

User's Guide

13-00088-000 December 2020 v1.5



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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Website

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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 500/200 — Creative Grading Panel	1-5000100-0200	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	v1.4

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 systems. The large color display, the touch buttons and the multifunctional stick put the camera's creativity back in the operator's hands.



Note

The CGP 500 can also run without a 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 such as tablet-connectivity. The CCS-ONE runs the Creative Grading Engine (CGE) 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 LTSC, which means it can run the latest and greatest network safety tools, as demanded by many broadcasters. This operation system guarantees minimal updates, long support and minimal amount of not-needed processes running in the background.



Note

An MCP 450 PC Box cannot run the Creative Grading Engine (CGE).

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.

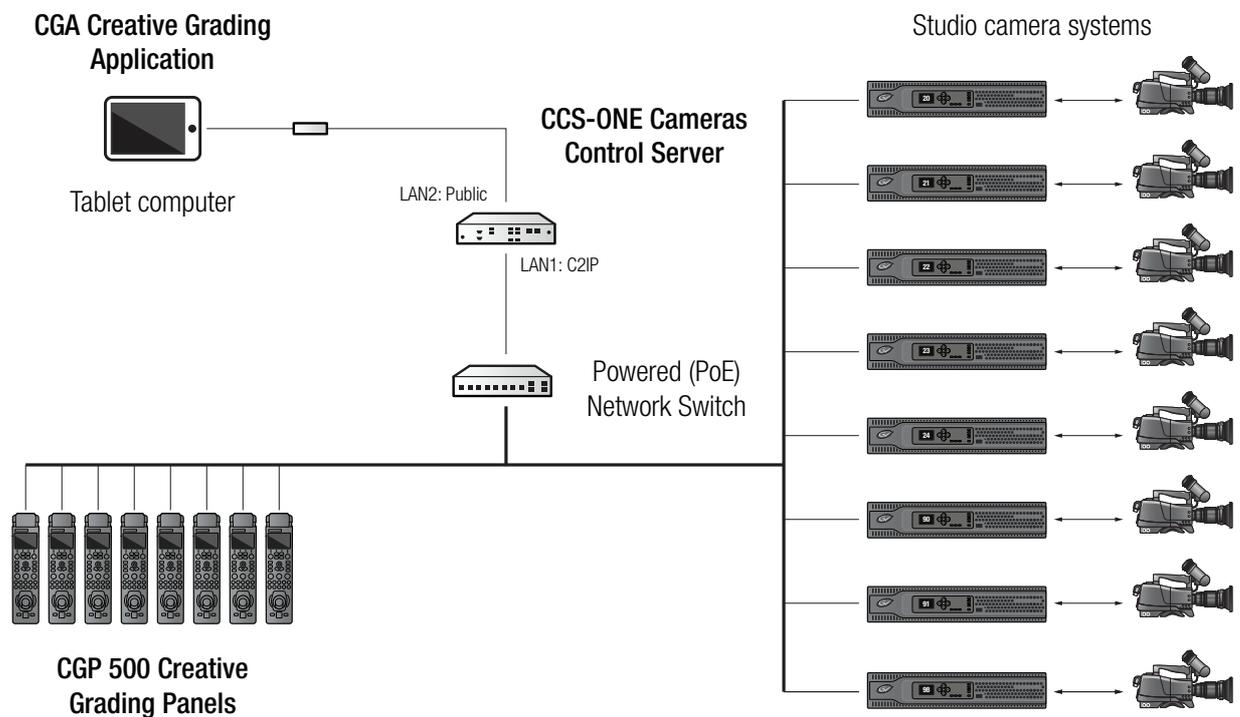
Chapter 2

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 running on a tablet computer 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 and/or parties:

- **Tablet computer** — Apple iPad (at least a 6th generation device 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. By default the server 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 an Ethernet switch to the **C2IP** Ethernet port of the CCS-ONE. Connect CGPs to this switch.



Note

When CGPs, XCUs and/or a CCS-ONE are located in separate LAN (or VLAN) networks, a C2IP Nameserver is required to establish connections between devices in the different networks.

It is allowed to use more than one CCS-ONE server in a camera control system but the servers operate individually, unaware of each other.

2.2.4 Adding a storage USB Flash Drive

As external storage space, a USB Flash Drive can be inserted into a free USB port. The USB Flash Drive can be used in the CGA to store camera files and/or CGP configurations. Refer to the chapter [“CGA Operation” on page 21](#) for more information about using external storage.

2.3 Installing the CGA Creative Grading Application

Make sure that you are using 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 computer

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

- Connect the tablet computer to the **Public** Ethernet port of the CCS-ONE using a suitable Ethernet connection for your tablet computer.
- Apply external power to the tablet computer. It is strongly advised to use an external power supply as most USB-to-Ethernet adapters draw too much power for the internal battery.
- Switch on the tablet computer.

2.3.2 Installing the app

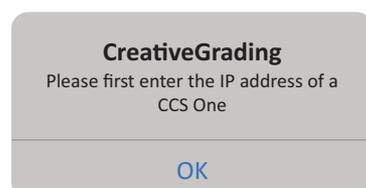
Follow these steps to install the Creative Grading App on your tablet computer:

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

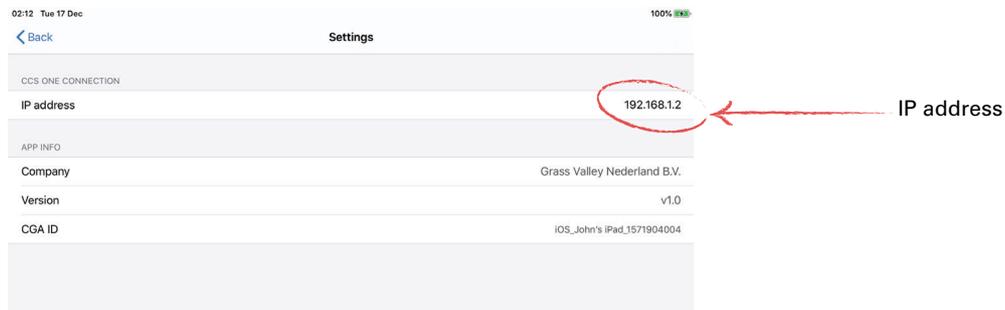


Creative Grading app
Tap this icon to start the app.

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.



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 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

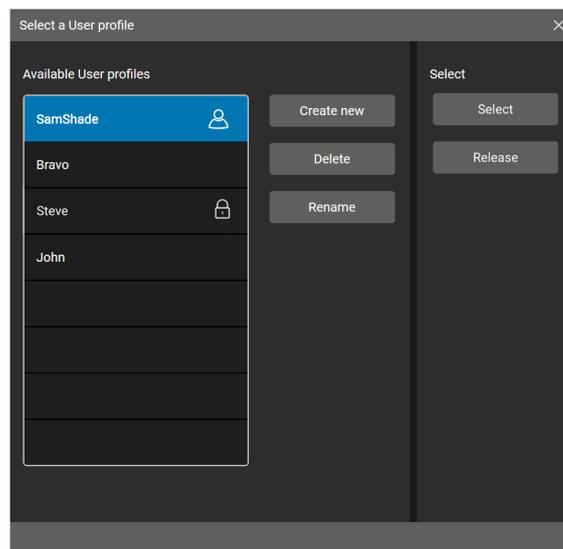
- After applying power to the CGP wait a few seconds for the panel to start up. The Creative Grading logo is shown on the display during the start-up procedure.
- The CGP's IP configuration mode is set to AutoIP mode by default and it automatically connects to the CCS-ONE server.
- Check if the panel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

Chapter 3

Setup

3.1 Managing user profiles

Tap the Creative Grading App on your tablet computer. 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. Continue 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 existing user profiles, or create a new one. The active user profile is indicated by a 'user icon' behind the name.

The 'lock icon' behind a user name indicates that another shader is currently active on the server.

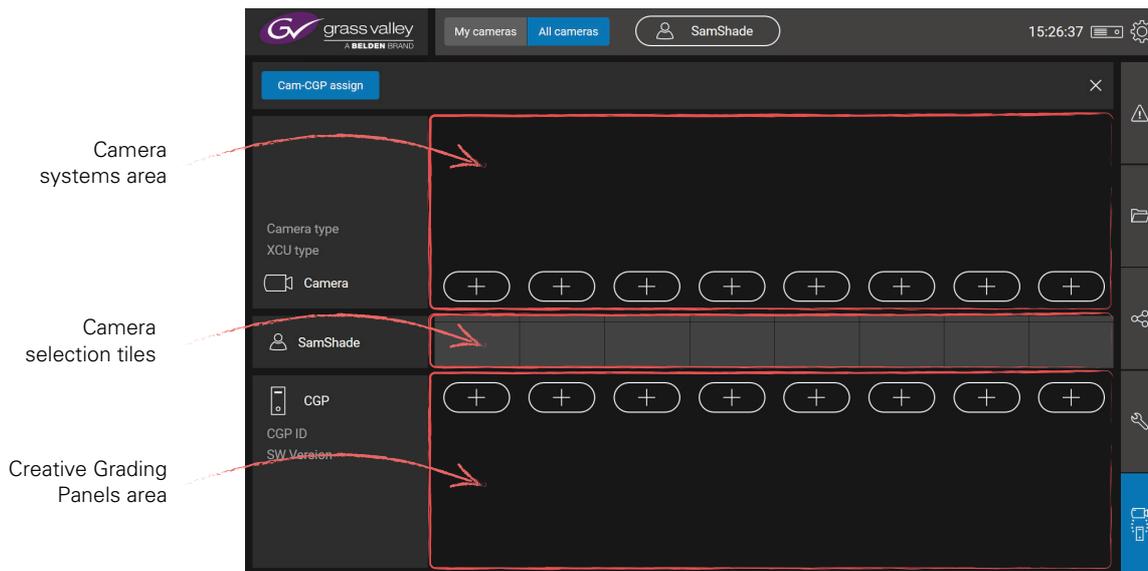
Tap **Release** to log out from the server. This ensures nobody can change camera or system settings when the shader leaves the desk.

3.2 Assigning cameras and CGPs

3.2.1 Cam-CGP assign menu

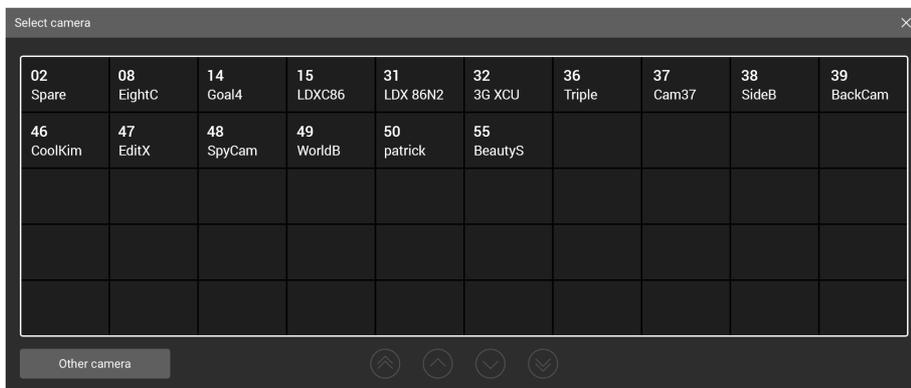
The first step is to assign camera systems and CGPs to your workspace ('My Cameras'). You can add up to 8 cameras and CGPs to your workspace.

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

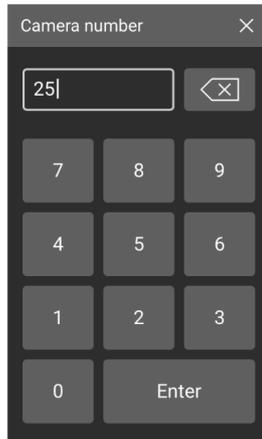


3.2.2 Assigning cameras

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



Tap **Other camera** to manually enter a camera number. This option can be used when a camera is currently not present but will be at a later stage:



The camera system is now assigned to the camera tile. Continue assigning a CGP to this camera system (refer to the next section) or assign more camera systems to your workspace. It is always possible to change, delete or add more cameras or panels later on.

3.2.3 Assigning CGPs

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 to
assign

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

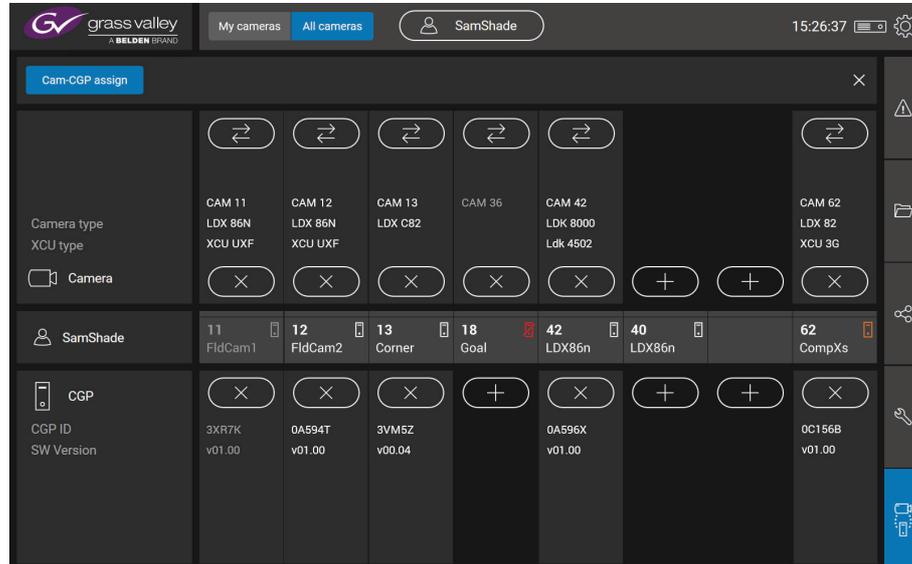


Tip

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. However, for live camera operation it is strongly recommended to assign a CGP.

3.2.4 Managing your assignments

After assigning camera systems and CGPs your workspace should look similar to 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 (if any).
- To delete an assigned camera system tap the  button above the camera tile.
- To delete an assigned CGP tap the  button below the camera tile.

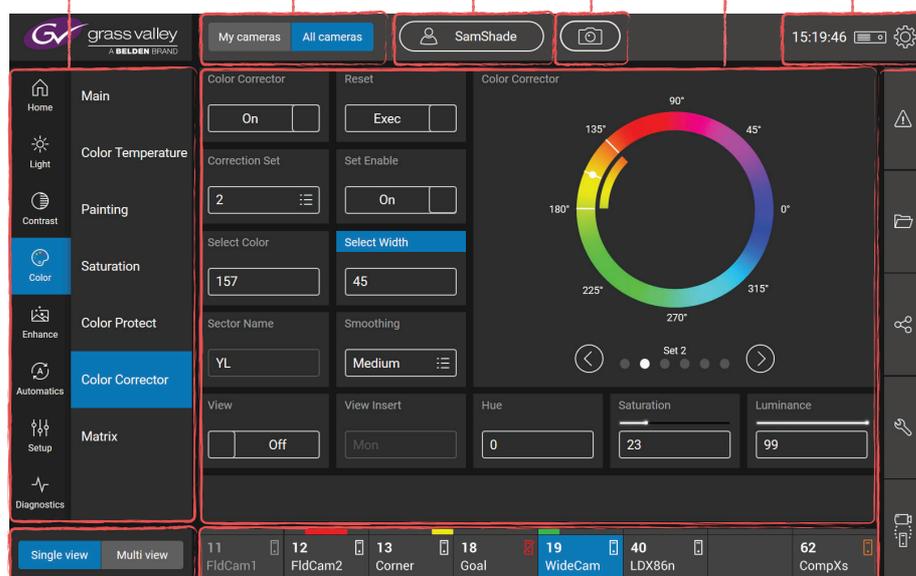
Chapter 4

CGA Operation

4.1 CGA screen layout

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

				Functions area Shows functions and values of the camera (different for single view and multi view modes)
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	Snapshot button Takes a snapshot of all cameras in 'MyCameras'	About and CGA/Server status Shows important information about the CGA and server safe removal of USB Flash Drives



View mode

Select the view mode: Single or Multi view

Camera selection bar

Select a camera and view some status information

Slide-out menus

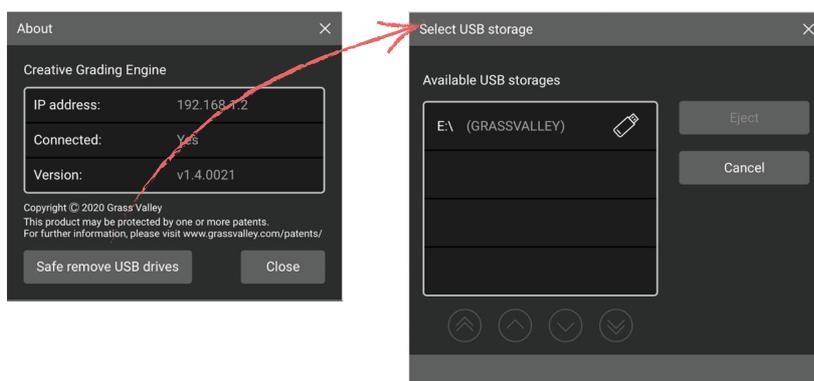
Errors/Warnings, File Management, Share, CGP Config and Cam-CGP assign menus

About and CGA/server status

Tap the server icon to open the about and status window. It shows the server's IP address, connection status and software version.

Safe removal of USB Flash Drive

To avoid losing data, it is important to remove USB Flash Drives safely. Tap **Safe remove USB drives** to select the USB drive from the list and tap **Eject** (or **Cancel**). You can now remove the USB drive from its port on the CCS-ONE.

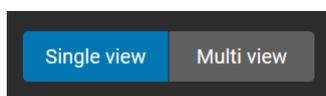


Snapshot button

Tap this button to take a snapshot of the current settings of all cameras in 'MyCameras' selection. Snapshots are stored in the "Snapshots" section of the File Management menu.

4.2 Single camera view

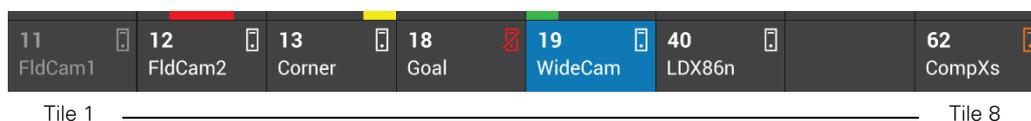
The CGA has two camera view modes: Single view and Multi view. Selecting video functions from the navigation menu works similarly in both view modes. Single view is used to operate one camera. To switch to Single View tap **Single view** in the bottom-left corner of the screen:



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:



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. You can expand or collapse the menus and submenus to find the video function you need.

4.2.3 Functions area

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

<p>Function Displays the name of the function and its value. Tap to change</p>	<p>Graphic Shows a graphic representation of one or more functions</p>
---	---

The screenshot shows the Grass Valley camera control interface. The top bar includes the 'grass valley' logo, 'My cameras' and 'All cameras' tabs, a user profile 'SamShade', and the time '15:19:46'. The left navigation menu has categories like Home, Light, Contrast, Color, Enhance, Automatics, Setup, and Diagnostics. The main area is divided into 'Matrix Sequence' (with 'M/G' selected) and 'Gamma' (with a graph and three sliders for Gamma Red, Gamma Green, and Gamma Blue, all set to 76). Below the sliders are 'Gamma' (set to 'Nom'), 'Gamma Curve' (set to 'ITU709'), and 'Master Gamma' (set to 76). The bottom bar shows camera tiles for '11 FldCam1', '12 FldCam2', '13 Corner', '18 Goal', '19 WideCam' (highlighted in blue), '40 LDX86n', and '62 CompXs'.

Tap a function in the functions area to change its value. A input window appears at the left side of the screen. There are three function types:

- A value range, for example 1 to 100 or 0.0 to 12.0 dB
- A value list, for example {Clear, ND1/4, ND1/16, ND1/64}
- A toggle value: two settings or values, for example On > Off



Slider for value range functions: use the slider to raise or lower the value or tap the + or - buttons.



Numeric input pad for value range functions: enter a number and tap Apply.



Drop down input for value list functions: tap the value from the list and the value is immediately set.



Note

When a function is greyed out, it means that it is unavailable (or blocked).

When a function on the CGA is selected, the central CGA rotary on the CGP becomes active and the LED ring around the rotary lights blue. Turn the rotary to change a range value or to loop through a list of values. Depending on the function, values take effect immediately or after push the rotary to confirm.



Direct control



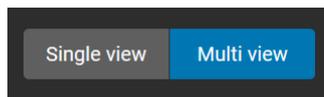
Grouped control

- In multi camera mode the CGP rotaries of all cameras become active (the rings light blue) while each rotary controls its individual camera.
- In multi camera modem when cameras are grouped, the CGP rotaries the grouped camera become active (the rings light green) while each rotary controls the function of all grouped cameras simultaneously.

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.

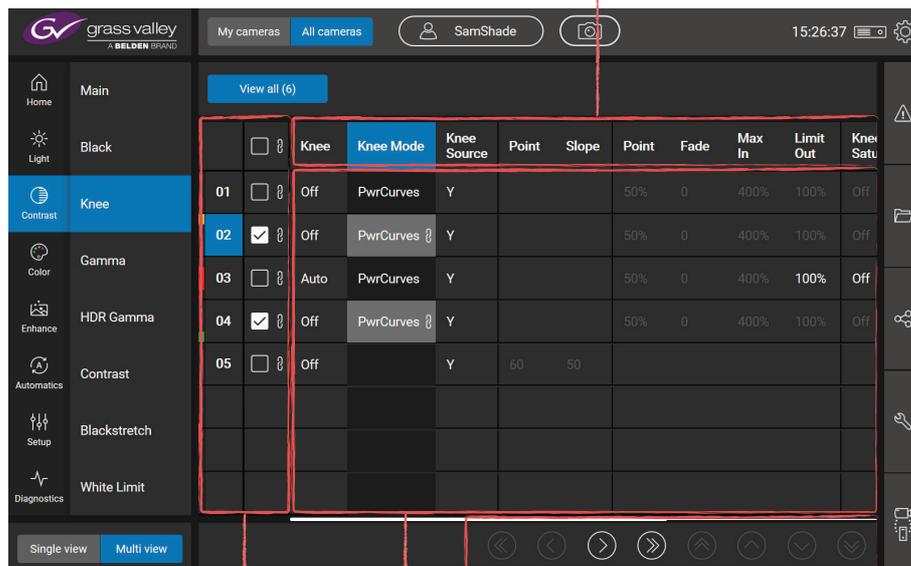
To switch to multiple camera view mode, tap **Multi view** in the bottom-left corner of the screen:



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:

Function 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 grid
Shows values for all video functions.

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

To change a function value tap a value in the value grid; both its corresponding function (in the top row) and the camera (in the camera selection area) are selected.

4.3.1 Grouping cameras

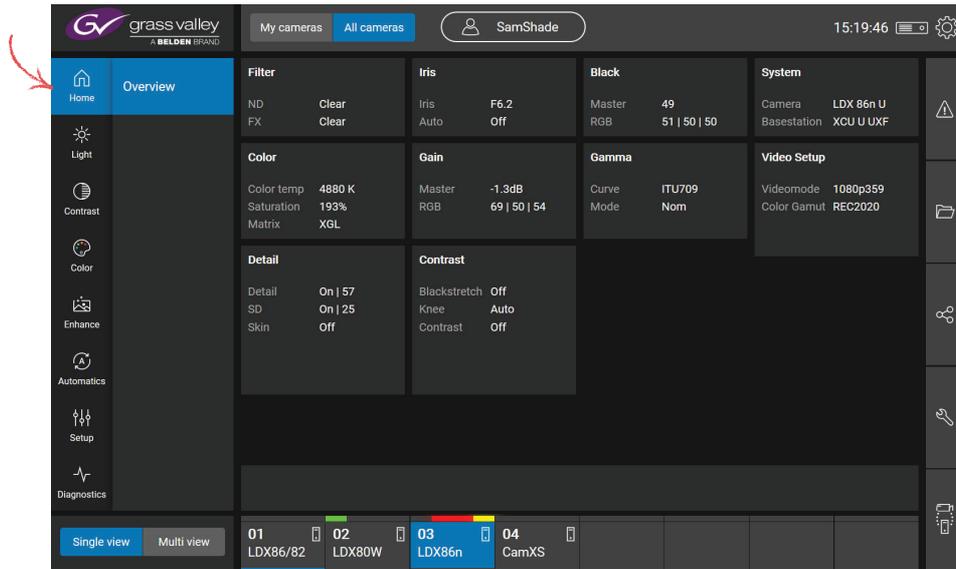
To operate one or more cameras simultaneously, tap the camera number(s) on the vertical camera selection bar at the left side of the function area.

4.4 Operational video functions

The navigation area contains the video function menu. At top level, there are 8 menus: the first menu is **Home**, then 5 main video/operational menus (**Light, Contrast, Color, Enhance** and **Automatics**) and 2 menus for **Setup** and **Diagnostics**.

4.4.1 Home menu

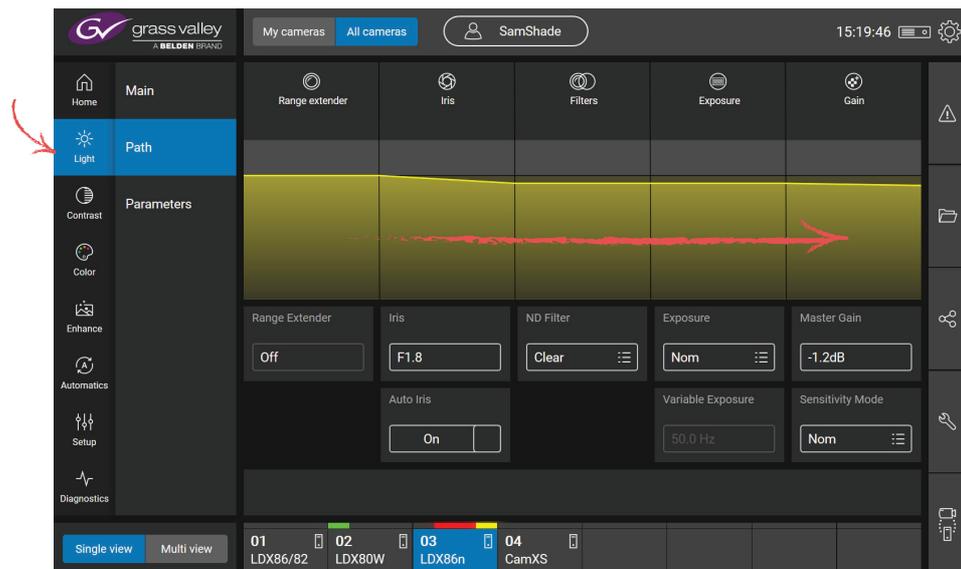
This menu contains a summary of important functions in a compact overview. Tap a function tile to change a function's value.



4.4.2 Light menu

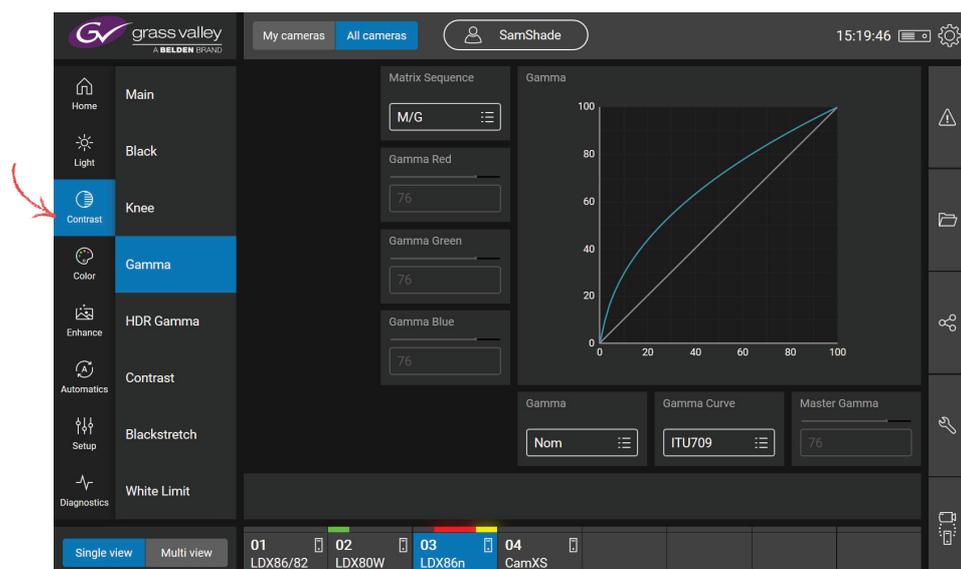
The Path submenu shows the influence of each parameter on the entire 'light' path from the incoming light at the left (from the lens) through the optional Range Extender, Iris (opening of the lens), optical Filters, Exposure time and finally Gain plus sensitivity.

By adjusting a light parameter (in the lower half of the screen) you can immediately 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:



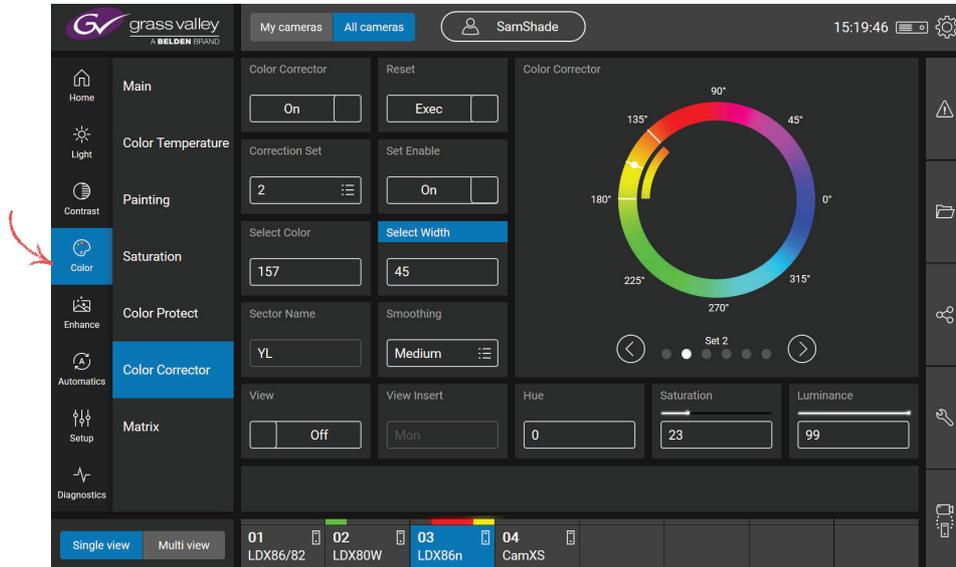
4.4.3 Contrast menu

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



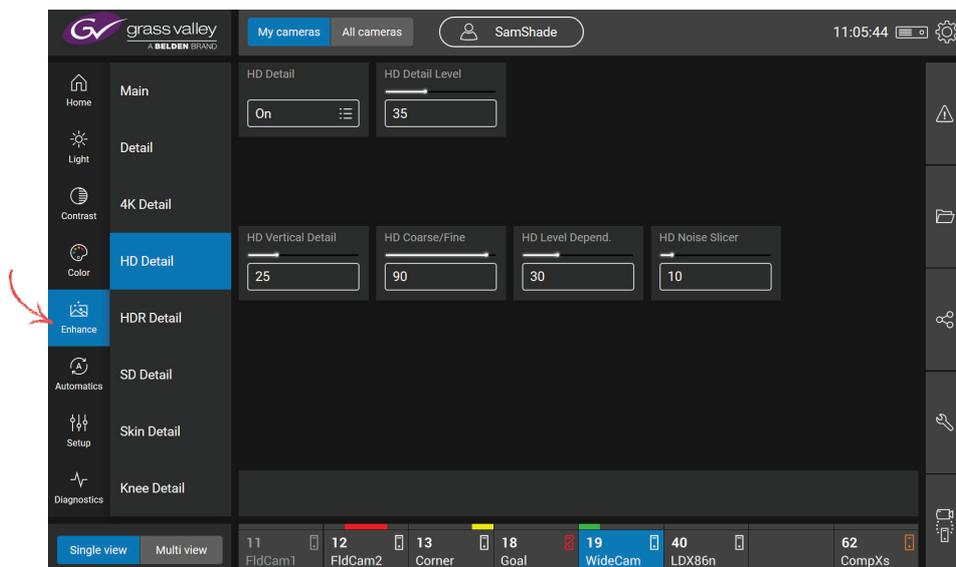
4.4.4 Color menu

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



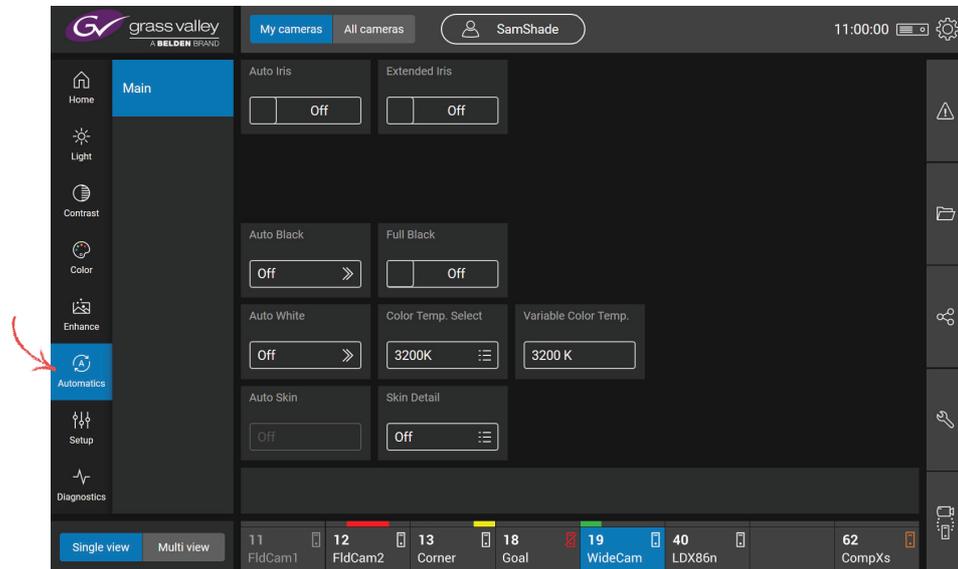
4.4.5 Enhance menu

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.



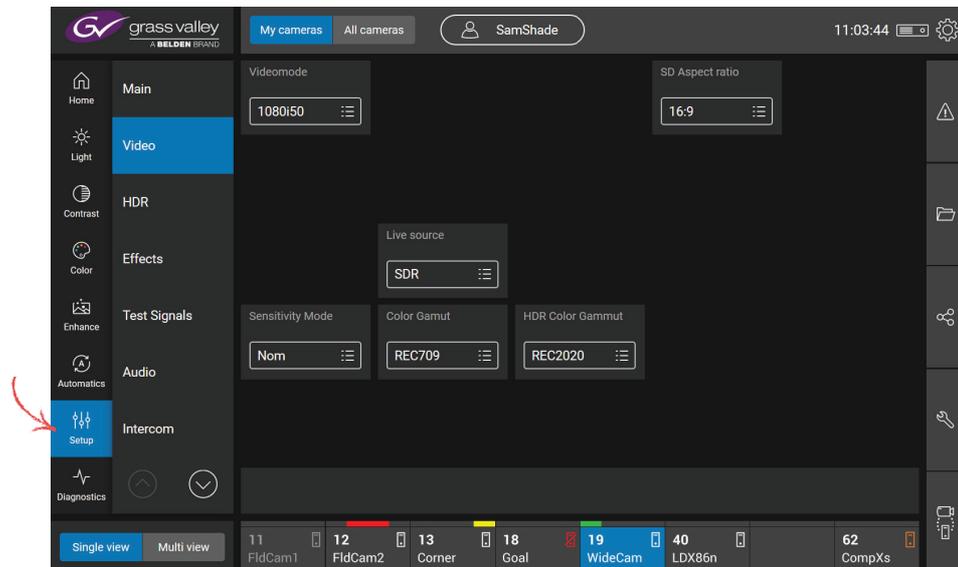
4.4.6 Automatics menu

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



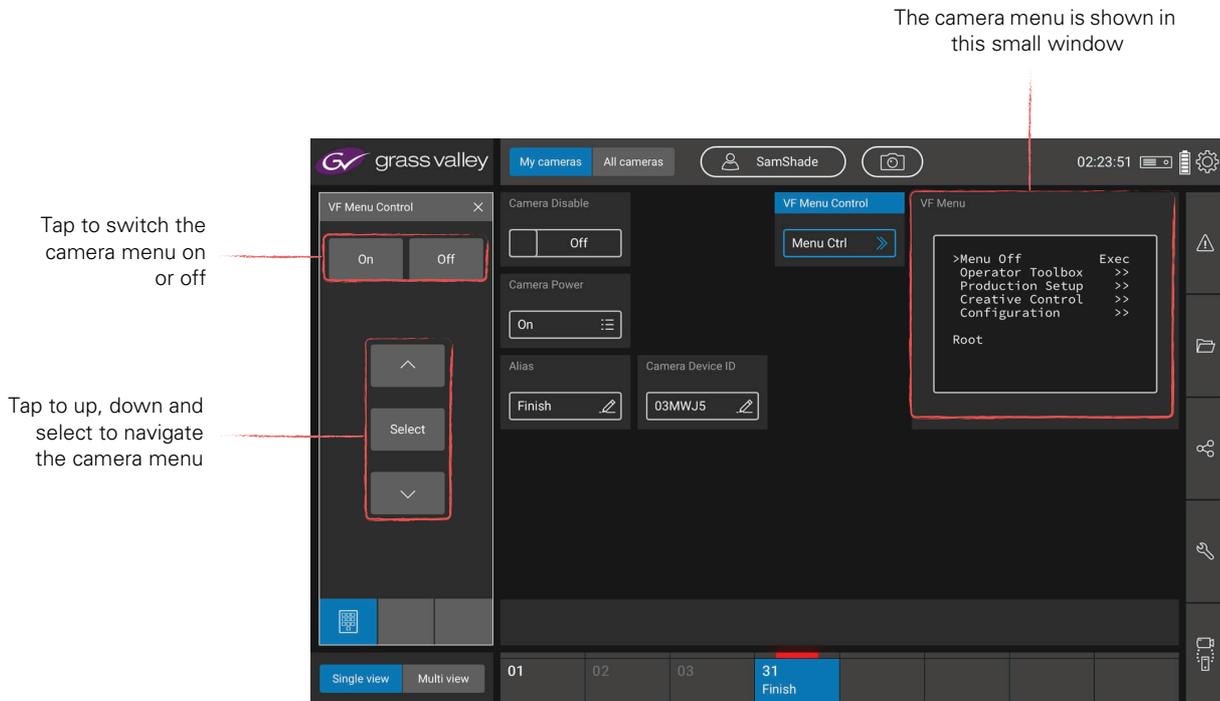
4.4.7 Setup menu

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



Accessing the camera menu ('VF Menu')

The CGA can be used to remotely access the camera menu. In the **Setup** menu, scroll down to navigate to the **Camera** submenu and tap the **VF Menu Control** item. A navigation window is shown at the left side of the screen:



Tap **On** to switch on the camera menu. The contents of the menu are shown in a small tile in the function area as well as on the monitoring output and/or in the viewfinder.

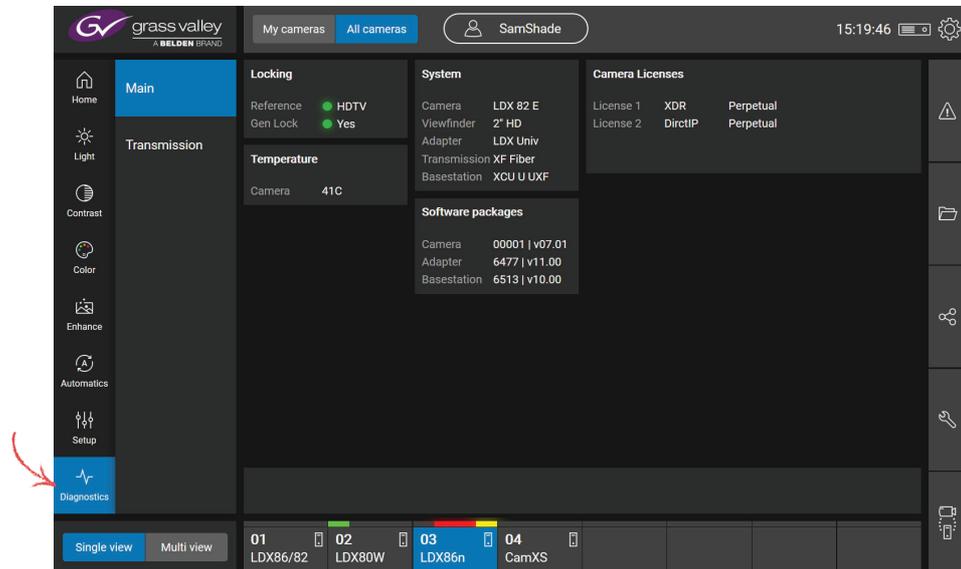
Additionally, you can use the CGA navigation rotary on the CGP to navigate the camera menu (turn to scroll and push to select).

Accessing the XCU/base station menu

The CGA can be used to remotely access the XCU/base station menu. In the **Setup** menu, scroll down to navigate to the **BaseStation** submenu and tap the **BS Menu Control** item.

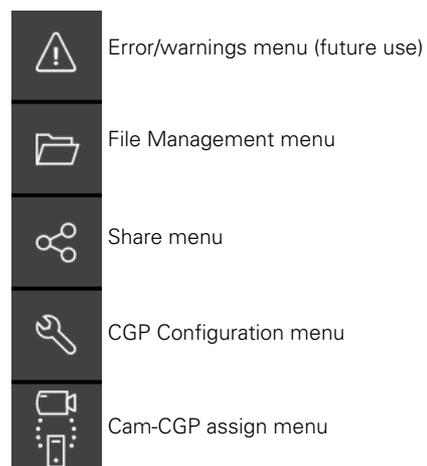
4.4.8 Diagnostics menu

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



4.5 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:



4.5.1 File Management menu

Presets

At the top of the screen, tap the Presets or Snapshots selection button:



Presets are Scene files that contain video functions and their values. A camera holds (up to) 4 preset files and 2 standard files: factory and customer. The Active settings are also managed as a preset file.

Files matrix

The screenshot shows the 'Files matrix' interface. At the top, there are 'Presets' and 'Snapshots' buttons. Below them is a table with columns for 'Active settings', 'Preset 1', 'Preset 2', 'Preset 3', 'Preset 4', 'Factory standard', and 'Customer standard'. The rows represent cameras 01 through 05. The 'Presets' button is highlighted in blue. The grid has columns for Active settings, Preset 1, Preset 2, Preset 3, Preset 4, Factory standard, and Customer standard. The 'Presets' button is highlighted in blue. The grid has columns for Active settings, Preset 1, Preset 2, Preset 3, Preset 4, Factory standard, and Customer standard. The 'Presets' button is highlighted in blue.

Selection buttons (points to the Presets/Snapshots buttons)

Camera selection (points to the checkboxes in the first column of the matrix)

Action buttons (points to the Recall, Store, Rename, Lock, Unlock, Load, Save buttons at the bottom)



Tip

Create a group of cameras by ticking one or more checkboxes next to the camera numbers and manage files simultaneously for the group of cameras. Tick the top left checkbox to select all cameras.

Actions

Select a file in the matrix by tapping it and then one of the action buttons at the bottom of the screen:

Recall — copies the selected file to the camera's active settings. It is not possible to recall a file while the camera is On Air.

Store — copies the camera's Active settings to the selected file. It is not possible to store a file when it is locked.

Rename — changes the name of the file. It is not possible to rename a file when it is locked.

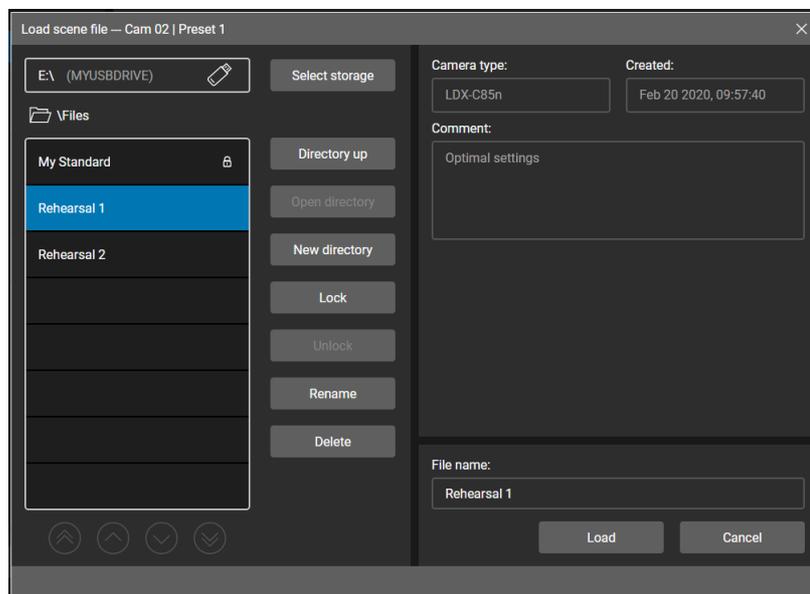
Lock/Unlock— to prevent a file from being overwritten it can be locked. When a file is locked, a small lock symbol is shown behind the filename. Tap **Unlock** to unlock the file.

Load — copies a file from the USB Flash Drive.

Save — copies the selected file to the USB Flash Drive.

Storing to USB Flash Drive

The **Load** and **Save** actions open the file browser dialog. Tap the storage drop down box at the top left, select the USB Flash Drive and tap **Select storage**. Make sure a USB Flash Drive is inserted into a USB port on the CCS-ONE.



The Files box displays directories and (only) scene files present in the current directory.

Directory up — navigates up one directory level

Open directory — opens the directory and navigates down one level

New directory — creates a new directory in the current directory

Lock/Unlock — locks or unlocks the selected file so it can not be deleted or overwritten

Rename — renames a file or directory (if not locked)

Delete — deletes a file (if not locked) or a directory (if empty). Note that a directory may appear empty but can still hold files (only Scene files are shown).



Note

Always remove a USB Flash Drive by using the **"Safe removal of USB Flash Drive"** procedure.

After selecting the storage and file the file name appears at the right side of the window along with the camera type, creation date and comment (if present):

- Tap the **Save** button to save the (best) selected snapshot to a Scene file on an external USB Flash Drive. This Scene file can be loaded and used as a preset file in the presets section.
- Tap the **Protect/Unprotect** button to (un)protect a snapshot to prevent it from deletion.
- Tap the **Delete** button to delete a snapshot.

Snapshots are temporary files and they will be deleted in the following cases:

- For each camera up to 10 snapshots are stored. When more than 10 snapshots are created, the oldest will be deleted. Snapshots can be protected against removal in case a limit of 10 is reached.
- When a camera is removed from *MyCameras* its associated snapshots are deleted.
- Snapshots are automatically deleted 48 hours after they were created (even when they are protected).
- All snapshots are deleted after a reboot of the CCS-ONE. If you want to keep it, store the snapshot as a Scene file.



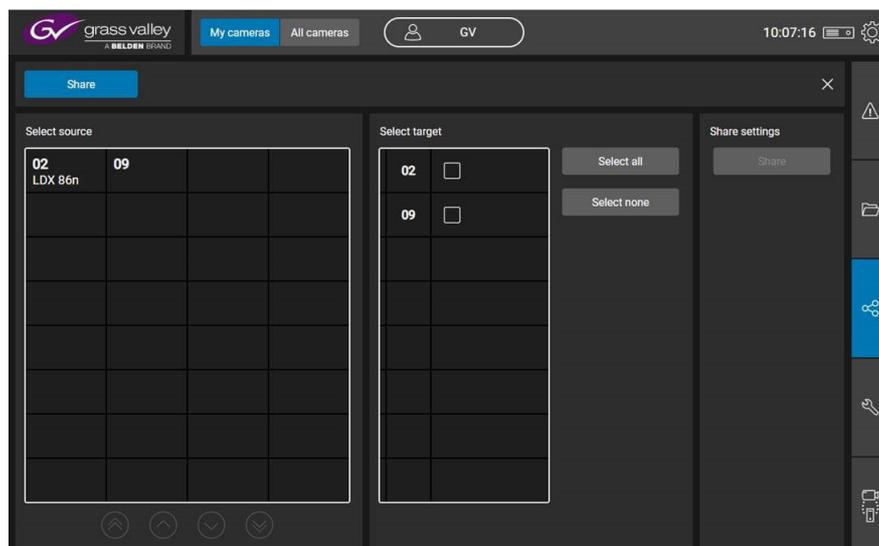
Note

Snapshots are kept in your User Profile.

4.5.2 Share menu

In this menu you can quickly share scene settings between cameras:

- Select a camera at the left side of the screen—the camera tile is highlighted.
- Select one or more cameras at the middle section by ticking the checkboxes. Tap the **Select All** or **Select none** button to help selecting.
- Tap **Share settings** at the right side to share.



4.5.3 CGP configuration menu

In this menu the assignable buttons of the CGP(s) can be set up. The Assignment area in the center of the screen shows the buttons and their (current) assignments. At the top the page name is shown.

Tap the pencil icon to enter a name for the page. Tap the Prev or Next to scroll through the different pages. Up to three pages of assignments can be set up.

Tap a function to change an assignment (for the selected button). The selection list appears at the right side of the screen. Select a function from this list.

Selection list

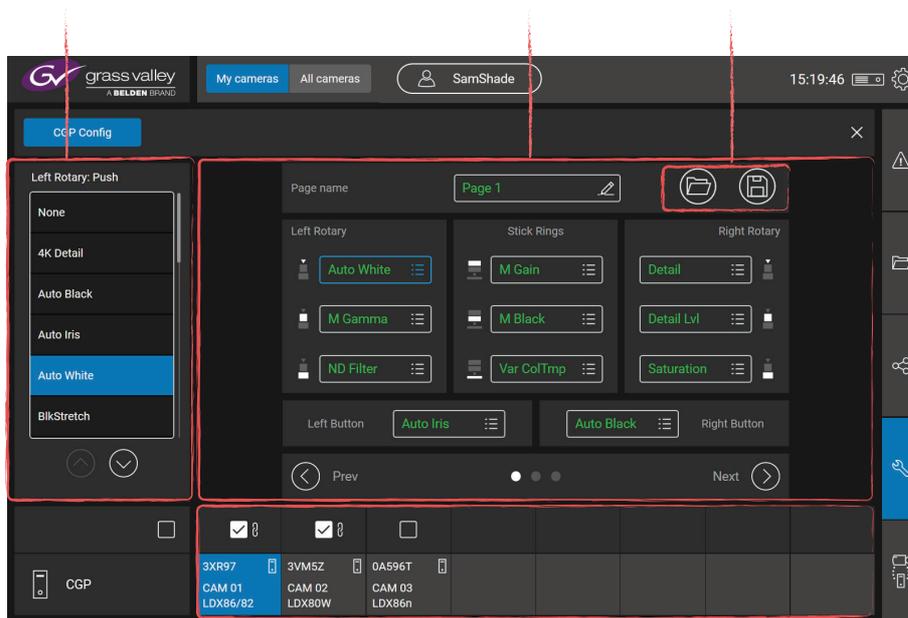
Select a function from the list for the selected button

Assignment area

Current assignments for all assignable buttons

Load/Save buttons

Load or save a CGP configuration



CGP selection

Select one or more CGP(s) to change the button assignments

At the bottom the CGP selection bar is shown. By default the current/active CGP is highlighted and selected but you can also tap a different CGP to change its assignments.



Tip

Create a group of CGPs by ticking one or more checkboxes above the corresponding CGPs to change assignments for the group.

Load CGP configuration

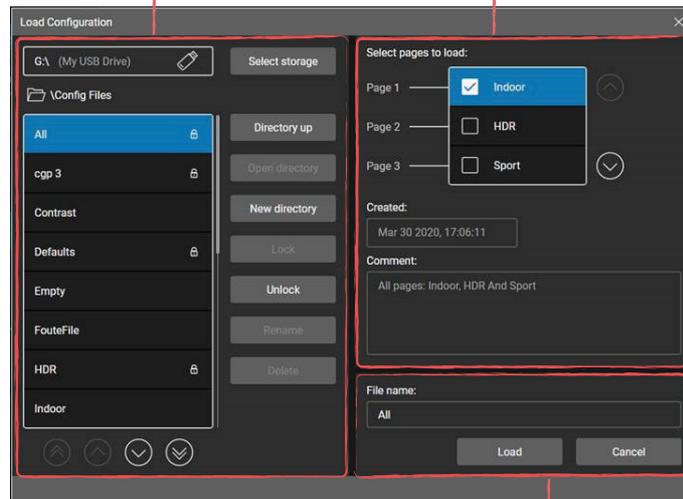
Tap the  button at the top right corner to open the Load Configuration window. Select a group of CGPs by ticking their checkboxes to load the same configuration to all CGPs.

File area

Manage files/directories and storage devices

Page selection

Select one or more CGP assignment pages to load



File name

Enter file name and Load or Cancel

4.5.4 Cam-CGP assign menu

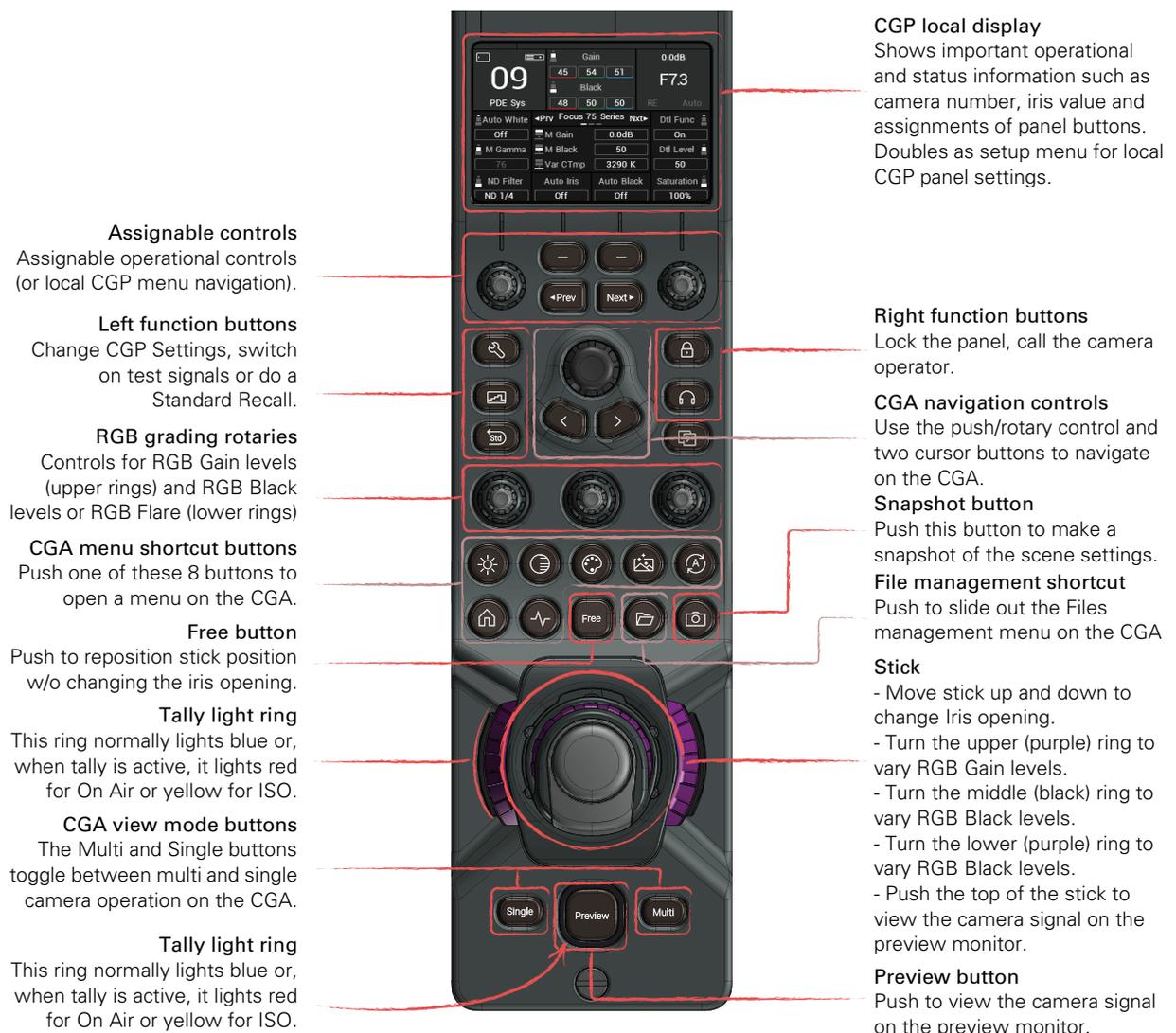
In this menu the Camera (systems) and CGP (panels) can be set up. Refer to [Section 3.2.1 on page 16](#) for detailed information about this menu.

Chapter 5

CGP Operation

5.1 Panel layout

The illustration below shows the controls and buttons of the CGP:



When the CGP is operational, its buttons and controls are illuminated. The normal color of an available button is dim blue. The light shines brighter blue when a button is selected and/or active. The buttons is off when its function is not available.

5.1.1 CGP local 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 46](#) for more detailed information about the CGP display.

5.1.2 Right function buttons

Panel Lock button

Push the **Panel Lock** button to lock the operation panel of the CGP. This button lights when the panel is locked (On). When off, all functions of the CGP can be used.

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.

5.1.3 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.

5.1.4 Snapshot button

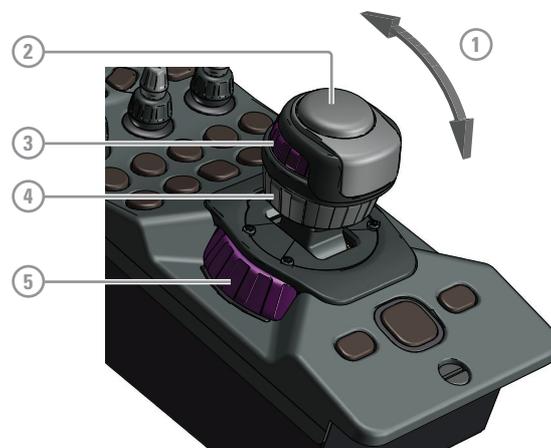
Push this button to make a snapshot of the camera's current (scene) settings. The button lights briefly and a new snapshot for this camera is added to the snapshot matrix in the CGA (under File management).

5.1.5 File management shortcut button

Push this button to open the File management slide-out menu on the CGA.

5.1.6 Stick

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 view 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 the 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.



5.1.7 Preview button

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

5.1.8 CGA view mode buttons

CGA multi view button

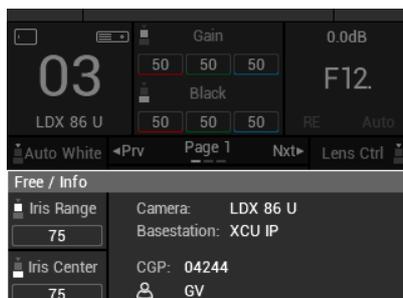
This button has a double function: when pushed, the CGA changes to multi view mode AND this CGP is selected as the active panel. The buttons is highlighted.

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.

5.1.9 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.

5.1.10 CGA menu shortcut buttons

Push one of these 7 shortcut buttons to directly open a menu on the CGA:

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

Push the shortcut button repeatedly to navigate through the submenus on the CGA.

5.1.11 RGB grading rotaries

These three stacked rotary controls vary RGB gain levels (upper rotary) and R,G and B black levels (lower rotary). The lower rotary can also be set to RGB Flare controls in the "**CGP Settings**" on page 48.

5.1.12 Left function buttons

CGP settings button

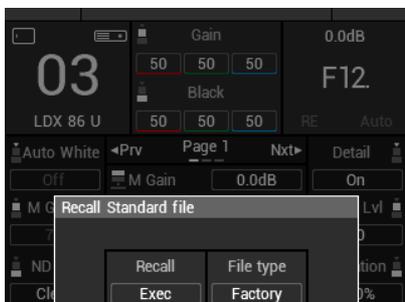
Push the **CGP Settings** button to open the CGP Settings menu. Refer to "**CGP Settings**" on page 48 for more information about the CGP Settings.

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.

5.1.13 Assignable controls

These 4 push buttons and 2 (stacked) rotary controls with push buttons on top can be assigned to any operational camera function. The assignments are done in the CGA using the CGP config menu. Refer to **“CGP configuration menu” on page 36** for more information.

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.



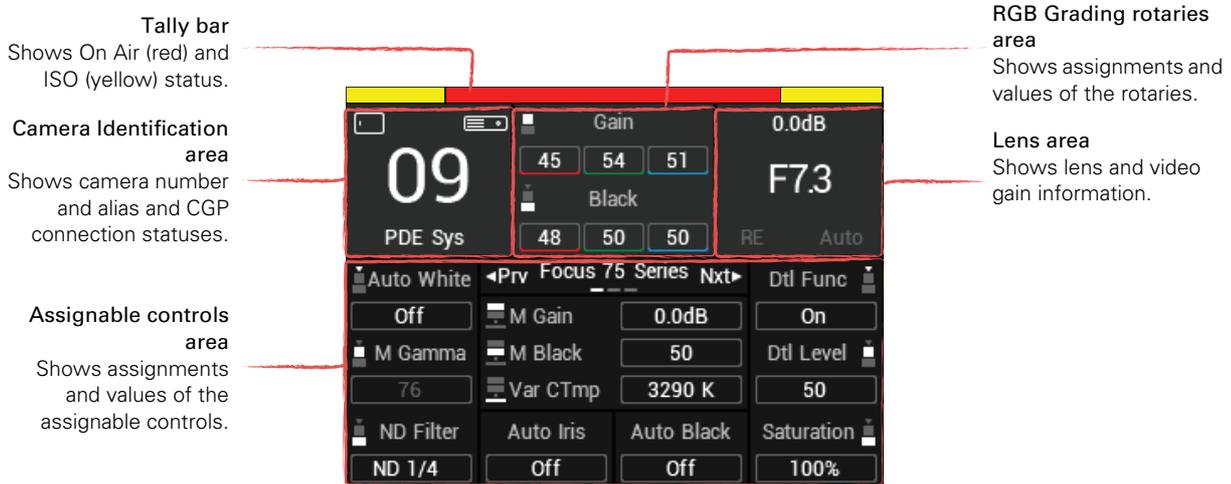
③ Next and Previous buttons

Use the **Prev** and **Next** buttons to scroll through the different pages of assignable buttons/functions. There are up to three pages of assignments that can be configured.



5.2 CGP local display

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

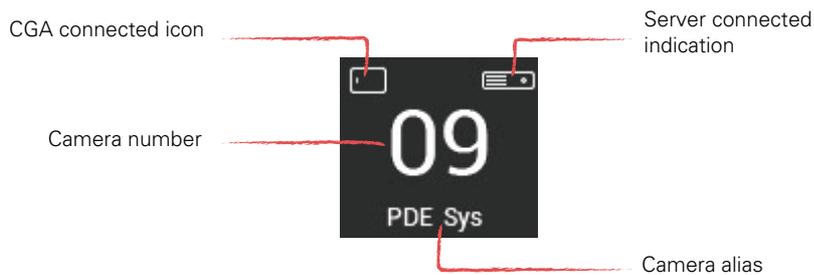


5.2.1 Tally bar

The top bar shows the status of the tally signals: a large red bar in the middle for On Air and two smaller yellow bars at the left and right sides for ISO.

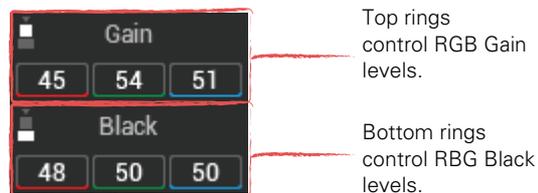
5.2.2 Camera identification area

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



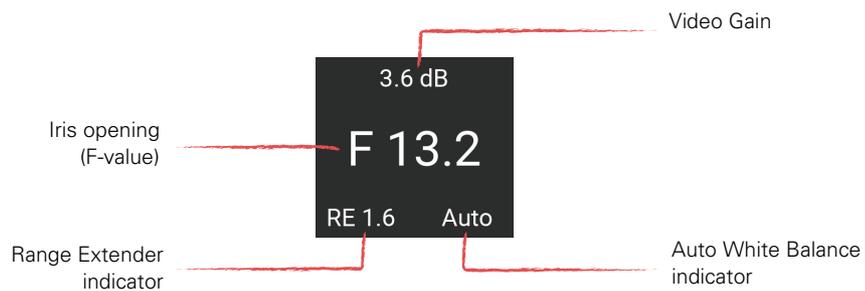
5.2.3 RGB Grading rotaries area

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.

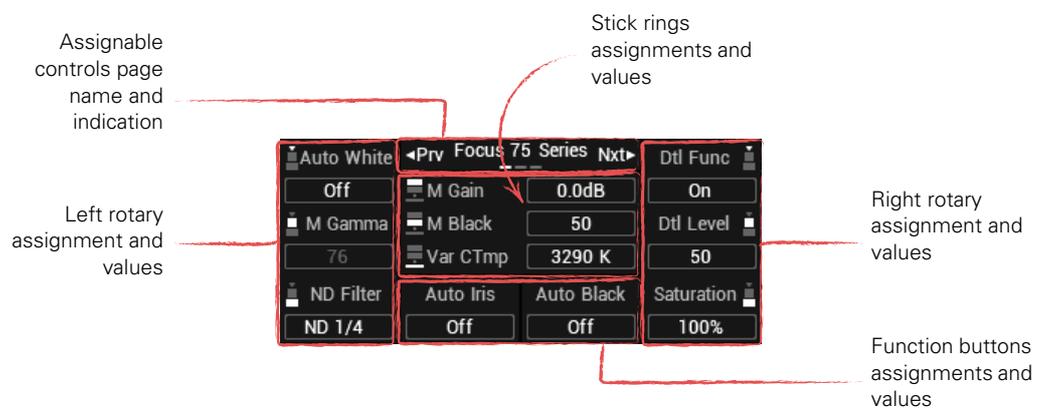


5.2.4 Lens area

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

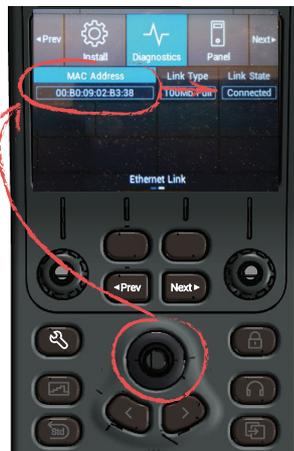


5.3 CGP Settings

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 to confirm the new value.

5.3.1 Network

To operate in the IP network the CGP must have a unique identification. By default, the IP address is assigned automatically: IP Mode = Auto. Set the IP Mode to manual to set or change the IP Address.

Section	Setting	Values	Function
	IP Address	169.nn.nn.nn	IP address (manual, editable when IP Mode is set to Auto)
	IP Mode	Auto, Manual	IP address assignment mode
	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
	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 items to set up the behaviour of the Tally inputs, the CGP's internal signal buzzer. It also contains the factory reset function.

Section	Setting	Values	Function
	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

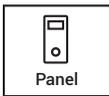
Read-out information about hardware and software versions:

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 Ethernet 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: lower rotaries function and LCD backlight level. The camera number is also selected here.

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

Chapter 6

Reference tables

6.1 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
 Contrast	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
 Color	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
 Enhance	Main	Detail Level, Detail, SD Detail Level, SD Detail, 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



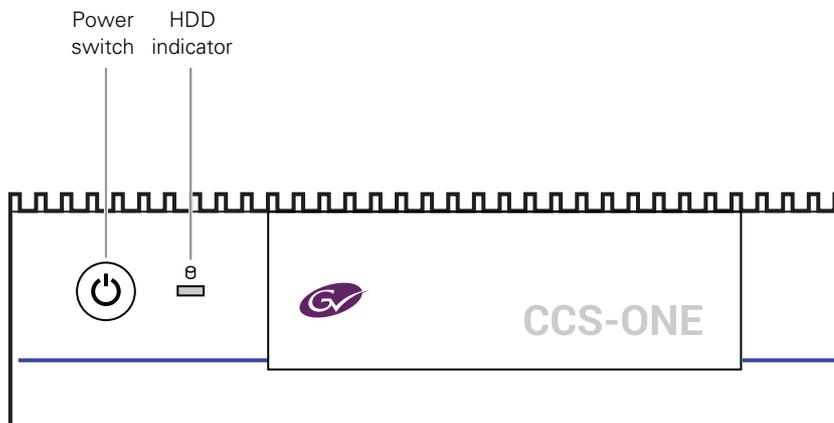
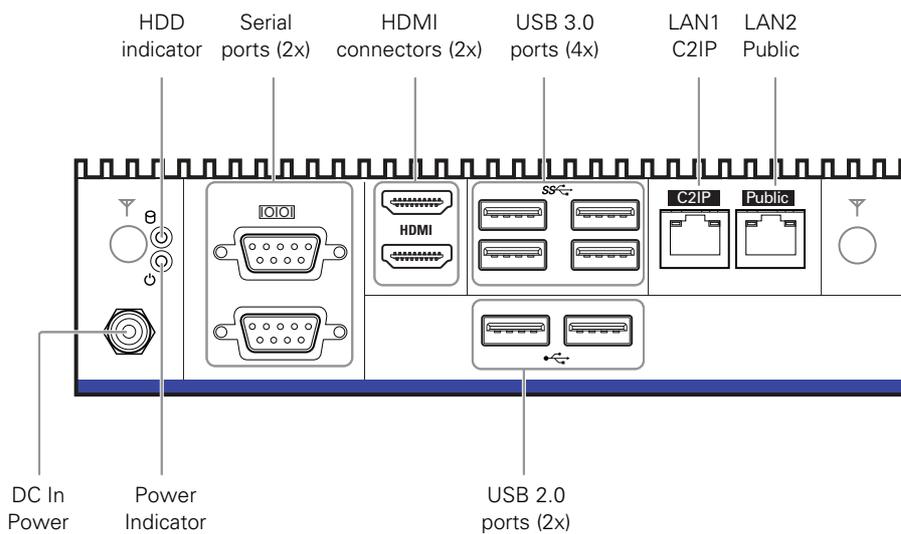
Note

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 Mb/sec (10Base-T); 100 Mb/sec (100Base-TX), Power over Ethernet (PoE) compatible acc. to IEEE 802.3af (802.3at Type 1)
Serial connection	Serial (RS-232 or RS-422 protocol) over Aux connector
Studio signalling	Preview signal, tally red/yellow/green GPIO over preview connector.

7.2.2 Mounting

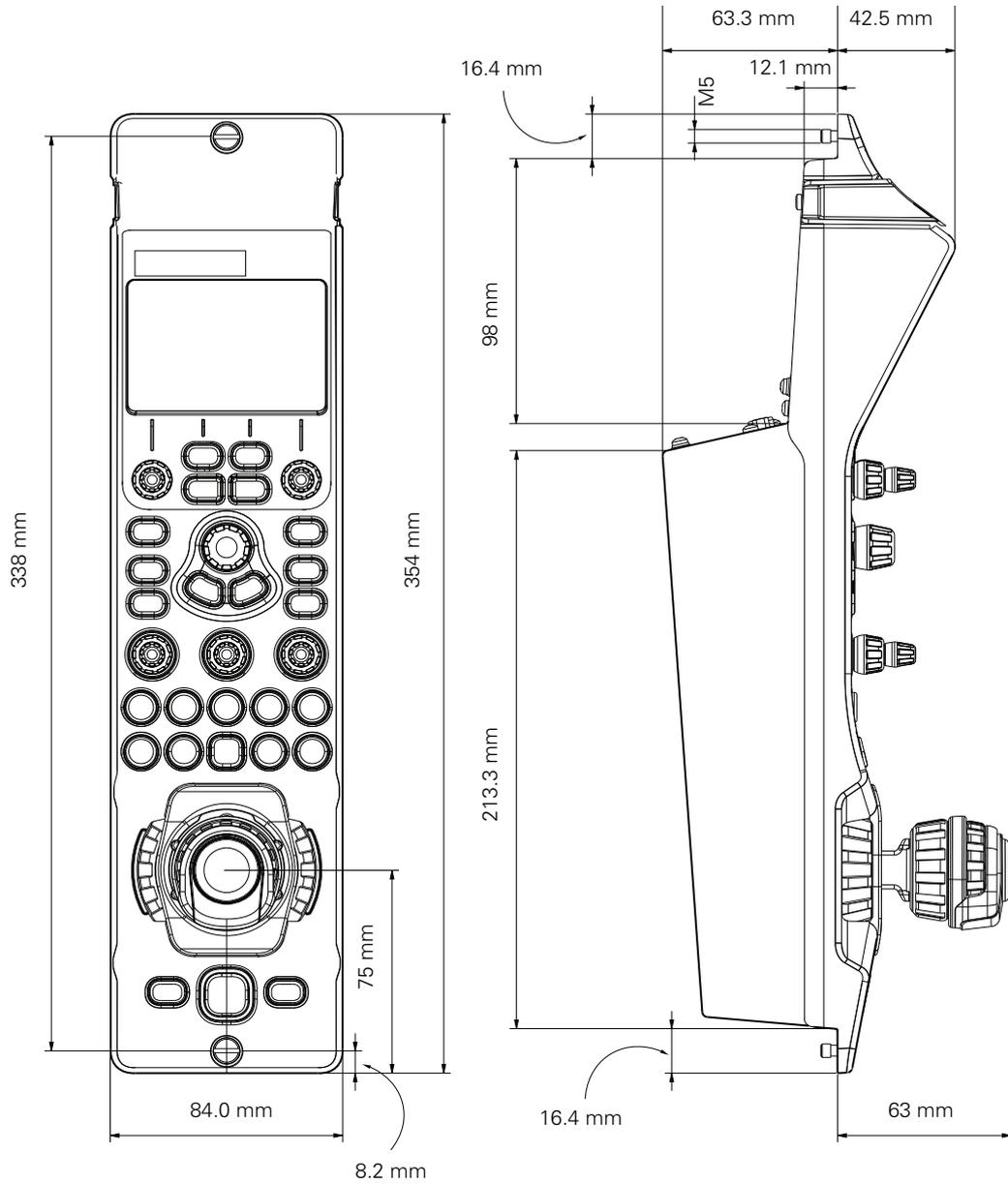
The CGP 500 is designed to be mounted into a desk surface. Make sure that the unit is mounted according to your local safety and building regulations and that it is sufficiently ventilated. Leave enough room below the unit to allow cables to run freely.



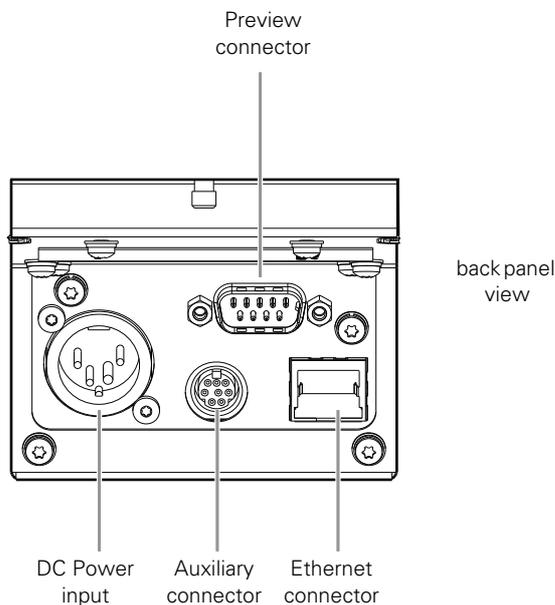
Note

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.

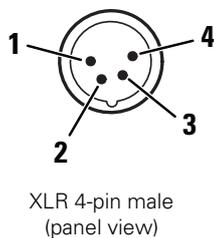
7.2.3 Dimensions



7.2.4 Connectors



DC Power In (XLR 4) connector



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

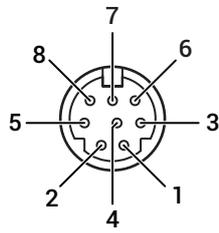
Input working voltage is between 10.5 - 17 VDC with $P_{max} < 10$ W.



Caution

The input voltage must not exceed +20 VDC.

Auxiliary connector

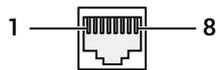


8-pin female Mini din
(panel view)

Pin	Description
1	Tx 1 (RS-232/RS-422)
2	Tx 2 (RS-232/RS-422)
3	Rx 1 (RS-232/RS-422)
4	Rx 2 (RS-232/RS-422)
5	GND
6	+12 VDC input (nominal)
7	Spare 1 (analog input) (0-4 V)
8	Spare 3 (analog output) (0-4 V)

Manufacturer code:
Kycon KMDGX-8S-BS
mating connector:
Kycon KMDLAX-8p

Ethernet (PoE) connector



8-pin standard
RJ-45 ethernet
connector (panel view)

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-

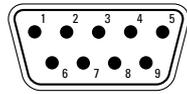
Ethernet 10Base-T, 100Base-TX
compliant with IEEE-802.3af (802.3at
type 1 "PoE")



Note

Use only shielded (STP) network cables to connect the CGP 500 to ensure proper operation.

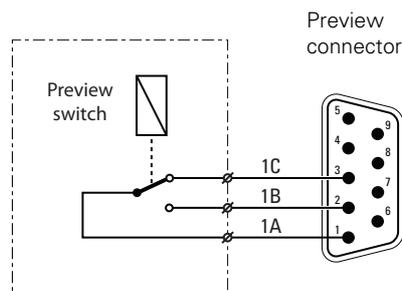
Preview connector



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 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 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.

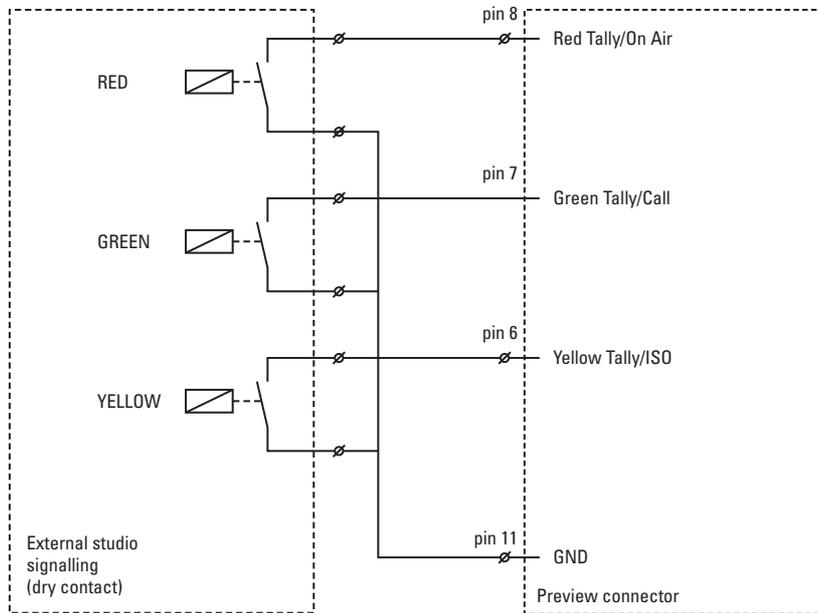


Note

Before using studio signalling on the CGP, 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 with dry contacts:

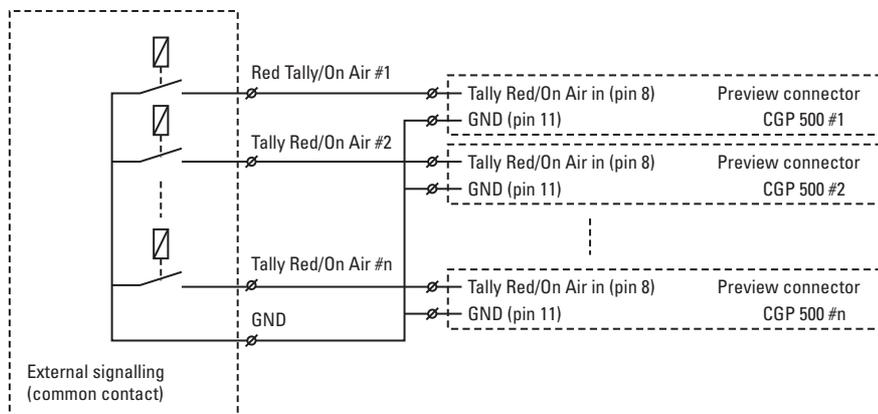


If a contact is closed, the corresponding function is Active or Inactive, depending on the selections in the Install section of the the CGP Setup menu:

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

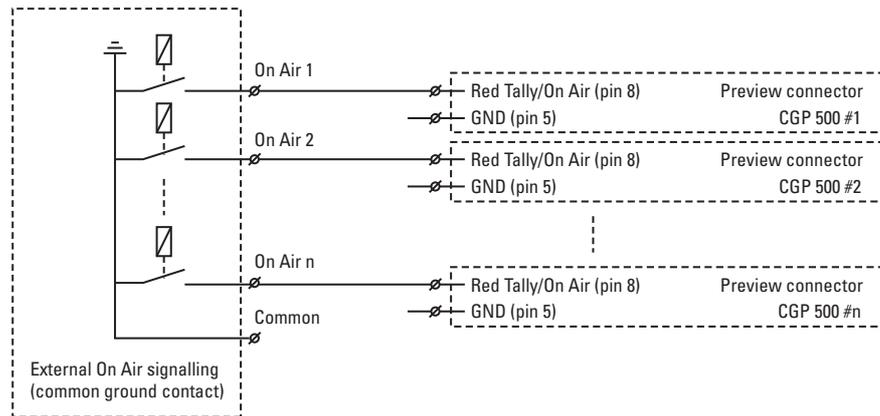
This is an example of an On Air signalling with multiple CGPs using a common contact.



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).



