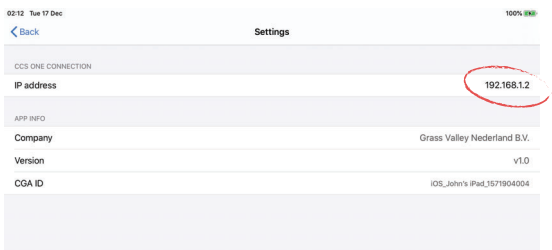
- Go to the App Store, log in usings your credentials and search for the **Grass Valley Creative Grading** App. Download and install the app onto your tablet and tap its icon to open it.

Creative Grading app
Tap this icon to start the app.

If it is the first time you open the Creative Grading App, you need to connect to a CCS-ONE server. The following message appears:



Tap OK. The Settings page opens. Go to the IP address and enter the IP settings you copied or noted from the CCS-ONE.



IP address

2.4 Installing the CGP Creative Grading Panel

2.4.1 Connecting power

Follow these steps to install a panel for first-time use:

- Attach the Ethernet UTP cable to the Ethernet connector on the back side of the CGP and connect it to the Ethernet switch (make sure it is connected to the **C2IP** Ethernet port of the CCS-ONE).
- If the Ethernet network is not powered connect power to the panel.

2.4.2 Setting up the network

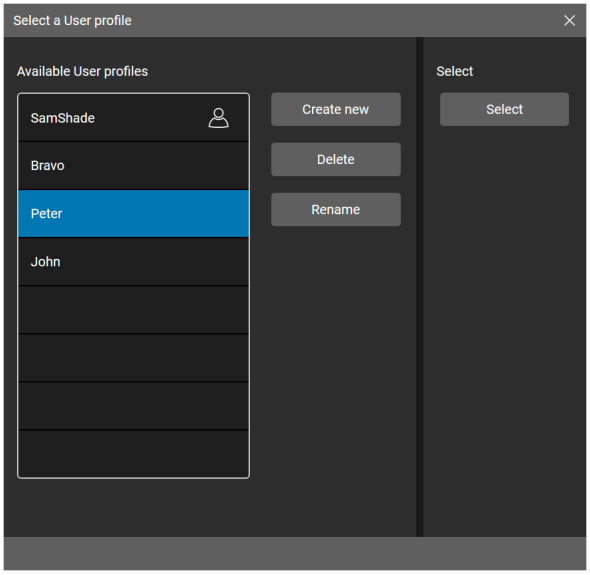
- After applying power to the CGP wait a few seconds for the panel to start up. The CGP 500 logo is shown on the display during the start-up procedure.
- The CGP's IP configuration mode is set to AutoIP mode by default and it automatically connects to the CCS-ONE server.
- Check if the panel is connected to the network.

Chapter 3

Setup

3.1 Managing user profiles

Tap the Creative Grading App on your tablet. The User Profile window is shown. This profile contains assigned cameras and CGPs under the shader's control.



If this is the first time you use the CGA you need to create a new user profile: tap **Create new** and enter your name in the text box. Continu assigning your cameras and panels (CGPs) to create your shader workspace.

If you already have a user profile, tap your name in the list of profiles and tap **Select** to get started. You can always add, change and delete your assigned cameras and CGPs in the Cam-CGP menu.

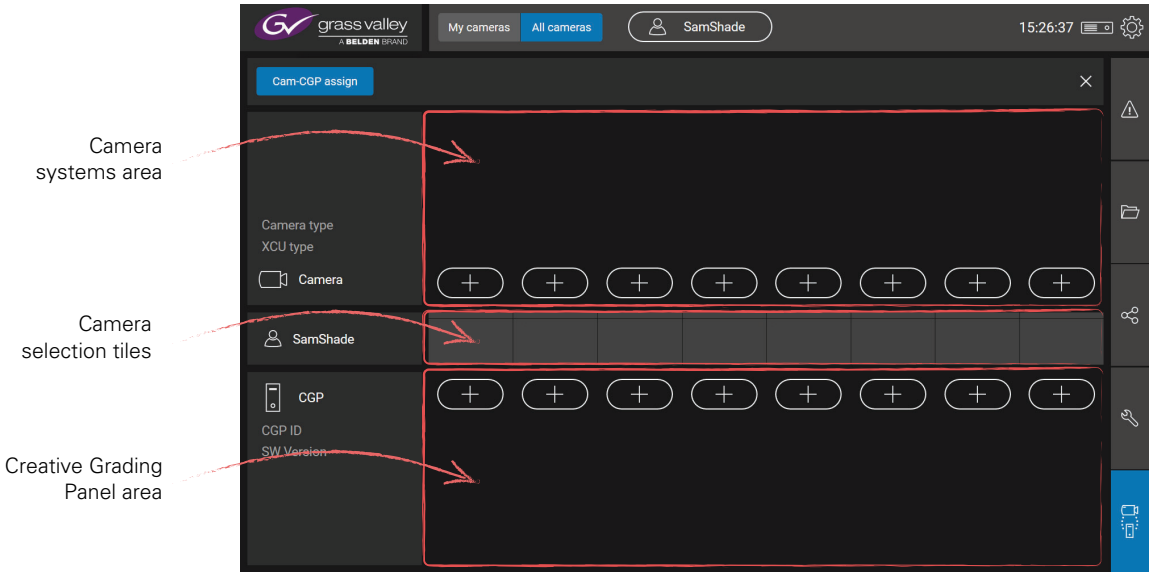
You can delete and rename exisiting user profiles, or create a new one. The active user profile is indicated by a 'user icon behind the its name.

3.2 Assigning cameras and CGPs

3.2.1 Cam-CGP assign menu

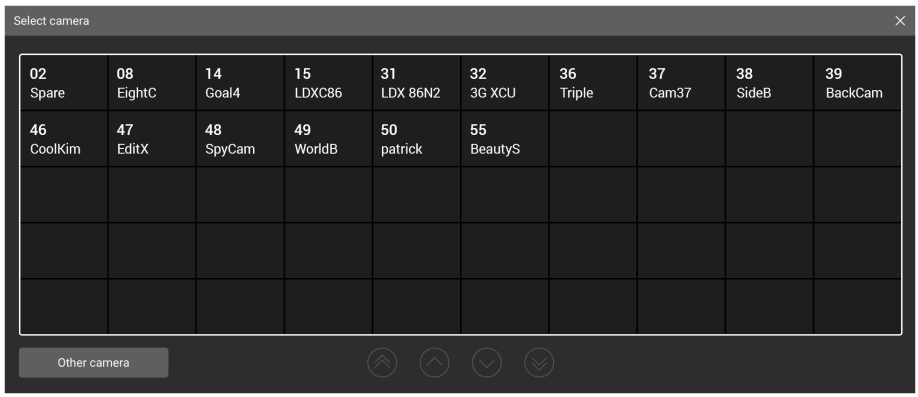
The first step is to assign camera systems and CGPs to your workspace ('My Cameras'). You can add up to 8 cameras and CGPs to your workspace.

On the main screen, tap **Cam-CGP assign** on the slide-out menu at the (bottom) right of the screen. The following window appears:



3.2.2 Assigning cameras

To assign a camera system to a camera tile on the camera selection bar, tap the (+) button above the tile. The Select camera windows shows all available camera. Tap a camera number to select it.



You can also tap **Other camera** and manually enter a camera number. This option can be used when a camera is currently not available but will be at a later stage.

The camera system is now assigned to the camera tile.

3.2.3 Assigning CGPs

Tip

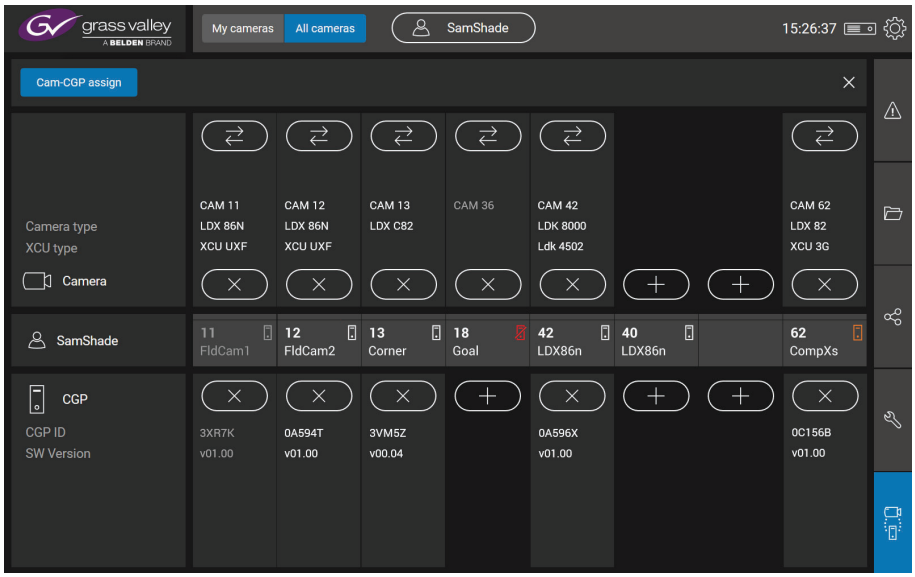
It is not required to assign a CGP to a camera system. You can control and operate a camera system without a CGP, using only the CGA. For live camera operation and direct control it is recommended to assign a CGP.

To assign a CGP to a camera selection tile tap the (+) button below an empty tile. The **Assign CGP** popup window appears on the CGA and the connected CGPs show the following information on their local displays:

Press and hold the **Single** button for two seconds on the CGP you want to assign to the tile.

3.2.4 Managing assignments

After assigning all camera systems and CGPs the workspace should looks like this:



- To exchange the positions of two camera systems, tap the ⇄ button of the first camera, then tap the second. The cameras switch places, including their assigned CGPs.
- To delete an assigned camera systems or CGP, tap the × button above or below the camera tile.

Chapter 4

CGA Operation

4.1 CGA screen layout

The default screen layout of the Creative Grading Application contains many buttons, menus and other areas that have special functions.

Navigation menu
Access camera functions grouped in menus and submenus

Camera group
Select My Cameras or All Cameras

Shader name
Shows current shader's profile name

Functions area
Shows functions and values of the camera (different for single view and multi view modes)

App status bar
Shows important information about the CGA and tablet PC

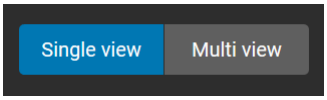
View mode
Select the view mode: Single or Multi view

Camera selection bar
Select a camera and view some status information

Slide-out menus
Errors, File Management, Share, CGP Config and Cam-CGP assign menus

4.2 Single camera view

The CGA has two camera view modes: Single view and Multi view. Selecting video functions from the navigation menu works similarly in both view modes. Single view is used to operate one camera. To switch to Single View tap **Single view** in the bottom-left corner of the screen:



The functions area is shown for the selected camera and the selected (group of) functions.

4.2.1 Selecting a camera

To operate a camera, tap its tile on the camera selection bar at the bottom of the screen:

Tile 1 Tile 8

Up to eight cameras are shown at the same time. An active camera tile shows the camera number, its alias and some status and connection information. The currently selected camera is highlighted (in blue).

4.2.2 Navigating functions

At the left of the screen the navigation menu is shown.

4.2.3 Functions area

The typical layout of the function area (in single view mode) is shown below:

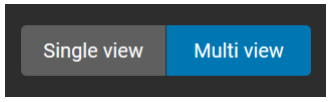
Function tile
Displays the name of the function and its value. Tap to change

Graphic tile
Shows a graphic representation of one or more functions

4.3 Multi camera view

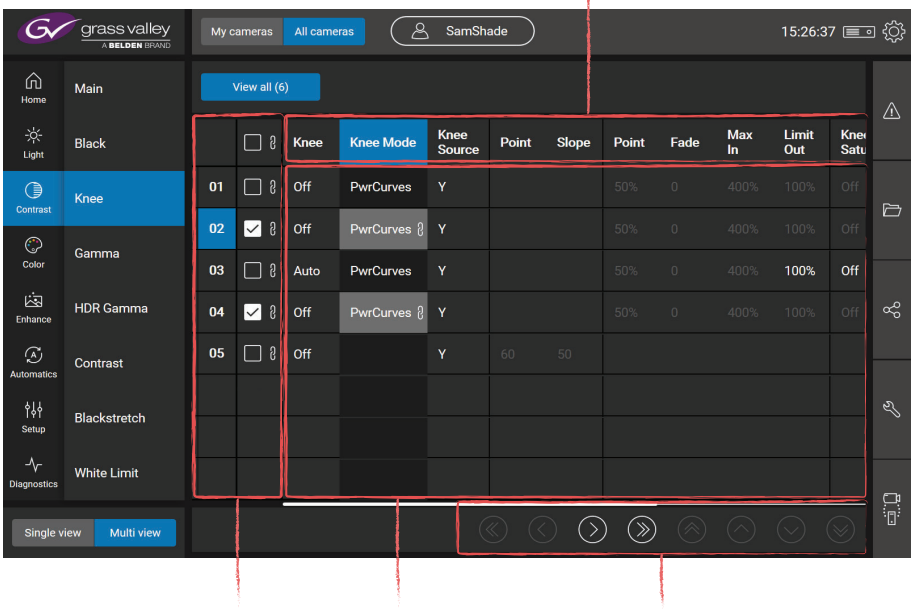
In multi camera view mode, cameras can be operated simultaneously which is easier for initial setups and matching or checking values between cameras.

To switch to multiple camera view mode, tap **Multi view** in the bottom-left corner of the screen:



In the multiview mode, the cameras appear in the function/value grid as horizontal rows while the functions are stacked in columns. The value grid in the center shows the current values of the respective functions:

Funtion area
This area contains all video functions in the selected (sub) menu.



Camera selection area
Select one or more cameras or make a group of cameras.

Values area
Shows values for all video functions.

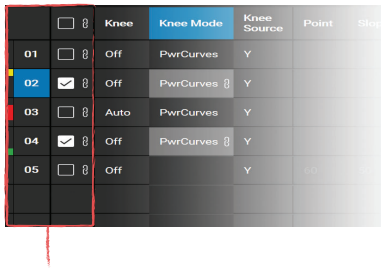
Navigation area
Use bar and/or buttons to scroll through the value grid.

There are three ways of changing one or more function value(s) :

- Tap a value in the grid; both its corresponding function (in the top row) and the camera (in the camera selection area) are selected.
- Tap a function from the top row; values of this function are selected for all cameras.
- Tap a camera in the camera selection area. Tap another camera to make a multiple selection.

4.3.1 Selecting a camera

To operate one or more cameras, tap the camera number(s) on the vertical camera selection bar at the left side of the function area:



Grouping cameras

4.4 Selecting a function

Use the main menu to navigate to the camera function you need to operate. The main menu contains the following items: Home, Light, Contrast, Color, Enhance, Automatics, Setup and Diagnostics.

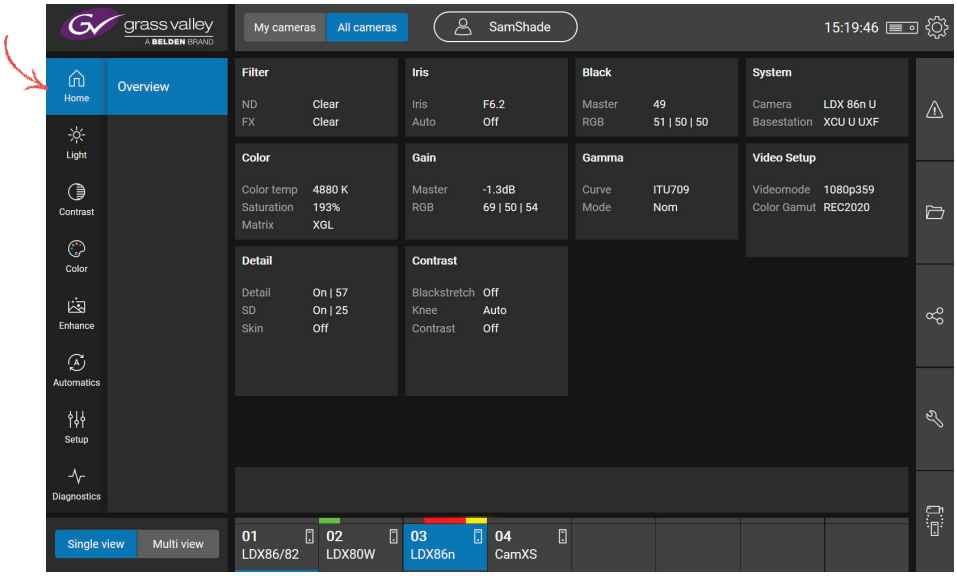
Tap one of the top level items and a secondary menu opens. The function area shows a group of related functions.

4.5 Operational video functions

The navigation area contains the video function menu. At top level, there are eight menus: the first menu is **Home**, then five main video menus (**Light**, **Contrast**, **Color**, **Enhance** and **Automatics**) and two menus for **Setup** and **Diagnostics**.

4.5.1 Home menu

This menu contains a summary of important functions in a compact overview. Tap a function tile to change a function's value.



4.5.2 Light menu

The Path submenu shows the impact of each *Light* parameter throughout the entire light path from the incoming light (from the lens) through the optional Range Extender, the Iris opening of the lens, optical filter(s), exposure time and gain plus sensitivity.

By adjusting a light parameter (at the lower half of the screen) you can immediatetly monitor its impact on the amount of light or video signal that travels through the system. This is represented by the dark yellow diagram in the center:

4.5.3 Contrast menu

Contrast is the difference in brightness between light and dark areas of an image. There are several functions to change the contrast of the camera's video signal.

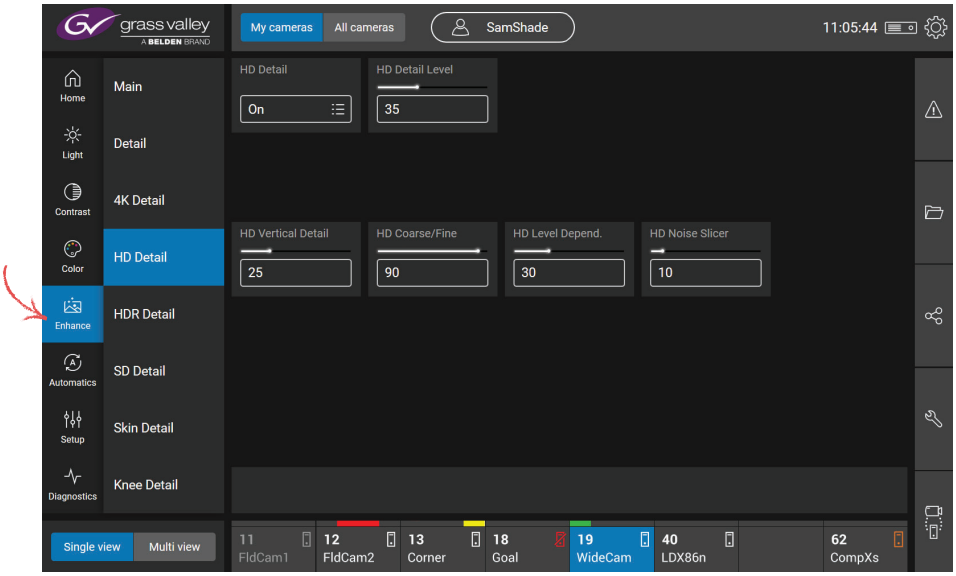
This menu contains the interaction and cross-dependency between functions.

4.5.4 Color menu

Controls and shows all color parameters, such a color temperature, gamut and color tint in one overview. This menu also contains the color corrector, color matrix settings.

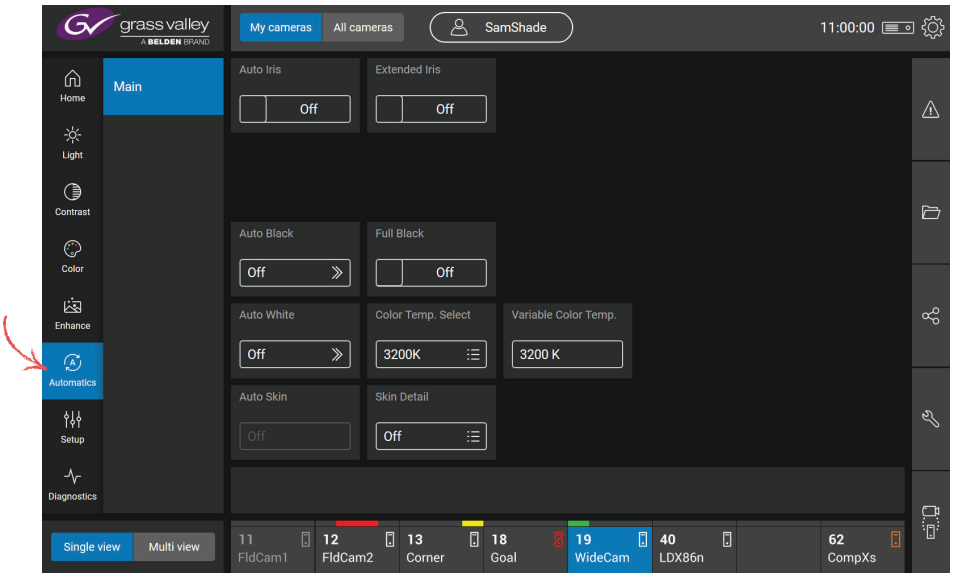
4.5.5 Enhance menu

This menu contains camera functions that enhance the video signal such as Detail, Detail Equalizer, Texture, Skin detail, FX filter, LedWall filter, AnyLight, Freeze, Reverse Scan, CLASS and Lens shading.



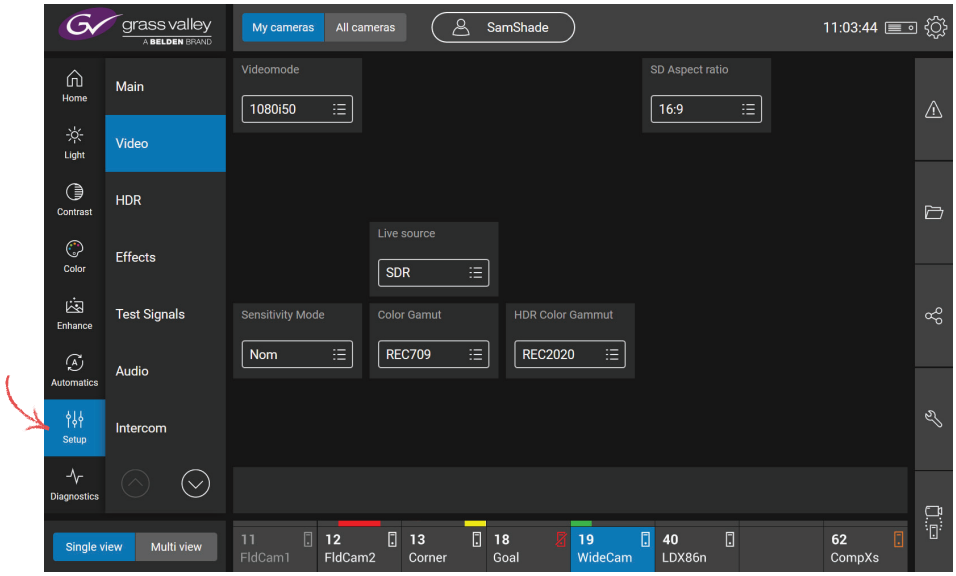
4.5.6 Automatics menu

This menu contains automated video controls or adjustments such as Auto Iris, Auto White, Auto White Continuous and FullBlack.



4.5.7 Setup menu

The setup menu contains items to set up the entire camera system including advanced controls, audio routing, signal tweaking and special functions:

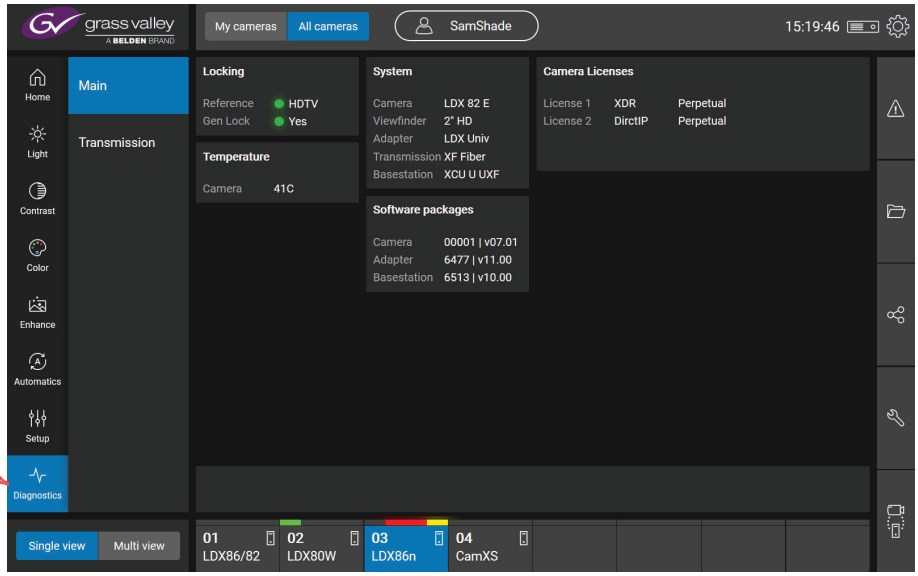


Control the Base Station menu (= XCU menu)

Control the VF menu (= Camera system menu)

4.5.8 Diagnostics menu

This menu shows operational statuses, temperature information and system, software and license information as well as transmission statuses.



4.6 Slide-out menus

The slide-out menus contain generic tools and functions that are available in both single and multi view. Tap an icon on the bar at the right to slide it out. The following menus are available:

Error/warnings menu (future use)

File Management menu

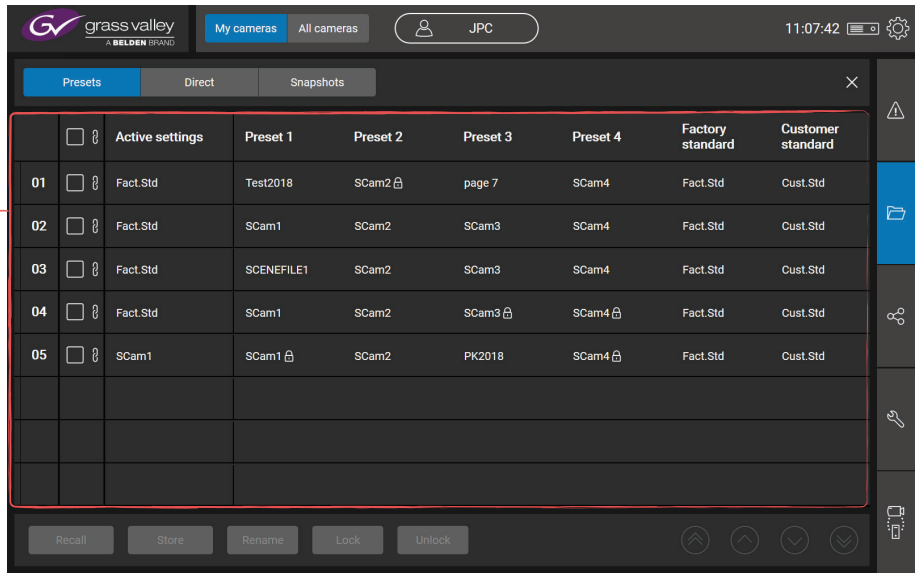
Share menu (future use)

CGP Setup menu

Cam-CGP assign menu

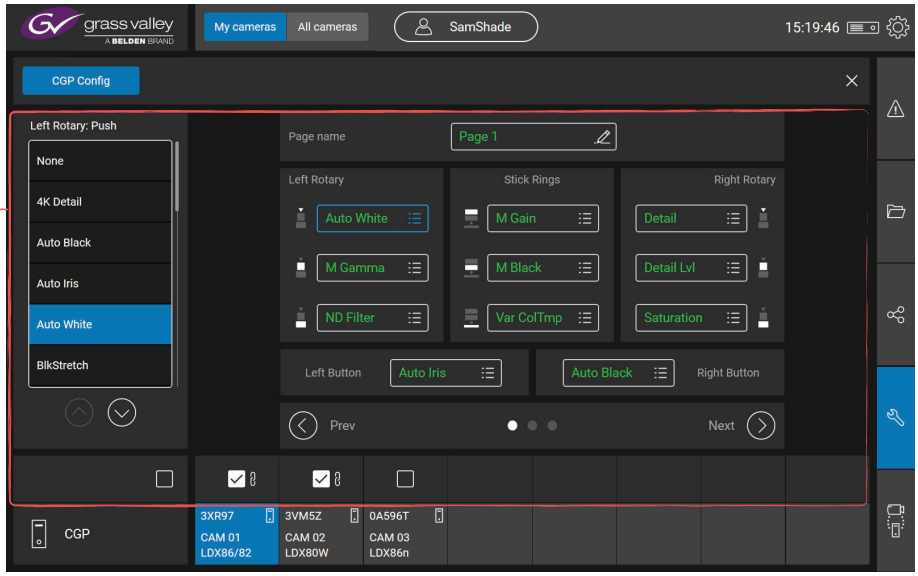
4.6.1 File Management menu

text



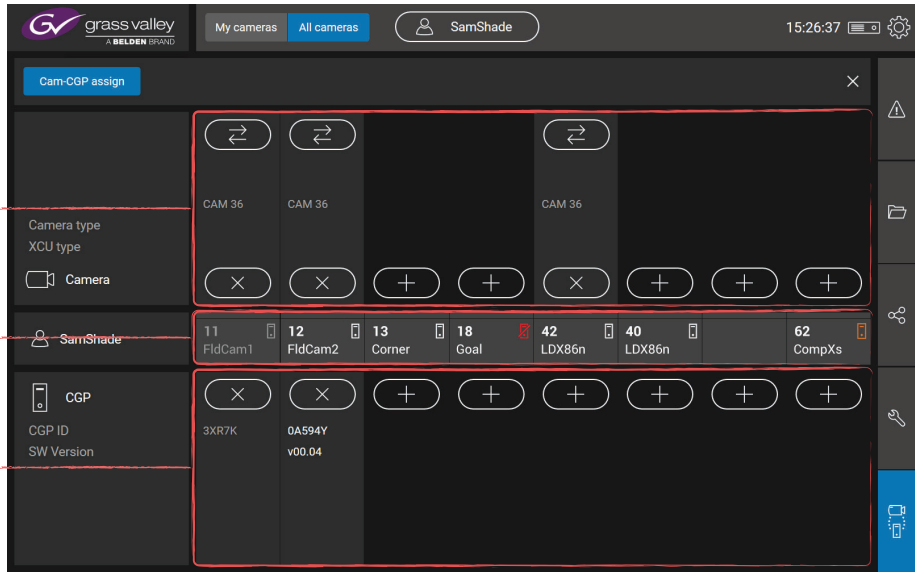
4.6.2 CGP Config menu

In this menu the assignable buttons of the CGP(s) can be set up.



4.6.3 Cam-CGP assign menu

text



Chapter 5

CGP Operation

5.1 Panel layout

The illustration below shows the different controls and button areas of the CGP 500:

CGP local display
Shows important operational and status information such as camera number, iris value and assignments of panel buttons. Doubles as setup menu for local CGP panel settings.

Assignable controls
Assignable operational controls (or local CGP menu navigation).

Left function buttons
Change CGP Settings, switch on test signals or do a Standard Recall.

RGB Grading rotaries
Controls for RGB Gain levels (upper rings) and RGB Black levels or RGB Flare (lower rings)

Free button
Push to reposition the stick position without changing the Iris opening.

Tally light ring
This ring lights red or yellow.

CGA view mode buttons
The Multi and Single buttons toggle between multi and single camera operation on the CGA.

Tally light ring
This ring lights red or yellow

Right function buttons
Lock the panel, call the camera operator.

CGA navigation controls
Use the push/rotary control and two cursor buttons to navigate through selected functions on the CGA.

CGA menu shortcut buttons
Push one of these 8 buttons to open a menu on the CGA.

Stick area
- Move stick up and down to change Iris opening.
- Turn the upper (purple) ring to vary RGB Gain levels.
- Turn the middle (black) ring to vary RGB Black levels.
- Turn the lower (purple) ring to vary RGB Black levels.
- Push the top of the stick to see the camera signal on the preview monitor.

Preview button
Push to view the camera signal on the preview monitor.

5.1.1 CGP display

Shows important operational and status information such as camera number, iris value and assignments of panel buttons. Refer to "CGP Local display" on page 39 for more detailed information about the display.

5.1.2 Assignable controls

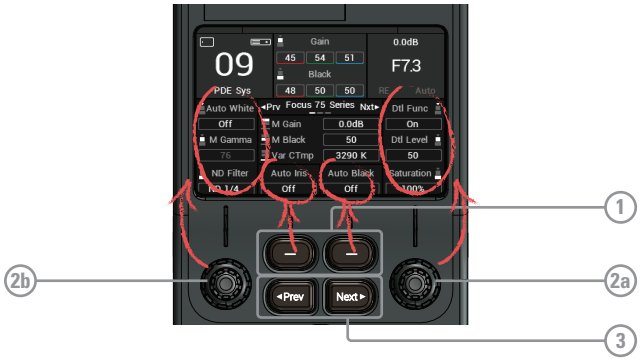
These 4 push buttons and 2 (stacked) rotary controls with push button on top can be assigned to any operational camera function.

① Selection buttons

These two push buttons operate the associated function in the display above the button.

② Assignable rotary controls

The two rotary controls have of a lower and upper ring and a push button on top. Their assigned functions are shown in the display above the rotary.



③ Next and Previous buttons

Use the **Prev** and **Next** buttons to scroll through the different pages of assignable buttons/ functions. There are up to three pages (or sets) of assignments that

5.1.3 Right function buttons

Panel Lock button

Push the **Panel Lock** button to lock the operation panel of the CGP 500. This button lights when the panel is locked (On). When off, all functions of the CGP 500 can be used. When on, limited control is possible by using the **Free** button.

Call button

Push the **Call** button to send a signal to the connected camera calling for attention.

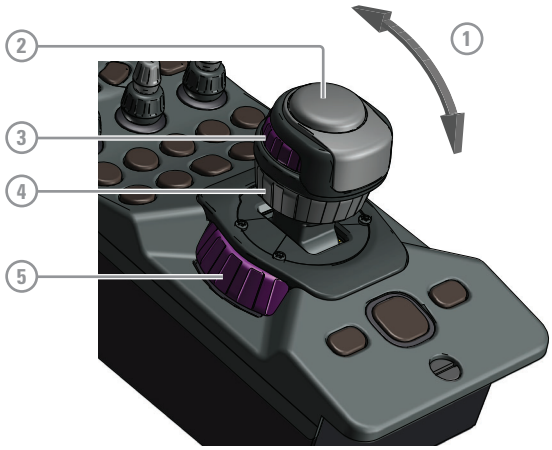
- The **Call** button lights when it is activated OR when a call is received from another system part.
- If active, push again to switch off.
- A buzzer signal can be associated with the call signal.

5.1.4 RGB grading rotaries

These three stacked rotary controls vary RGB gain levels (upper rotary) and R,G and B black level (lower rotary). The lower rotary can also be set to RGB Flare controls in the "CGP Settings" on page 41.

5.1.5 Stick area

The stick has many functions built in:



① Iris control (stick up and down)

Move the stick up and down to change the Iris (lens opening) of the camera. The display shows the current Iris or F-value.

② Preview button

Push to see a selected camera signal on a preview monitor.

③ Stick upper ring

Turn the upper ring (below the knob) to adjust Master Gain level.

④ Stick middle ring

Turn the ring to adjust Master Black level.

⑤ Stick lower ring

Turn this ring to adjust color temperature.

Stick friction adjustment

If the stick's movement is too loose or too tight it is possible adjust its friction. Use a Torx-10 type screwdriver to adjust the tension screw of the stick. The screw is located right above the stick. Pull the stick to the far down position for easy access. Turn the screw and move the stick at the same time to find the right adjustment.

5.1.6 Preview button

Push the preview button to monitor the camera's live signal on the preview monitor.

5.1.7 CGA view mode buttons

CGA multi view button

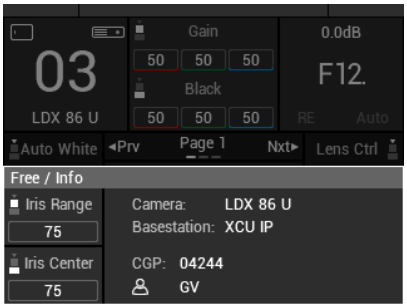
This button has a double function: when pushed, the CGA changes to multi view mode AND this CGP is selected as the active panel. The buttons is highlighted.

CGA single view / CGP selection button

This button has a double function: when pushed, the CGA changes to single view mode AND this CGP is selected as the active panel. The buttons is highlighted.

5.1.8 Free button

Push the **Free** button to move the stick up or down without changing the Iris value. The Free/Info popup window appears as an overlay in the CGP display:



The window is shown as long as the **Free** button is pressed. With the button pressed, adjust the stick's position. Use the left assignable rotary to change the Iris Range (upper ring) and Iris Center (lower ring) value. Release the **Free** button to activate settings and close the popup window.

5.1.9 CGA menu shortcut buttons

Push one of these 8 shortcut buttons to directly open a menu on the CGA:

- Light menu
- Contrast menu
- Color menu
- Enhance menu
- Automatics menu
- Home
- Diagnostics
- File Management

5.1.10 CGA navigation controls

This area contains a large rotary control with push button and two cursor buttons below it to navigate through selected functions on the CGA.

Large rotary with push button

Changes a value (analog or list)

Forward button

Moves forward one function in the function area.

Back button

Moves back one function in the function area.

5.1.11 Left function buttons

CGp Settings button

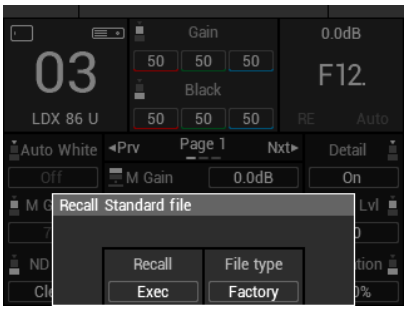
Push the **CGP Settings** button to open the CGP Settings menu. Refer to "CGP Settings" on page 41 for more information about the CGP Settings.

Test signal button

Push the **Test Signal** button to switch on the colour bar signal of the connected camera. Push again to select a sawtooth test signal. The button is highlighted when a test signal is on.

Recall Standard button

Push the **Recall Standard** button to recall camera settings. The Recall Standard file popup window appears as an overlay on the CGP display:



Use the right button below the display to select either Factory or Customer file to recall. Push the left button below the display to actually execute a Recall. Push the **Recall Standard** button again to cancel and close the popup window.

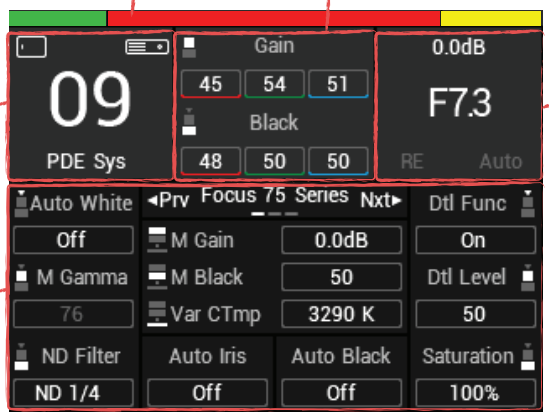
5.2 CGP Local display

The following illustration shows the default operational layout of the display:

Tally bar
Shows Call, On Air and ISO status

Camera Identification area
Shows camera number and alias and CGP connection statuses.

Assignable controls area
Shows assignments and values of the assignable controls.



RGB Grading rotaries area
Shows assignments and values of the rotaries

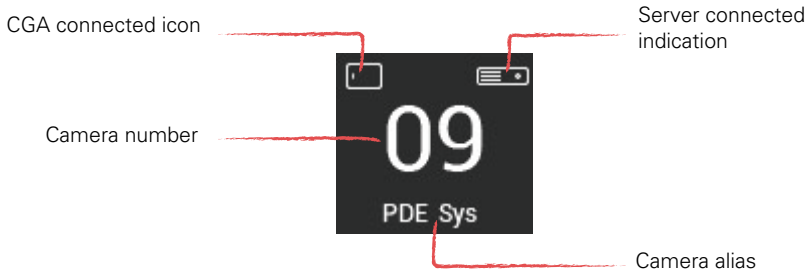
Lens area
Shows lens and video gain information

5.2.1 Tally bar

This top bar shows the tally signals: a green area at the left for CALL, a large red area in the center for On Air and a yellow area at the right for ISO.

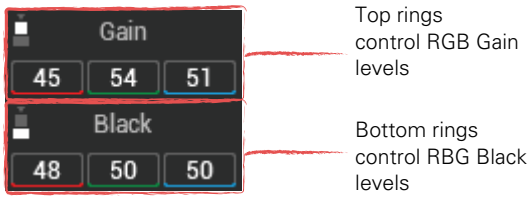
5.2.2 Camera identification area

Shows the camera number and the camera (system) alias and some connection information (to the CGS and the CGA):



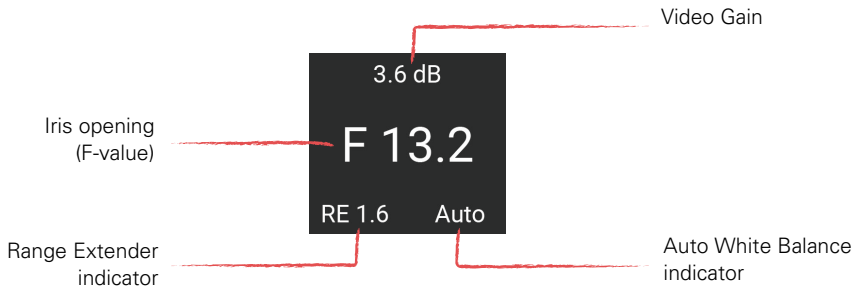
5.2.3 RGB Grading rotaries area

This display area shows the assignment of the three RGB Grading rotaries in the middle section of the panel. The rotaries each have two stacked rings: the top rings control RGB Gain levels and the bottom rings control RGB Black levels.

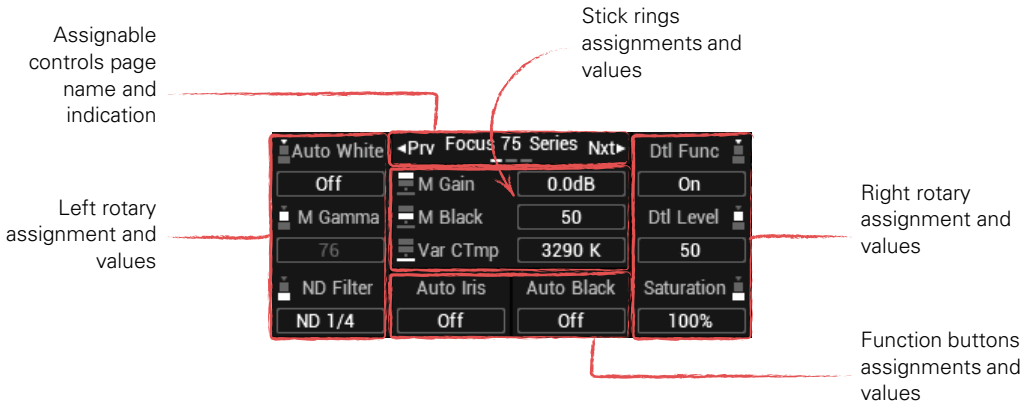


5.2.4 Lens area

This screen area shows Video Gain (in dB), the iris opening or F-value plus Range Extender setting and Auto White Balance indicators.



5.2.5 Assignable controls area



5.3 CGP Settings

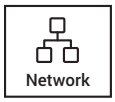
Press the **Settings** button on the left side of the panel to open the CGP Settings menu. The top row in the display shows the different settings categories. Use the **Prev** and **Next** buttons to scroll through the different sections:

Turn the central rotary to scroll through the settings of the selected section:

Push the central rotary to activate the selected setting. Turn the rotary to change its value and push again the confirm the new value.

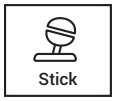
5.3.1 Network

For the CGP to operate in the IP network must have a unique identification. By default, the IP address is assigned automatically (IP Mode = Auto).

Section	Setting	Values	Function
 Network	IP Address	169.nn.nn.nn	IP address (manual, editable when IP Mode is set to Auto)
	IP Mode	**Auto**, Manual	IP address assignment
	Subnet Mask	255.255.n.n	Subnet mask
	Default Gateway	255.255.n.n	Default Gateway IP address

5.3.2 Stick

In this section the range over which the iris opening is controlled by the stick can be set as well as its center position. The direction of control can also be set in this section.

Section	Setting	Values	Function
 Stick	Iris Mode	**Normal**, Reverse	Selects Iris stick mode
	Iris Range	0..99 **(50)**	Sets Iris stick range
	Iris Center	0..99 **(50)**	Sets Iris stick center position

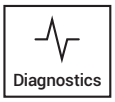
5.3.3 Install

The install section contains item to set up the behaviour of the Tally inputs, the CGP's buzzer and holds the factory reset function.

Section	Setting	Values	Function
 Install	Tally R Inp	Disable, Low/ High, High/Low, Open/High, High/ Open	Selects switching mode of Red Tally/On Air GPIO input on the preview connector.
	Tally Y Inp	Disable, Low/ High, High/Low, Open/High, High/ Open	Selects switching mode of Yellow Tally/On Air GPIO input on the preview connector.
	Tally G Inp	Disable, Low/ High, High/Low, Open/High, High/ Open	Selects switching mode of Green Tally/On Air GPIO input on the preview connector.
	Buzzer	On, **Off**	When switched on, a buzzer signal sounds when a CALL signal is received from the camera.
	Buzzer Lvl	1..16 **(8)**	Sets buzzer audio volume level (when buzzer is switched on).
	Fact Reset	Exec	Carry out a CGP panel factory reset. All settings are cleared except the Camera Selection and Network IP settings. A confirmation popup window is shown to Confirm or Cancel.

5.3.4 Diagnostics

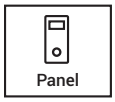
Read-out information about hardware and software versions:

Section	Setting	Values	Function
	MAC Address	MM:MM:MM:SS :SS:SS	Shows CGP hardware MAC address
	Link Type	10 Mbit, 100 Mbit Full/Half Duplex	Shows Ethernnet link speed (type).
(page 1)	Link State	Connected, Not Connected	Shows Ethernet connection status.

Section	Setting	Values	Function
	Type	CGP 500	Shows CGP device type
	PID	0X999X	Shows CGP PID (Product Identification)
(page 2)	Type NC	1-5000100-xxxx	Shows CGP model type number
	Package Info	nn-nnnnn-nnn vnn.nn	Shows CGP Package code and version
	Appl SW	vnn.nn	Shows CGP Application software version
	BootSW	vnn.nn	Shows CGP Boot software version

5.3.5 Panel

Set the panel user preferences in this section: rotaries, LCD and button backlights. Also the camera number is set here.

Section	Setting	Values	Function
 Panel	BlackPot	**Black**, Flare	Assigns either Black level adjustment or Flare adjustment to the lower rotary RGB controls ('BlackPots').
	LCD Backl	0..99 **(50)**	Sets LCD display backlight level.
	Buttn LEDs	0..99 **(50)**	Sets brightness level of the buttons LEDs.
	Tally LEDs	0..99 **(50)**	Sets brightness level of the tally LEDs.
	Camera Sel	1..99	Selects the camera number (when CGP 500 is used stand-alone) to directly connect to a camera system.

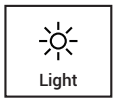
Chapter 6

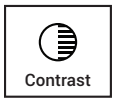
Reference tables

6.1 Video function overview

The reference tables below contain an overview of functions available in the CGA for a typical camera system. Actual functions may vary depending on the camera model, XCU type, videomode, settings and licenses. For more detailed information about these functions, refer to the user's guide of your camera or XCU.

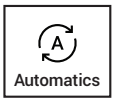
Menu	Submenu	Functions
	Overview	Filter, Iris, Black, System, Color, Gain, Gamma, Video Setup, Detail, Contrast

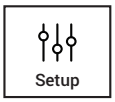
Menu	Submenu	Description
	Main	Range Extende, Iris, Auto Iris, ND Filter, Exposure, Sensitivity Mode, Master Gain
	Path	Range Extender, Iris + Auto Iris, ND Filter, Exposure + Variable Exposure, Master Gain + Sensitivity Mode
	Parameters	Range Extender, Iris, Auto Iris, Peak/Average, Extended Iris, ND Filter, Exposure, Variable Exposure, Lighting, Lighting Select, Sensitivity Mode, Gain Select, Master Gain

Menu	Submenu	Description
	Main	Master Black, Blackstretch, Blackstretch type, Blackstretch level, Contrast, Shadows, Midtones, Highlights, Gamma, Gamma Curve, Knee, Knee Mode
	Black	Master Black, Black Red, Black Green, Black Blue, Auto Black, Full Black, Flare, Flare Red, Flare Green, Flare Blue
	Knee	Knee, Knee Mode, Knee Source, Knee Saturation, Saturation Level, Fade, Point, Max In, Limit Out
	Gamma	Matrix Sequence, Gamma Red, Gamma Green, Gamma Blue, Gamma, Gamma Curve, Master Gamma
	HDR Gamma	HDR Standard, HDR Range, HDR Gamma Low, HDR Gamma High
	Contrast	Contrast, Shadows, Midtones, Highlights
	Blackstretch	Blackstretch, Blackstretch type, Blackstretch level
	White Limit	White Limiter, Level

Menu	Submenu	Description
	Main	Color Temp. Select, Variable Color Temp. Auto White, Matrix Select, Matrix Sequence, Color Gamut, Color Corrector, Correction Set
	Color Temperature	Color Temp. Select, Variable Color Temp., Tint, Auto White, Color Filter
	Painting	Gain Red, Gain Green, Gain Blue, Painting Range
	Saturation	Saturation
	Color Protect	Color Protect, Color Protect Level
	Color Corrector	Color Corrector, Reset, Correction Set, Set Enable, Select Color, Select Width, Sector Name, Smoothing, View, View Insert, Hue, Saturation, Luminance
	Matrix	Matrix Select, Matrix G-R, Matrix R-G, Matrix R-B, Matrix B-R, Matrix B-G, Matrix G-B, Matrix Sequence, Color Gamut

Menu	Submenu	Description
	Main	Detail Level, Detail, SD Detail Level, SD Detal, Skin Detail
	Detail	Detail, Detail Level, Detail Source, Texture, Texture Level, Vertical Detail, Coarse/Fine, Level Dependency, Noise Slicer, Follow Gain, Follow Zoom, Aperture Follow
	4K Detail	4K Detail, 4K Detail Level, 4K Detail Source, 4K Soft Detail, 4K Soft Detail Lvl, 4K Vertical Detail, 4K Coarse/Fine, 4K Level Depend, 4K Noise Slicer
	HD Detail	HD Detail Level, HD Follow 4K
	HDR Detail	HDR Detail, HDR Detail Level, HDR Detail Source, HDR Coarse/Fine, HDR Level Depend
	SD Detail	SD Detail, SD Detail Level, SD Detail Source, SD Soft Detail, SD Soft Detail Lvl, SD Vertical Detail, SD Coarse/Fine, SD Level Depend, SD Noise Slicer
	Skin Detail	Skin Detail, Auto Skin, Skin1 Level, Skin1 Color Red, Skin1 Color Blue, Skin2 Level, Skin2 Color Red, Skin2 Color Blue, Skin3 Level, Skin3 Color Red, Skin3 Color Blue, Skin View, Skin View Insert
	Knee Detail	Knee Detail

Menu	Submenu	Description
	Main	Auto Iris, Extended Iris, Auto Black, Full Black, Auto White, Color Temp Select, Variable Color Temp, Auto Skin, Skin Detail

Menu	Submenu	Function
	Main	Videomode, Sensitivity Mode, Color Gamut, HDR, FX Filter, Color bar, Sawtooth
	Video	Videomode, 3G Output, 4K Output, SD Aspect Ratio, Live output, Sensitivity Mode, Color Gamut
	HDR	HDR
	Effects	FX Filter, LED Wall Filter, Reverse scan, Reverse mode
	Test signals	Color Bar, Sawtooth, No Signal
	Audio	Audio Control, Audio1 Level, Audio1 HPF, Audio1 Limit, Audio1 Output, Audio2 Level, Audio2 HPF, Audio2 Limit, Audio2 Output
	Intercom	Isolate, Eng Wire mode, Eng level, Eng Sidetone, Prod Wire mode, Prod Level, Prod Sidetone, Prog Wire mode, Prog Level
	Timing	V-shift, V-shift level, H-Phase
	White Shading	White Shading, Horiz Saw Red, Horiz Saw Green, Horiz Saw Blue,Horiz Par Red, Horiz Par Green, Horiz Par Blue, Vert Saw Red, Vert Saw Green, Vert Saw Blue,Vert Par Red, Vert Par Green, Vert Par Blue,
	Flare	Flare, Flare Red, Flare Green, Flare Blue
	Lens Control	Lens Control, Zoom Control, Focus Control, Iris, Range Extender
	Signalling	Tally lock, Tally lamp, Tally lamp dimmer, Signalling Source, GPIO Red, GPIO Yellow, GPIO Call, Call, Preview
	Camera	Camera Disable, VF Menu Control, Camera Power, Alias, Camera Device ID
	BaseStation	BS Menu Control, BS Device ID

Menu	Submenu	Function
	Main	Locking (Reference & Gen Lock), System Info, Camera Licenses, Temperature, Software packages
	Transmission	Fiber Transmission, Cable Power

Chapter 7

Specifications

7.1 CCS-ONE Cameras Control Server

7.1.1 Specifications

Item	Value
Hardware type	EPC-SKLU Intel® Core® SoC Processor Fanless Box PC
Dimensions (Height x Width x Depth)	50 x 173 x 123 mm (1.97 x 6.81 x 4.84 in)
Weight	1.2 kg (2.65 lbs)
Operating temperatures	-10 to 50° C (14 to 122° F) (with 1 m/s airflow)
Storage temperatures	-40 to +75° C (-40 to 167° F)
Power requirements	+12 to +26 VDC via DC power adapter
Power consumption (max.)	40 W
LAN Ports	2 x RJ-45 connector; 10/100/1000 Base-Tx Gigabit Ethernet Compatible
Display connectors	2 x HDMI, max. resolution 4096 x 2160 @ 24 Hz (dual display)
USB connectors	4 x USB 3.0 ports + 2 x USB 2.0 ports
Serial ports	1 x RS-232 + 1 x RS-232/422/485

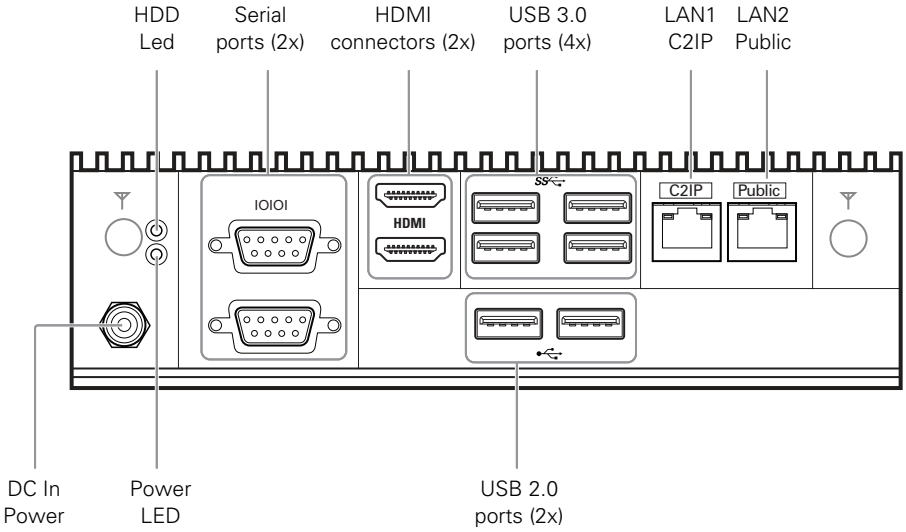
☞ Note

Hardware specifications of the CCS-ONE are subject to change without notice.

7.1.2 Mounting

The CSS-ONE unit can be mounted in or under a desk or onto a wall. Use the (supplied) accessories that suit your mounting situation.

7.1.3 Connectors



7.2 CGP 500 Creative Grading Panel

7.2.1 Specifications

Item	Value
Dimensions (Height x Width x Depth)	354 x 84 x 105.8 mm (13.9 x 3.3 x 4.2 in) without stick
Weight (approx.)	1.5 kg (3.3 lbs)
Operating temperatures	0 to 45° C (32 to 113° F)
Storage temperatures	-25 to +70° C (-13 to 158° F)
Power requirements	+10.5 to +17 VDC via DC power adapter (not supplied)
Power consumption (typ.)	4 W
Ethernet connection	RJ-45 connector; 10/100/1000 Base-Tx Gigabit Ethernet compatible, Power over Ethernet (PoE) compatible
Serial connection	Serial (RS-232 or RS-422 protocol) over Aux connector
Studio signalling	Preview signal, tally red/yellow/green GPIO over Aux connector (with break out to 9-pin D Sub available)

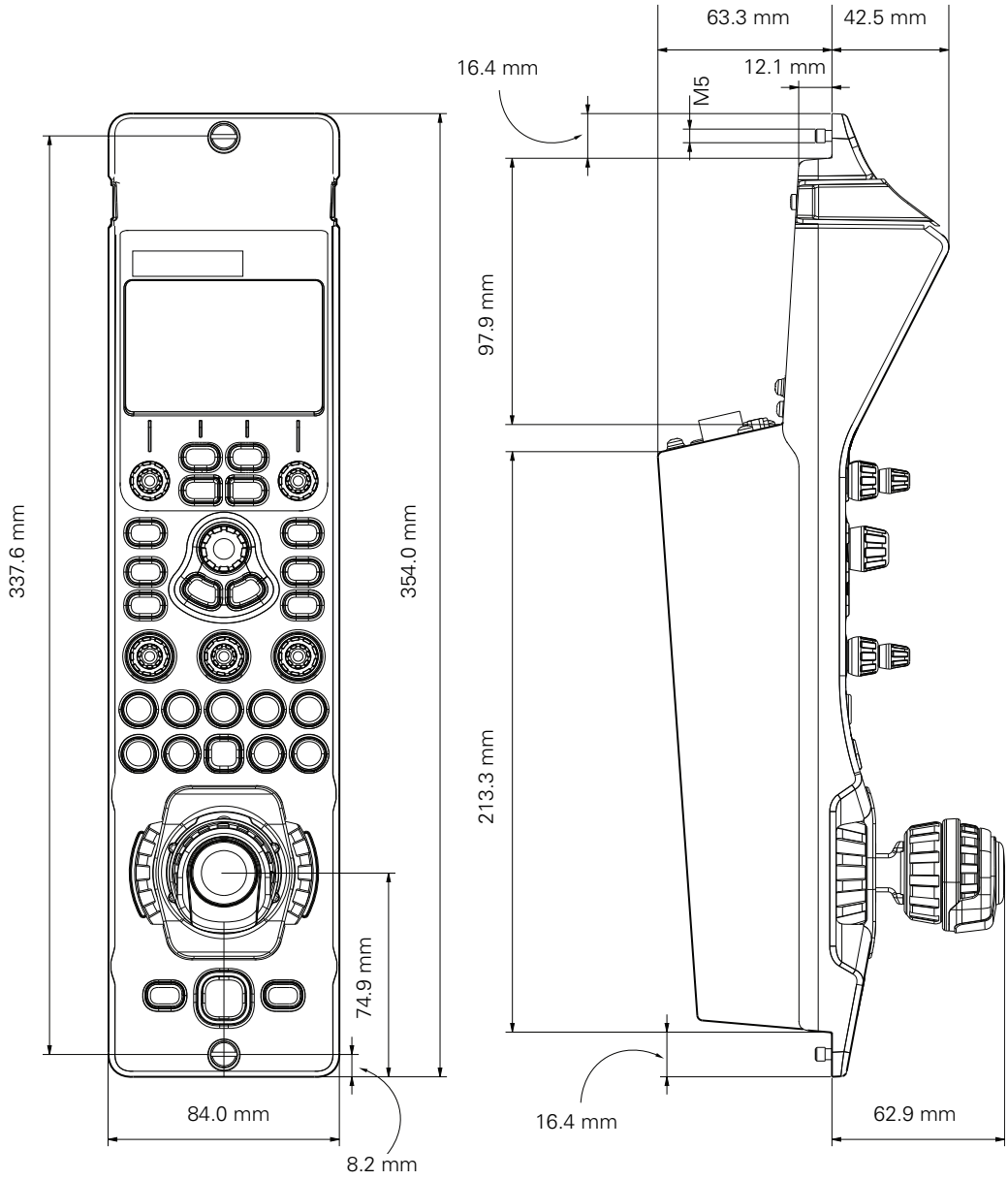
7.2.2 Mounting

The CGP 500 is designed to be mounted into a desk surface. Make sure that the unit is mounted according to your local safety and building regulations and that it is sufficiently ventilated. Leave enough room below the unit to allow cables to run freely.

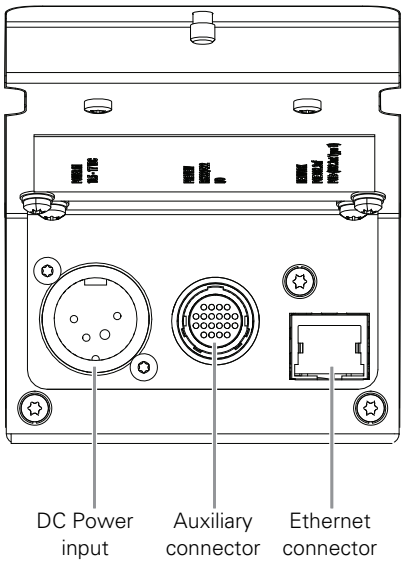
☞ Note

Be aware that the CGP 500 is slightly wider (84 mm compared to 82.5 mm) than its predecessor (OCP 400) so this may affect your desk mounting considerations.

7.2.3 Dimensions

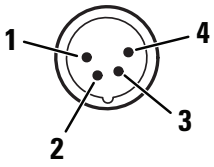


7.2.4 Connectors



Preview break-out cable
(20-pin Hirose to 9-pin Sub D)

DC Power In (XLR 4) connector



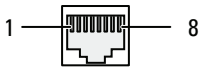
XLR 4-pin male
(panel view)

Pin	Description
1	GND
2	GND
3	+12 VDC input (nominal)
4	+12 VDC input (nominal)

Input working voltage is between 10.5 - 17 VDC with P_{max} < 10 W.

Caution
The input voltage must not exceed +20 VDC.

Ethernet (PoE) connector

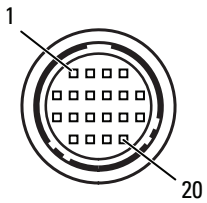


8-pin standard
RJ-45 ethernet
connector

Pin	Description
1	Tx+ (RJ45) (DC+)
2	Tx- (RJ45) (DC+)
3	Rx+ (RJ45) (DC-)
4	DC+
5	DC+
6	Rx- (RJ45) (DC-)
7	DC-
8	DC-

Ethernet 10Base-T, 100Base-TX compliant with IEEE-802.3af (802.3at type 1 “PoE”)

Auxiliary connector

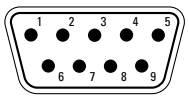


Hirose 20-pin
female (panel view)

Pin	Description	Preview*	RS-422*	RS-232*
Connector: HR10A-13P-20P (female)		Sub D 9p (male)	Sub D 9p (female)	Sub D 9p (male)
1	TxD (RS-232), TX+/GO_B (RS-422)		7	3
2	TX-/GO_A (RS-422)		2	
3	RX+/RET_B (RS422)		3	
4	RxD (RS-232), RX-/RET_A (RS-422)		8	2
5	GPIO contact for Red Tally/On Air	8		
6	GPIO contact for Yellow Tally/ISO	6		
7	GND		5	5
8	GND	9		
9	GPIO contact for Green Tally/ISO	7		
10	+12 V		9	
11	Preview 1B open (dry contact)	2		
12	Preview 1C closed (dry contact)	3		
13	Preview 1A common	1		
14	Spare 5 (digital input) (0-4 V)			
15	Spare 6 (digital output) (0-4 V)			
16	GND	5		
17	Spare 1 (analog input) (0-4 V)			
18	Spare 2 (analog input) (0-4 V)			
19	Spare 3 (analog output) (0-4 V)			
20	Spare 4 (analog output) (0-4 V)	4		
	(Shield)	9		

*) The last three columns in this table list the pin connections to three different types of break-out cables: Preview, RS-422 or RS-232 connections. The preview break-out cable is supplied with the CGP. The serial break-out (RS-422/RS-232) cables can be made according to the given pin-out.

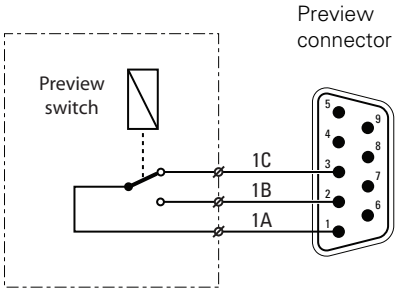
Preview and signalling breakout cable



Sub D connector
9-pin male

Pin	Description
1	Preview contact 1A [1)]
2	Preview contact 1B [1)]
3	Preview contact 1C [1)]
4	+REF external (typ. 4.1 V)
5	GND
6	GPIO contact for Yellow Tally/ISO (=TallyYinp)
7	GPIO contact for Green Tally/Call (=TallyGinp)
8	GPIO contact for Red Tally/On Air (=TallyRinp)
9	shield

[1)] For a Preview contact wiring application, see the example schematic below.



Preview switch not pressed:
1A is connected to 1C

Preview switch pressed:
1A is connected to 1B

7.2.5 Studio signalling

The CGP 500 accepts tally signal inputs at its preview connector, which has three GPIO (General Purpose Input/Output) contacts for tally signals.

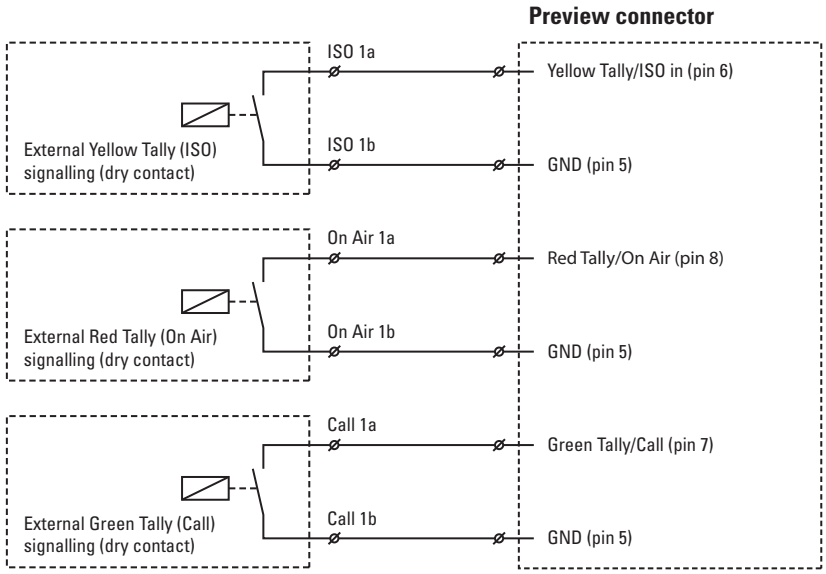
To enable the GPIO inputs on the CGP 500 enter the CGP Setup menu and go to the Install section. Here you can individually enable, disable and configure the tally inputs. For the different options and settings refer to the examples below.

☞ **Note**

Before using studio signalling on the CGP 500, the connected XCU must be configured to use Ethernet based signalling (as opposed to using its own studio signalling GPIO inputs). To do this, enter the menu in the XCU and go to the `INSTALL` > `SIGNALLING INPUT` submenu and set the `ONAIR SOURCE` item to Ethernet.

Dry contact

This is an example of studio signalling with a single CGP 500 with dry contacts:

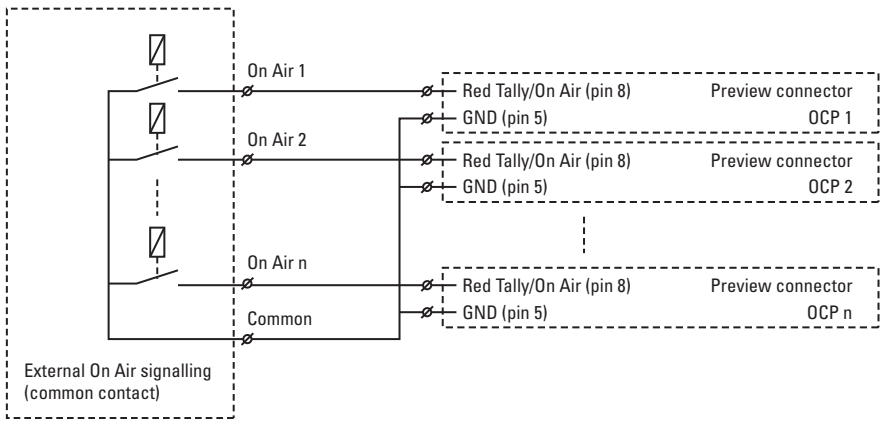


If a contact is closed, the corresponding function is Active or Inactive, depending on the selections in the Install section of the the CGP Setup menu:

Setting	Input is shorted:	Input is open:
Low/High	Function is Active	Function is Inactive
High/Low	Function is Inactive	Function is Active

Dry contact with multiple CGPs

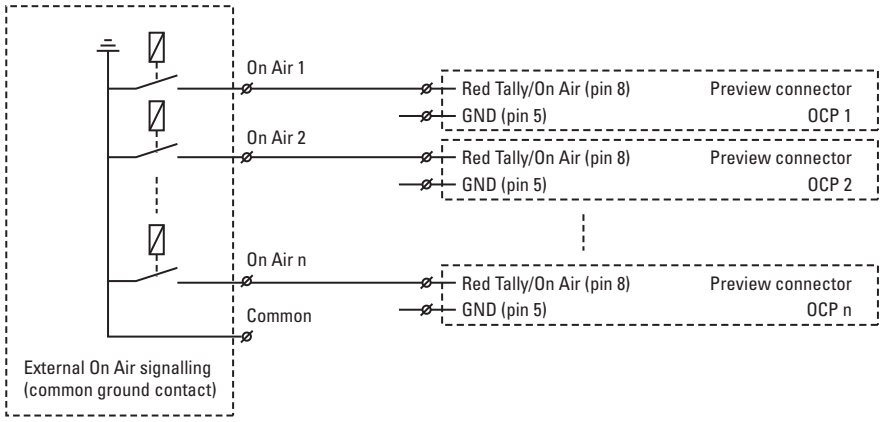
This is an example of an On Air signalling with multiple CGPs using a common contact.



If a contact is closed, the corresponding function is Active or Inactive, depending on the selections in the Install section of the the CGP Setup menu::

Setting	Input is shorted:	Input is open:
Low/High	Function is Active	Function is Inactive
Low/High	Function is Inactive	Function is Active

Common ground



☞ Note

Ensure that a reliable ground coupling exists between the control device and the CGP and ground (pin 5).

If a contact is closed, the corresponding function is Active or Inactive, depending on the selections in the Install section of the the CGP Setup menu:

Setting	Input is shorted:	Input is open:
Low/High	Function is Active	Function is Inactive
Low/High	Function is Inactive	Function is Active

7.2.6 Powering the CGP

The CGP can be powered by the following methods (this is also the powering order sequence):

1. DC Power In (XLR 4) connector
2. Power over the control connector
3. Power over Ethernet (PoE) through the Ethernet connector

☞ Note

Do not use fixed (hard-wired) power inputs to avoid problems if more than one power source is used simultaneously.

Nominal input voltage is between 10 and 17 V. Power in is max. 10 W. The 12 VDC inputs are protected against reversed polarity and Low/High input voltage (until max. 20 V).