

# Vinten

## VRC System



## User Guide

Part No. V4063-0010  
V4063-0013  
V4063-0014  
V4063-0015

[www.vinten.com](http://www.vinten.com)

EN

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Original Instructions: English

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## Important Safety Information

**Important information on the safe installation and operation of this product. Read this information before operating the product. For your personal safety, read these instructions. Do not operate the product if you do not understand how to use it safely. Save these instructions for future reference.**

### Warning Symbols Used in these Instructions

Safety cautions are included in these instructions. These safety instructions must be followed to avoid possible personal injury and avoid possible damage to the product.



#### **WARNING!**

Where there is a risk of personal injury or injury to others, comments appear supported by the warning triangle symbol.

Where there is a risk of damage to the product, associated equipment, process or surroundings, comments appear supported by the word **'CAUTION'**.

### Intended Use

The VRC system is a software application designed to be installed and configured on HD-VRC and  $\mu$ VRC computer controllers. It is designed to control compatible robotic camera equipment and accessories. Camera operators can remotely control movements of axes and other functions.

The VRC system is designed for use in TV studios and other applications including houses of worship, conference facilities and auditoriums, in one or across several locations.

### Safety when Working with Robotic Equipment

In normal operation remote-controlled equipment can move suddenly and without warning. Since audible warnings are not suitable for use within the studio environment, it is recommended that only trained personnel be allowed to work in the active areas where remote controlled robotic equipment is located.

The safe operating zone is a minimum of 1 m (3 ft).

### Safety Notes for Operators

Operators must familiarise themselves with the working footprint of the robotic equipment, including all installed payload items (lens, zoom and focus controls, viewfinder, prompter, etc.) to prevent inadvertent collisions or injury to personnel.

If personnel are too close to robotic equipment that is about to move, the operator should prevent the motion from starting or stop the motion if it has started.

We strongly recommend that the operator verifies visually that the active area is clear of hazards and personnel, both before and during remote operation.

# About this User Guide

This user guide covers the configuration and operation of the VRC system application.

In this user guide, the following symbols are used to indicate useful or important information:



**NOTE:** Gives additional important information about the product.



**TIP:** Gives extra advice and ways to perform a particular step or procedure.

## Product Variants

The VRC system application can be installed and used on either the  $\mu$ VRC or HD-VRC controller computers. This guide covers all aspects and functions of the VRC system application, from basic  $\mu$ VRC to complex HD-VRC configurations.

In this user guide, the following symbols are used to indicate information of particular or specific interest to a product variant:

	$\mu$ VRC
	HD-VRC

## Additional Information



For more information about connecting up a VRC system and using the joystick panels, refer to:

- **$\mu$ VRC Robotic Control System User Guide, part no. V4063-4981**
- **HD-VRC Robotic Control System User Guide, part no. V4063-4982**

## License Options

To set up and run a robotic camera system using the VRC application, at least one license must be applied. Any licences must be registered by visiting:

<http://www.vinten.com/en/software-registration>

Follow the instructions on the web page to complete your registration. When a license is registered, a license key is issued. The license key must be applied in the License Management window to activate the new features. For more information, see **About Screen and License Management** on page 46.

Upgrade licenses are available for purchase to expand the system or functions:

<b>µVRC Plus Four</b>	<b>V4063-8001</b>
	✓ Up to eight Vantage heads can be controlled.
<b>µVRC Total Control</b>	<b>V4063-8002</b>
	✓ Any number of Vantage heads can be controlled.
<b>PTZ Control</b>	<b>V4063-8003</b>
	✓ Control a single PTZ camera (Sony or Panasonic).
<b>ICE/Fusion</b>	<b>V4063-8004</b>
	✓ Adds control of Vinten ICE and Fusion robotics.
<b>Hexagon</b>	<b>V4063-8005</b>
	✓ Adds control of Vinten Hexagon robotics.
<b>CCU Control (broadcast cameras)</b>	<b>V4063-8006</b>
	✓ Add paint/shading control for a single broadcast camera (Sony).
<b>Automation Interface</b>	<b>V4063-8007</b>
	✓ Allows a third party control system to integrate with the µVRC.
<b>Distributed network control, database replication and backup</b>	<b>V4063-8008</b>
	✓ Allows multiple µVRC to share control. Also allows interaction with HD-VRCs.



Adds support for an external video capture interface to allow shots to display thumbnails from live video.



New upgrade licenses with additional features and functions may be added at any time in the future.

## Starting the VRC Application

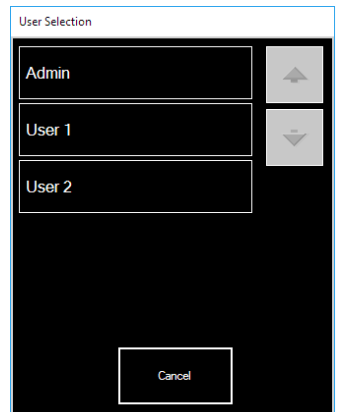
1. When the VRC computer controller has booted up, double tap on the **Fusion Client** icon.



2. The VRC application starts up.



3. If only one user-name is set up on the system with no password set, the VRC automatically logs in.
4. If multiple user-names have already been set up, select the appropriate name in the User Selection window.



5. Enter the password, if one has been set. The on-screen keyboard can be used to enter information throughout the VRC application.



When the VRC system has been powered up and the application has started, you can begin to configure and control the connected robotic cameras. Basic configuration is described in this chapter to get you up and running quickly.

If any addition licenses have been purchased, they should be applied to the VRC system during set up. For more information see **About Screen and License Management** on page 46.



If you are unfamiliar with the VRC hardware interface, for more information refer to:

- **μVRC Robotic Control System User Guide, part no. V4063-4981**
- **HD-VRC Robotic Control System User Guide, part no. V4063-4982**



To further set up and refine the VRC system, see **Configuration Management** on page 40.



# Adding Robotic Camera Units to the System

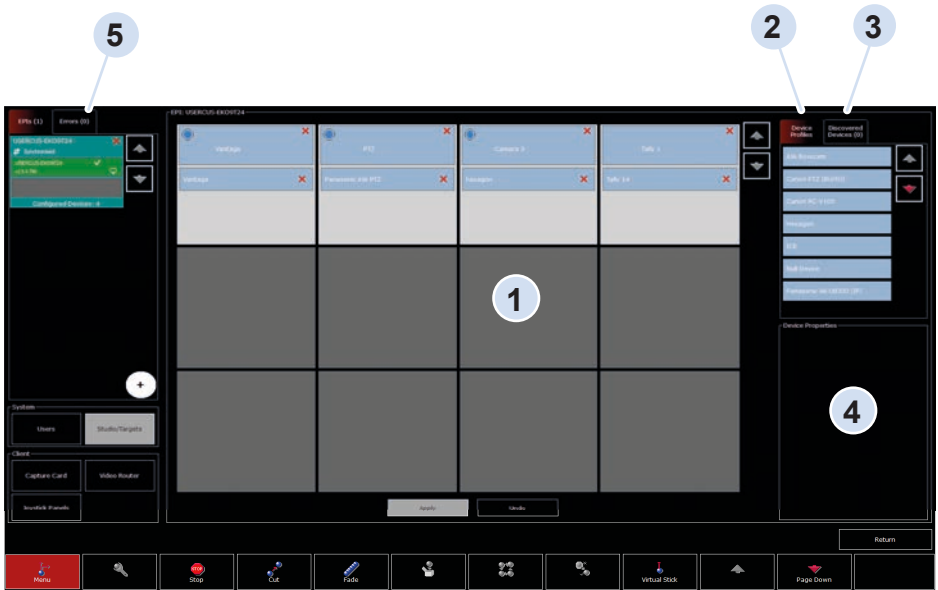
## Configuration Management Tool

The Configuration Management Tool allows you to add any connected hardware to the VRC system. You can build each individual robotic camera unit by adding the hardware components (robotic pedestal, height drive, head, camera, lens, etc) fitted.



The Configuration Management Tool has built-in intelligence to identify compatible and incompatible hardware components being added to a robotic camera unit. Third party camera lens control (zoom/focus/iris) may have limited functionality on some models.

From the main VRC workspace tap the **Menu > Configuration Management** buttons to open the Configuration Management Tool window.



- 1 **Device Storage Grid** - Added robotic heads, cameras and other components
- 2 **Device Profiles Tab\*** - Cells for storing robotic camera units
- 3 **Discovered Devices Tab** - Connected devices automatically detected
- 4 **Device Properties Panel** - Configuration section for robotic cameras and hardware
- 5 **Errors Tab** - Lists any issues detected with the current configuration

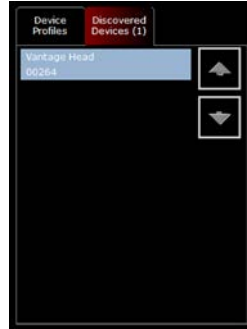


\*Products available for selection appear in white text. Products in black text require an additional license to be purchased and applied. For more information see **License Options** on page 4.

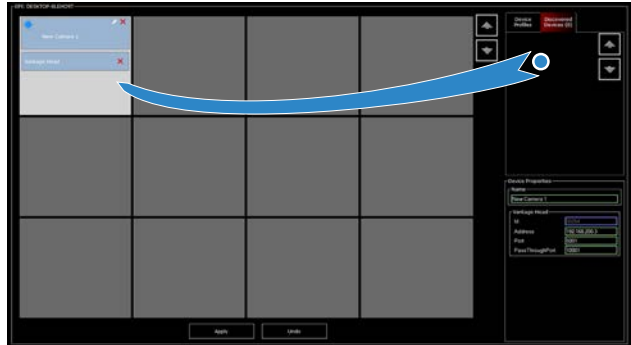
## Adding a Vantage Head

Vantage heads can be easily added to the VRC system. Any connected and powered vantage heads are detected automatically.

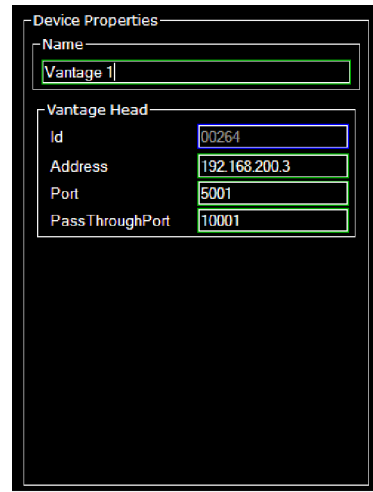
1. Click on the **Discovered Devices** tab. Available Vantage heads are listed for selection.



2. Drag the selected device into an empty cell on the Device Storage Grid.



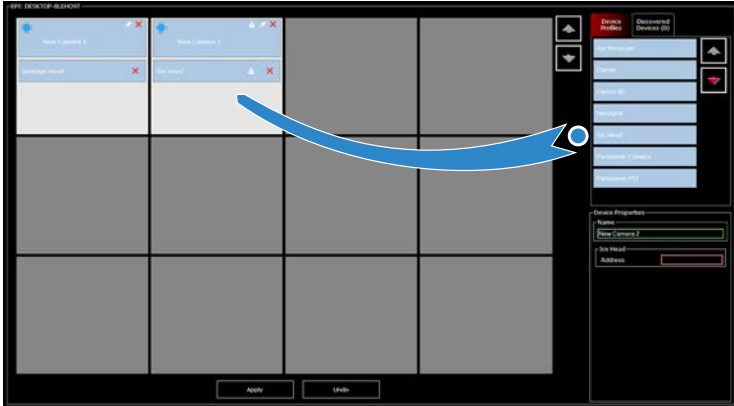
3. In the Device Properties panel, enter an appropriate name for the head. This name will be used throughout the VRC interface for configuring and operating the head.



The Vantage head or any device can be renamed at any time by returning to the Configuration Management Tool and changing it in the Device Properties panel.

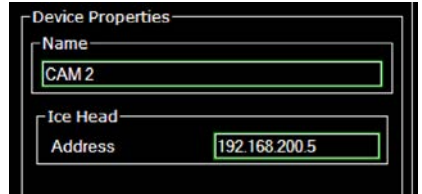
## Adding an Ice Head or PTZ Camera

1. Select the appropriate Ice head or PTZ camera from the Device Profiles Tab list.
2. Drag the selected device into an empty cell on the Device Storage Grid.

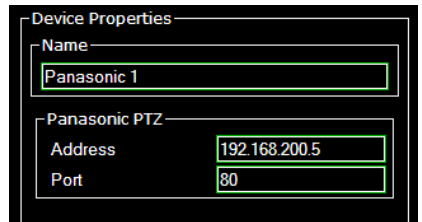


3. In the Device Properties panel, enter an appropriate name for the head or PTZ camera.
4. Enter the additional required configuration information:

(a) Enter the network IP address for the Ice head.



(b) Enter the IP address and port number for the PTZ head.



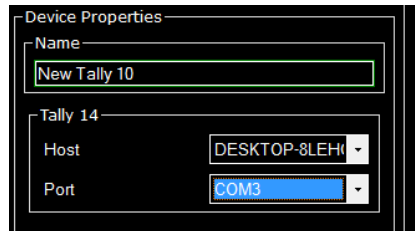
Depending on the connected device, additional configuration fields may need to be completed. Refer to the documentation supplied with the product for more information.

## Adding Other Devices

Other compatible connected devices can be added and configured in the VRC system.

### Adding a Tally Device

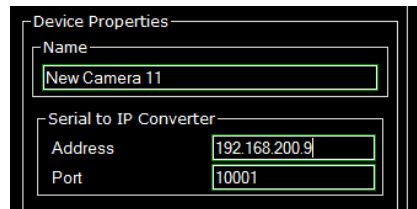
1. Select the appropriate tally device from the Device Profiles Tab list.
2. Drag the selected device into an empty cell on the Device Storage Grid.
3. In the Device Properties panel, enter an appropriate name for the tally device.
4. Select the VRC controller the tally device is connected to from the **Host** drop-down menu.
5. Select the serial port (COM1, 2, etc) the tally device is connected to from the **Port** drop-down menu.



### Adding a Serial to IP Converter Device

Any serial camera devices must be added and configured into the system using a serial to IP converter.

1. Select the serial to IP converter device from the Device Profiles Tab list.
2. Drag the selected device into an empty cell on the Device Storage Grid.
3. In the Device Properties panel, enter an appropriate name for the converter.
4. Enter the IP address and port number for the converter.

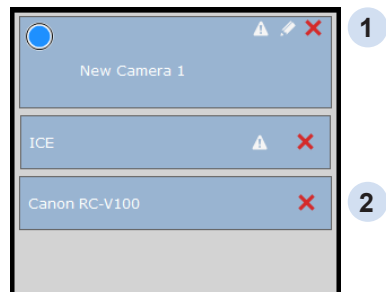


Depending on the connected device, additional configuration fields may need to be completed. Refer to the documentation supplied with the product for more information.

## Removing Devices

Devices (or component devices such as cameras and lenses) can be removed from the VRC system at any time.

1. Tap the red X on the camera device to remove the whole camera and components from the VRC system.
2. Tap the red X on a component device to delete the component device from the main camera device.

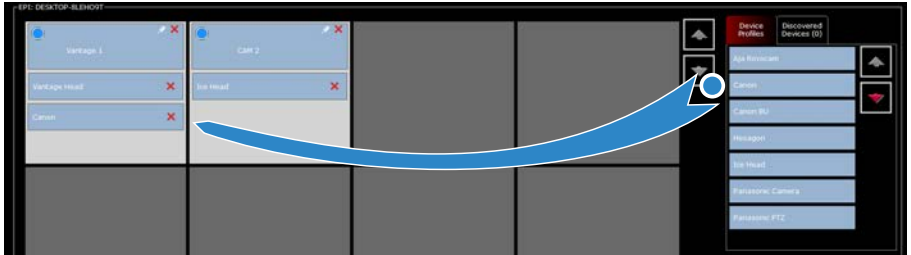


If a camera device is removed, all stored shots will be permanently disassociated with the camera.

## Adding Cameras

Compatible cameras and lenses connected and fitted to robotic heads such as the Vantage or Ice heads can be added into the VRC system. This allows automated camera functions (zoom, focus, CCU) to be controlled by the VRC application.

1. Select the appropriate device (camera, lens) connected and fitted to the camera from the Device Profiles Tab list.
2. Drag the device into the grid cell of the robotic head (example shows a Canon camera added to a Vantage head).



## Applying Configuration Settings

When devices have been added and configured on to the VRC system, or changes have been made to the current system setup, the settings must be applied

1. Click the **Apply** button.

2. Click the **Return** Button.



3. Click the Ok button when prompted. The VRC application will restart to apply any changes made to the setup.

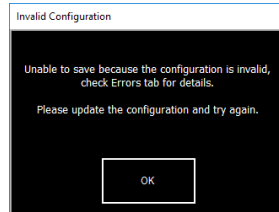
When the VRC application restarts, added cameras are available for selection from the Camera selection and Status Bar.

## Configuration Errors

When devices have not been configured correctly, or configuration has not been fully completed (all required device details not entered), the VRC application will not allow the changes to be applied.

An **Invalid Configuration** window opens, prompting you to find any issues and update the configuration correctly.

1. Check the **Errors** tab to see details of invalid or incomplete configuration.

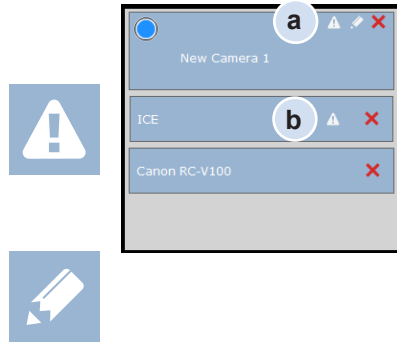


2. Camera devices in the grid indicate errors:

(a) A warning symbol is displayed on the main camera device indicating an issue with either the main device or a connected component.

(b) A warning symbol is displayed on the component device with the issue.

3. When configuration has been completed, a pencil symbol is displayed indicating that changes have been made but must be applied to take effect.



Resolve any errors (such as a missing protocol, missing IP address, etc.) before attempting to apply changes again. Configuration must be completed for the camera and components to fully function.

# VRC Controller and Vantage Configuration

When setting up a VRC system, it may be necessary to configure the network settings for connected controllers and Vantage heads. Further configuration such as enabling VR data and upgrading firmware on a Vantage head can also be performed.

## Configuring a VRC Controller IP Address

The network IP address of a connected  $\mu$ VRC controller computer can be changed to suit the requirements of the VRC system installation, if the standard DHCP configuration is not compatible with your network. The IP address can be manually configured in Windows 10.

The IP address of the  $\mu$ VRC controller should normally be on the same network as the robotic camera devices. This means that the first three sections of the IP address should be the same, for example:

**192.168.1.XXX**

XXX is a unique address for the  $\mu$ VRC controller and each robotic device.



Network gateways and bridging subnets are not within the scope of this user guide. Refer to you IT department for configuration assistance.

The IP address is manually configured in Windows 10:

1. In the Control Panel window, tap the link titled **View network status** and tasks under the **Network and Internet** heading.
2. Tap the link on the left of the window labelled **Change adapter settings**.
3. There may be more than one Internet connection listed in this window. If this is the case you will need to determine which one is your connection to the Internet. When this has been established, tap and hold (or right click) on the network adapter and select **Properties** to open up the Properties window of this Internet connection.
4. Tap on **Internet Protocol Version 4 (TCP/IPv4)** in the list. Then choose the option under that titled **Properties**.
5. Make a note of any current network settings in case these need to be restored in the future.
6. Tap to select **Use the following IP address:**. Enter a new IP address, and the appropriate Subnet mask and Defaults gateway in the fields provided.
7. Enter the DNS server addresses if applicable.
8. Tap **Ok** to save the new settings.

## Using the Advanced Configuration Tool Utility

The Advanced Configuration Tool utility is used to further configure connected devices for:

- Specific network configurations
- Enabling VR
- Updating the firmware

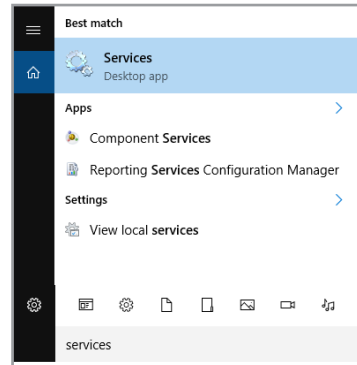


**IMPORTANT!** Close the VRC application and disable the VRC EPI server before launching the Advanced Configuration Tool.

## Stopping the VRC EPI Server

The VRC EPI server must be temporarily disabled to allow the Advanced Configuration Tool to detect Vantage heads on the network.

1. In the Windows menu, search for “**services**” and select to open.



2. In the Services window, scroll down the list of applications to find “**Vrc EPI Server**”.

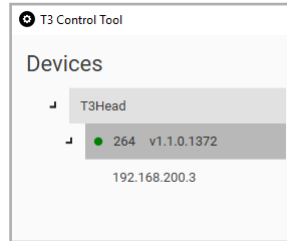
3. Tap and hold on the line, and select **Stop** when the menu appears.

Virtual Disk	Provides m...	Manual	Local
Volume Shadow Copy	Manages an...	Manual	Local
Vrc EPI Server	Fusion Vrc E...	Running Automatic	Local
Vrcs Automation	Fusion Vrcs ...	Start	Local
Vrcs DBMaintenance	Fusion Vrcs ...	Stop	Local
Vrcs Panel Hosting	Fusion Vrcs ...	Pause	Local
Vrcs Replication	Fusion Vrcs ...	Resume	Local



## Launching the Advanced Configuration Tool

1. Double click the desktop short cut to launch the Advanced Configuration Tool.
2. Any Vantage heads powered and connected to the network appear on the left side of the window under the **Devices** panel.
3. Select the required head by tapping on the IP address. The selected head is highlighted with a green dot.

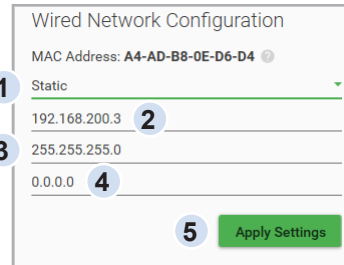


## Network Configuration

The Vantage head supports two IP addressing modes - DHCP and Static addressing. The default mode is DHCP and if the head is connected to a network with a DHCP server, an IP address will be automatically assigned to the head.

To configure a static IP address:

1. In the Wired Network Configuration panel, select **Static** from the drop-down menu.
2. Enter the required **IP Address** in the first field.
3. Enter the required **Sub Net Mask** in the next field.
4. If required, enter a **Gateway Address**.
5. Click the **Apply Settings** button to save the IP settings. The Vantage head automatically reboots.



## VR Configuration

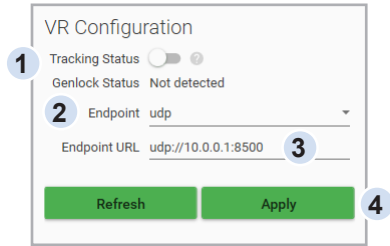
The Advanced Configuration Tool is used to configure the Vantage Head for VR.



The vantage head must have an active genlock signal connected.

To configure VR on the head:

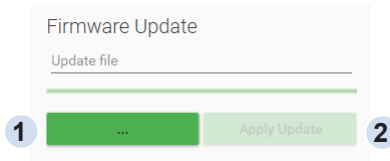
1. In the VR Configuration panel, move the **Tracking Status** slider to **On**.
2. Select **udp** from the **Endpoint** drop-down menu.
3. Enter the **URL** of the rendering PC in the **Endpoint URL** field.
4. Click the **Apply** button to save the settings.



## Firmware Update

The Advanced Configuration Tool is used to update the firmware on the Vantage head.

1. In the Firmware Update panel, click to select the left button to browse to the required **update.bin** file.
2. When the file is selected, click the **Apply Update** button to perform the update.

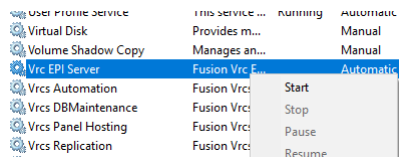


The update takes approximately 4 minutes to complete.

## Restarting the VRC EPI Server

When configuration has been completed with the Advanced Configuration Tool, the VRC EPI server must be restarted before the VRC application can be used again.

1. In the Services window, tap and hold on the **"Vrc EPI Server"** line.
2. Select **Start** when the menu appears.





## Using the Touch-Screen Display Interface

The VRC touch-screen display is the primary interface with the system, enabling you to select cameras and setup, store, manage and select shots for shows.

The main VRC workspace window provides instant access to functions required to operate the remote camera control system.



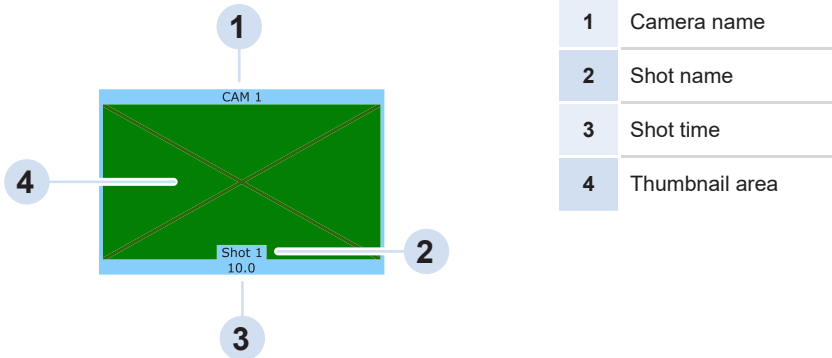
The window comprises:

- 1 **Stored Shot Grid** - This grid of cells is used to display the shots that have been created and stored for each camera in the current show, or the shots stored for the currently selected camera depending on the setting of the Per Camera configuration option.
- 2 **Camera selection and Status Bar** - The robotic cameras can be selected from this workspace bar or the control panel.
- 3 **Toolbar** containing function and menu buttons.
- 4 **Notifications Panel** - Displays information about the VRC system (such as errors).

## Stored Shot Grid

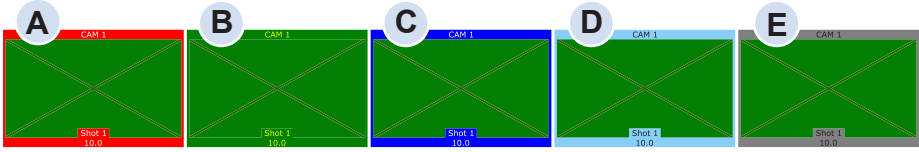
The grid size (number of shots that are visible on a single page) can be selected using the Grid Size option on the Configuration Screen – see **Grid Display Options** on page 36. Depending on the number of shots stored in the current show and the grid size selected, the shots may span several pages.

A shot stored in the grid is displayed with the shot name (assigned when stored), the camera relating to the shot and the current assigned time (for fade moves). If the VRC system has the optional video capture functions available, a still image can be displayed for the shot in the thumbnail area (HD-VRC only).



## Shot Status Colour codes

The frames of the shots stored in the grid are colour coded to indicate the shot status.



	Shot Colour	Description
A	Red	Indicates that the camera is moving (via Cut or Fade) to the shot.
B	Green	Indicates that the shot is cued and the camera will move to this shot when Cut or Fade is selected.
C	Dark Blue	Indicates that the camera is exactly on shot as stored in the show file.
D	Light Blue	Indicates that the camera has been trimmed off the shot stored in the show file.
F	Grey	Indicates shots that are available for selection.

## Camera Selection Status Bar

Available robotic cameras can be selected from this bar. The colour of the camera button indicates the current status of the camera.



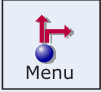


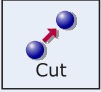


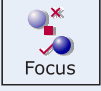

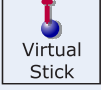
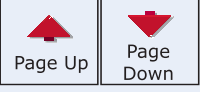

	Frame Colour	Description
A	Green	Camera is currently selected and controlled by the control panel.
B	White	Camera is available for immediate selection and control.
C	Black	Camera is offline and unavailable.
D	Blue	Camera is currently under the control of another networked control panel.
E	Grey	Camera needs to be enabled. Tap the <b>Opts</b> button and select <b>Enable</b> from the Device Control field.
F	Grey hash	Camera is not selectable, because of incompatibility with the local VRC controller or license restrictions.



When selected, any camera can be controlled from the joystick control panel, or using the virtual joystick and controls on the touch screen.

## Function and Menu Buttons

The toolbar containing the function and menu buttons is displayed at the bottom of the workspace. The buttons and menus enable you to create and manage shots and shows, and configure the VRC system.

Button	Function	Description
 Menu	<b>Menu</b>	Displays the toolbar menu enabling you to: manage shows, configure the system and preferences.
 Edit	<b>Edit</b>	Displays the edit menu enabling you to: rename a shot, delete a shot, edit the shot time, replace a stored shot with a new one and move shots to different positions in the grid.
 Stop	<b>Stop</b>	Stops all camera movement during a cut or fade operation.
 Cut	<b>Cut</b>	Cuts from the current shot(s) to the selected shot(s) as fast as possible. This function can be latched to immediately cut to a shot when it is selected. Cut is not suitable for on-air moves.
 Fade	<b>Fade</b>	Fades from the current shot to the selected shot in the time duration stored in the shot. This function can be latched to immediately fade to a shot when it is selected.
 Store	<b>Store</b>	Stores the shot on the currently selected camera unit into the selected cell in the grid. A show must be opened to store shots.
 Focus	<b>Focus</b>	Zooms the lens of the current on-shot camera unit (thumbnail coloured dark blue) all the way in tight and displays the Focus menu.
 Sequence	<b>Sequence</b>	Available for Vinten Hexagon track and other robotic devices when a license upgrade has been purchased and applied.
 Virtual Stick	<b>Virtual Stick</b>	Displays the Virtual Joystick window, providing a method of controlling cameras from the touch screen when the control panel is not available.
 Page Up Page Down	<b>Page Up/ Down</b>	Enables you to scroll up and down through pages of multiple stored shots.
 Opts	<b>Options</b>	Displays the Options menu which enables you to: Enable cameras; turn X4 mode on/off; select CCU menus for compatible cameras and device configuration. Options are for the currently selected device and not visible if no camera is selected.

## Toolbar Menu

Tap **Menu** to display the toolbar menu.

Menu Option	Description
<b>Show Management</b>	Displays the Show Management functions, enabling you to create, load, list and delete shows - see <b>Show management</b> on page 30.
<b>Configuration Management</b>	Displays the Configuration Management screen, enabling you to configure the system, manage users and licenses - see <b>Configuration Management</b> on page 40.
<b>User Preferences</b>	Displays the User Preferences screen, enabling you to configure: editing grid display options, joystick settings, etc. See - <b>User Preferences</b> on page 36.
<b>Camera Inputs</b>	Displays the Camera Inputs screen, where tally and video switcher channels can be assigned to specific cameras. The order cameras appear on the Camera Selection and Status bar can also be changed. See <b>Camera Inputs Configuration</b> on page 45.
<b>About</b>	Displays the About screen with software and license information. Licenses are also updated and applied here. See <b>About Screen and License Management</b> on page 46.
<b>Exit</b>	Exits the VRC application.
<b>Return</b>	Closes the menu.

## Edit menu

Tap **Edit** to display the Edit menu. This has options that let you rename shots, modify the fade time, delete shots, re-save a shot or swap shot positions on the grid. You can also assign a shot to another camera. Tap **Return** to exit from the Edit menu. For more information – see **Managing Shots** on page 32.

## Stop Button

The stop button is used to halt the movement of a camera during a fade or cut to a stored shot.

There are two stopping options selectable in the User Preferences screen:

- The standard stop option provides a 'gentle' synchronised stop which halts robotic camera movement in approximately two seconds - recommended for on-air use.
- The other stop option provides a 'fast' abrupt stop that is not synchronised and may produce a small amount of instability on the camera, and therefore should not be used on air. See - **Camera Control** on page 38.



After using **Stop** to halt a robotic transition, you can:

- Complete that move by selecting the shot again and tapping **Fade** or **Cut**.
- Make another move, by selecting the required shot and tapping **Fade** or **Cut**.



## Cut and Fade Buttons

After a shot is selected on the touch-screen, the Cut and Fade buttons become available to move the camera from the current shot to the selected shot.

### Latching

If latched Cut or Fade is selected (tap **Cut** or **Fade** before selecting a shot), the camera will automatically move to a new shot as soon as it is selected on the touch screen, with no need to tap the buttons.

### Store Button

Tapping the Store button will save the current position of the selected camera as a shot in the current show for future use. You can select where the shot is stored in the stored shot grid.



A show must be created and opened to store shots. For more information see **Show management** on page 30.

### Focus Button

When you are on shot (stored shot coloured dark blue), tapping the Focus button will zoom the lens all the way in tight. You can then:

1. Use pan and tilt, if necessary, to frame the person or object that you want to set focus on.
2. Adjust the focus.
3. Select one of the Focus Menu options described below.

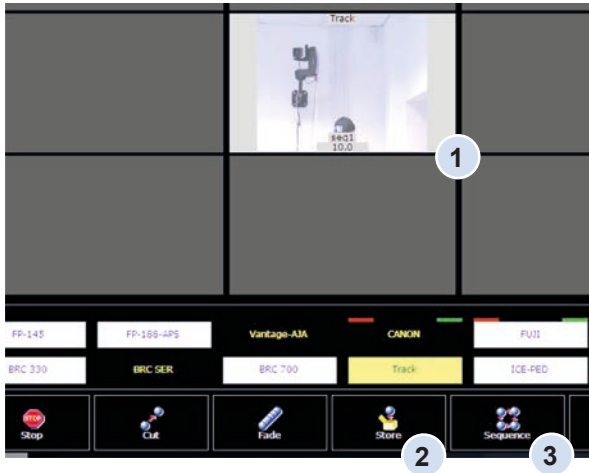
Focus Menu Option	Description
<b>Keep Camera</b>	After the focus has been adjusted, tap <b>Keep Camera</b> to return the camera to the shot's original pan, tilt and zoom settings and keep the adjusted focus setting. The shot stored in the show database is not updated, so the next time you recall the shot it will have the original focus, not the adjusted focus.
<b>Keep Shot</b>	After the focus has been adjusted, tap <b>Keep Shot</b> to return the camera to the shot's original pan, tilt and zoom settings, keep the adjusted focus setting and store the adjusted focus in the show database. The next time you recall the shot it will have the adjusted focus.
<b>Cancel</b>	Tap <b>Cancel</b> to abandon the adjusted focus setting and return the camera to the shot's original pan, tilt, zoom and focus settings.
<b>Return</b>	Tap <b>Return</b> to return to the workspace leaving the lens zoomed in tight and with pan, tilt and focus as you left them.

## Sequence Button

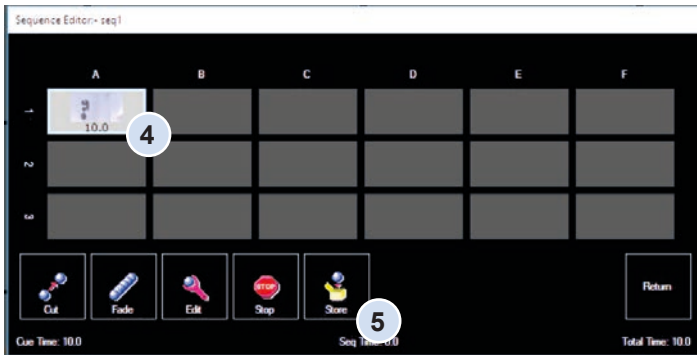
If an optional license has been purchased and applied, Hexagon track and other robotic devices can be set up to play a series of shots in sequence. Sequences can then be stored for future recall during shows. In addition, a sequence of shots can be configured to loop, playing the sequence a specific number of times.

### Creating a sequence

1. Drive the robotic device to the intended starting position.
2. Select a position on the grid (1).
3. Click Store (2).

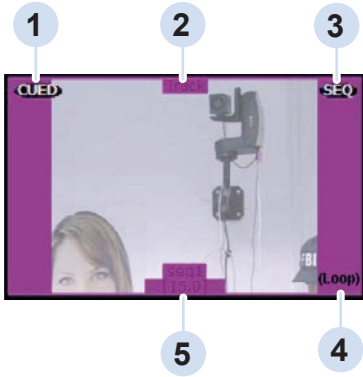


4. A new window opens. Input a name for the sequence and tap **Enter**.
5. In the next window enter the time (how long the movement will take) and tap **Enter**. The sequence is created.
6. Tap the **Sequence** button (3) to open the sequence editor window.



7. Tap on the key frame (4) created earlier.
8. Drive the robotic device to the next required position in the sequence.
9. Tap **Store** (5), a window pops up, input the movement time (up to 120 seconds), tap **Enter**.
10. Repeat this process for up to a maximum of 18 key frames.

### Sequence Thumbnail Features



1	Status
2	Camera name
3	Sequence
4	Loop mode
5	Sequence name and time

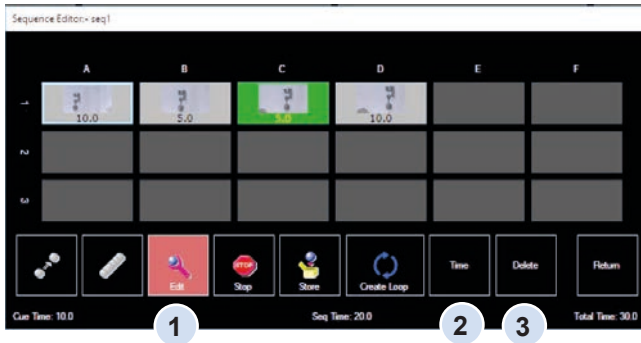
### Sequence Status Colour Codes

The following colours are used on the sequence thumbnails to represent the current status.

Green	Selected sequence
Red	Playing sequence
Dark blue	On shot (end of sequence)
Light blue	Off shot
Purple	Sequence cued

## Editing a Sequence

1. In the sequence editor tap the **Edit** (1) button.
2. Select the key frame to be edited. This adds the **Time** (2) and **Delete** (3) buttons to the sequence editor.
3. Tap the **Time** button to edit the movement time.
4. Tap the **Delete** button to remove the key frame, all key frames after the deleted frame will move down in order automatically.



A key frame cannot be entered mid-sequence.

## Creating a Loop

A loop can be created to repeat a sequence a defined number of times.

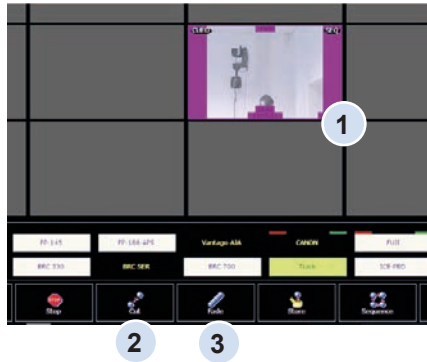
1. From the Sequence Editor window tap the **Loop** button.
2. The ENTER FRAME TIME window opens, set the time (from the last frame in the sequence to the first).
3. Tap **Enter** to close.
4. The ENTER LOOP COUNT window opens. Set the required number of loops and tap **Enter** to exit.



The loop key frame displays in the Editor Window and reduces the maximum number of key frames available to 17.

## Cueing and Playing a Sequence

1. Select the desired sequence from the grid (1) and tap **Cut** (2), the robotic device will move to the first key frame in the sequence. The sequence will turn purple to show it is cued ready to play.
2. Tap **Fade** (3), the robotic device will follow the programmed sequence until it gets to the final position, the sequence in the grid turns dark blue to signify it is on shot.
3. If a loop has been set then the robotic device will perform the set number of loops.



## Virtual Joystick Button

The Virtual Joystick Window provides a convenient method of manually controlling robotic cameras from the touch screen when a control panel is not available. Tap **Virtual Stick** to open.

Dragging your finger across or along any of the controls on the touch screen will operate that control in a similar way to the control panel.

- The direction you drag your finger controls the direction of movement
- The distance you drag your finger controls the speed of movement
- Removing your finger from the touch screen stops the movement

Tap **Virtual Stick** again to close.



X/Y and Height controls are not available on this version of the  $\mu$ VRC.

## Options Menu

The Options Menu contains operation and configuration options for the currently selected camera, allowing you to:

- Enable robotic cameras
- Turn X4 mode on and off
- Enter the CCU control screens
- Enter the Device Configuration screen

### X4

The default zoom mode (zoom proportional) ensures that the speed of the pan and tilt movements are proportional to the zoom angle of the camera lens. This means that pan and tilt move slowly when you are zoomed in and quickly when you are zoomed out.

If X4 mode is switched on (zoom proportional mode is off), the pan and tilt movements are more sensitive when zoomed in.

### CCU

Tapping the CCU button opens up the camera functions and CCU control screens, where functions and settings on a compatible connected camera can be used and adjusted. For more information see - **CCU Interfaces** on page 66.

### Device Configuration

Tapping the button opens the Device Configuration screen. Settings such as axis limits can be adjusted on the currently selected camera. For more information see - **Device Configuration** on page 47.

Tap **Return** in the Options menu to close the menu and return to the main screen.

## Notifications Panel

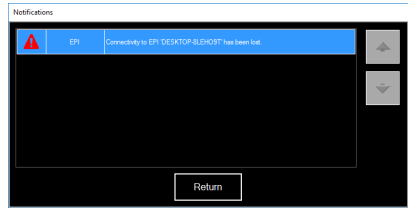
The notifications panel displays VRC system information useful to the operator. The operator is alerted to issues and errors, such as devices going offline.

1. Notifications appear as symbols in the Notifications panel.



2. Tapping on the symbols opens the Notifications window. Notifications appear listed in the window.

3. Tap the **Return** button to exit the Notifications window.



# Working with Shots and Shows

Shows are created by storing collections of camera position shots from one or more cameras. The term 'shows' is historic, and stems from camera control systems originally being used purely for the creation of TV shows. The term has been retained for consistency with existing users.

## Show management

A show is a collection of stored shots from one or more cameras saved in a file. To store shots in the grid display, either a new show must be created or an existing show must be loaded.

Tap **Menu > Show Management** to display the show management buttons.

Buttons	Description
<b>Load</b>	Load a show from the grid.
<b>New</b>	Create a new show.
<b>Delete</b>	Delete an existing show.
<b>Import</b>	Import a show from a file.
<b>Export</b>	Export a show to a file.
<b>Unload</b>	Remove a show from the shot grid.
<b>Rename</b>	Rename a show.
<b>Copy</b>	Copy a show.



Only Admin users can permanently change shows – normal user's changes only last until the show is reloaded, or the software restarted.

## Loading a New Show

1. Tap to select the desired show from the grid.
2. Tap the **Load** button.
3. The workspace is displayed with the selected show.

## Creating a new show

1. Tap the **New** button.
2. Use the touch-screen keyboard to enter a name for the new show.
3. Tap **Enter** to return to the workspace, which is now ready to store shots in this new show. The new show name is displayed in the title bar of the workspace.



## Deleting a Show



There is NO undo option to recover a deleted a show, unless it has been backed up.

1. Select the desired show for deletion from the grid.
2. Tap the **Delete** button.
3. Tap **YES** to delete the show or **NO** to return without deleting.

## Importing a show

1. Tap the **Import** button.
2. Tap **Yes** to continue with the import.
3. Use the file browser to locate the desired show. Tap **Open** to complete the import.

## Exporting a show

1. Tap to select the desired show from the grid to export.
2. Tap the **Export** button.
3. Use the file browser to place the show in the desired location. Tap **Save** to complete the export.

## Unloading a show

1. Tap the **Unload** button.
2. The current show and its stored shots is removed from the grid.

## Renaming a show

1. Tap the **Rename** button.
2. Use the touch screen keyboard to enter a new name for the show.
3. Tap **Enter** to return to the workspace. The new show name is displayed in the title bar of the workspace.

## Copying a show

1. Tap to select the show to copy.
1. Tap the **Copy** button.
2. A duplicate of the show appears in the grid. The shows original name is retained, with the addition of **\_Copy** on the end.



A show must be loaded to enable shots to be stored.

## Adding Shots to a Show

Make sure that the required show is loaded.

1. Select the required camera on the touch-screen or the control panel.
2. Use the joystick and controls to move the camera into position for the shot, and then frame and focus the shot.
3. Tap **Store** on the touch screen and touch a position on the grid to store the shot.
4. Type a name for the shot into the **Shot name\*** field and tap **Enter**. The shot will be saved with the default fade time\*\* and its thumbnail displayed on the grid.
5. Repeat steps 2–5 for each required shot.



\*A shot name cannot be entered if **Require Shot Name** is turned off in the User Preferences screen. A number will be assigned to the shot instead.

\*\*A specific fade time for the shot can be entered if **Require Shot Time** is turned on in the User Preferences screen.

For more information, see **Shot Options** on page 38.

## Managing Shots

The Edit menu provides options that let you:

- Rename or delete shots
- Modify the shot fade time
- Swap shot positions on the grid

From the workspace tap to select **Edit** to reveal the edit menu.



Only the latched delete, latched time and return buttons are available from the edit menu until you select a shot on the grid.

### Latched Delete

Use the latched delete function when you want to delete multiple shots. The normal delete mode deletes a single shot and then returns you to the workspace. Latched delete keeps you in the edit menu after each deletion.

1. Tap **Latched Delete**.
2. Tap a shot and confirm the deletion.
3. Tap another shot and confirm the deletion.
4. Repeat until all of the desired shots have been deleted.
5. Tap **Latched Delete** again to exit this mode.

## Latched Time

Use the latched time function when you want to modify the time of multiple shots. The normal time mode modifies a single shot and then returns you to the workspace. Latched time keeps you in the edit menu after each shot is modified.

1. Tap **Latched Time**.
2. Tap the required shot and modify its time using the touch-screen keypad.
3. Tap another shot and modify its time.
4. Repeat until all of the desired shots have been modified.
5. Tap **Latched Time** again to exit this mode.

## Other Edit Options

Edit Menu Option	Description
<b>Name</b>	Tap on the shot in the grid you wish to edit the name of. Tap <b>Name</b> and type in the desired shot name and tap <b>Enter</b> to return to the workspace. The shot name can be a maximum of 16 characters long.
<b>Time</b>	Tap on the shot in the grid you wish to edit the time of. Tap <b>Time</b> and type in the desired shot time and tap <b>Enter</b> to return to the workspace.
<b>Delete</b>	To delete a single shot, tap the shot you want to delete from the grid display. Tap <b>Delete</b> and <b>Yes</b> to delete the shot and return to the workspace.
<b>Swap</b>	Allows you to rearrange the position of the shots in the grid by exchanging pairs of shots or exchanging a shot with an unused position. Tap the shot on the grid display that you want to move. Tap <b>Swap</b> . Tap a second shot or an unused location to swap the shots on the grid and return to the workspace.
<b>Assign Device</b>	Assigns a different camera device to the shot, or related shots. See <b>Assign Shot Device</b> below.
<b>Return</b>	Tap <b>Return</b> to go back to the workspace.

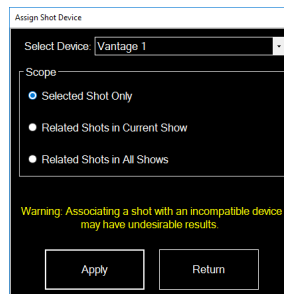
## Assign Shot Device



**WARNING!** Changes to the assignment of shots between devices can cause a risk of personal injury or product damage. Ensure the motion of the product is monitored when changes to settings are being carried out.

A stored shot, or group of related shots can be assigned to a different camera device.

1. Tapping the Assign Device button opens the Assign Shot Device window.
2. Select the camera device from the Select Device drop-down menu.
3. In the Scope panel, select whether the assignment applies to the selected shot or related shots in the show(s).
4. Tap the **Apply** button to store the new assignment.



## Cueing, Trimming and Tracking Shots

While a typical show is being aired, the VRC operator will be occupied with three primary tasks – cueing, trimming and tracking shots.

### Cueing shots

Cueing is the process of positioning the camera framing before it is used on air. It is important that the VRC operator stays ahead of the shows run-down by cueing shots as early as possible. As time permits, the operator can have two or three shots cued ahead of the run-down. The Cut, Fade and Stop function buttons on the touch screen (and control panel) are used to start and stop the movements of the robotic camera when cueing shots.

### Shot Status Colour Codes

The current shot for each camera is shown on the touch screen in a Blue box. Dark Blue if the shot is exactly as stored or light Blue if the shot has been trimmed. The VRC operator should familiarise themselves with all the colour codes associated with a shot. See - **Shot Status Colour codes** on page 20.

### Adjusting Shot Fade Times

The stored fade time can always be modified on air (in real-time) using the time slider on the virtual joystick.



The maximum fade time is 120 seconds.

### Latched Cut or Fade Function

The cut or fade function can be latched to speed up system operation. Latching immediately moves between the current and selected shots as soon as the new shot is selected. You do not need to explicitly touch cut or fade to start the transition.



The fade function is not available when latched cut is enabled.

The cut function is not available when latched fade is enabled.

1. Ensure that no shots are currently cued (no shot thumbnails have a green background).
2. Tap the desired function for latching (**Cut** or **Fade**) on the touch screen – the button turns red to denote latched mode.
3. Check that the operating area around the cameras is clear.
4. Select a shot on the touch screen. The thumbnail immediately turns red and the camera moves to the selected shot.
5. Select other shots as required. In each case the thumbnail immediately turns red and the camera moves to the selected shot.
6. Tap **Cut** or **Fade** again on the touch-screen to return to the normal control mode (Cut and Fade available).

## Fading or Cutting multiple shots

The number of shots that can be selected at one time is controlled by the Single Selection mode in the User Preferences screen. See - **Shot Preferences** on page 39.

- If Single Selection mode is **ON** (button is blue), you can only select one shot on one camera at a time. If you select another shot, the previously selected shot is automatically deselected.
- If Single Selection mode is **OFF**, you can select a shot on more than one camera. When you then select fade or cut, all of the cameras will start moving at the same time.

## Trimming shots

After a camera arrives “on shot” and before it is on air, the VRC operator will want to take control at the joystick panel and check the framing and focus of the shot and trim the shot as needed. This lets the operator correct for things like the subject not being exactly in position.

The focus function, available from the touch-screen can be used for this purpose. See - **Focus Button** on page 23.

After trimming a shot the stored shot cell will turn light Blue. The operator can replace the existing shot with the trimmed shot by storing it (tap store and then touch the shot), ensuring the shot is correctly framed for the rest of the current show. The stored shot cell will then turn dark blue.

## Real Time Tracking

You can use the joystick panel to follow live movement.

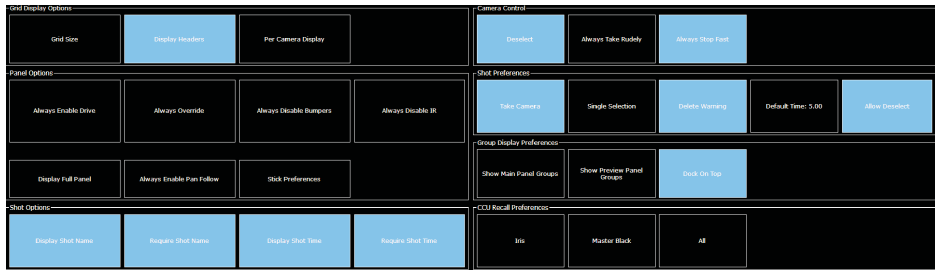
Select the required camera at the control panel and track the shot as needed.

The VRC can be set up and configured to suit the preferences of the user. Parameters relating to the user interface and control of attached cameras can be easily adjusted.

## User Preferences

The user preferences screen provides many options for changing parameters and preferences relating to the user interface, camera controls and shot management.

To access the screen, tap **Menu > User Preferences**.



Changes made to the User Preferences are global (all cameras/devices) and saved for the current user logged in.

Buttons with a blue background indicate that a toggled parameter or mode is ON. After making the required changes on this screen tap **Return** to go back to the workspace. The screen is divided into configuration groups:

- Grid Display Options
- Panel Options
- Shot Options
- Camera Control
- Shot Preferences
- Group Display Preferences
- CCU Recall Preferences

## Grid Display Options

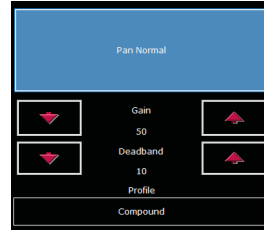
Options	Description
<b>Grid Size</b>	Tap to change the size of the shot storage grid. Tap <b>OK</b> to confirm any changes. The minimum grid size is 2 x 3 per page. The maximum grid size is 9 x 16 per page.
<b>Display Headers</b>	Turns the column and row headers (ABC/123) on or off. The headers are particularly useful when a show extends over multiple pages.
<b>Per Camera Display</b>	When this option is enabled and a camera is selected, the editing grid will only show thumbnails for shots stored for that camera. All other shots in the grid will be shown as grey boxes.

## Panel Options

Options	Description
<b>Display Full Panel</b>	Expands the size of the Camera Selection and Status panel.
<b>Stick Preferences</b>	Enters the Stick Preferences screen, where you can change the parameters of the camera controls.

### Stick Preferences

The stick preference screen gives you the option to change the behaviour of the main camera axis controls. Each axis can be adjusted as follows:



ALWAYS turn off X4 on the control panel before adjusting the zoom profile.

Options	Description
<b>Normal/Reverse</b>	These parameters select the behaviour of each axis control to suit your preferences. For example, pushing the joystick away from you can cause the head/camera to tilt up or down. Tap to select <b>Normal</b> (button is blue) or <b>Reverse</b> (button is black).
<b>Compound/Linear/Exponential</b>	This adapts the profile of each axis control to suit your preferences. Compound (a combination of linear for small movements and compound for larger movements) is the most common choice.
<b>Gain/Deadband</b>	<p>The gain is used to set the velocity of the movement of the robotic camera or lens, with the gain setting of 100 being the fastest speed of movement. The deadband setting is used to adjust the amount of play that is felt in the joystick before the camera or lens starts to move.</p> <p>Before changing the gain or deadband settings for the joysticks, you should select the desired profile (Compound, Linear or Exponential).</p> <p>Use the up/down arrows to adjust the gain and deadband settings.</p>
<b>Defaults</b>	Restores the factory default settings for all the stick preferences.
<b>Save</b>	Stores the current settings of stick preferences in the profile of the currently logged in user.
<b>Cancel</b>	Returns to the <b>User Preferences</b> screen without making any changes.



Separate profile, gain and deadband adjustments for the tilt joystick are not provided, because the pan and tilt settings are synchronised. Any change to the pan gain or deadband will be replicated in the tilt joystick.

## Shot Options

Options	ON (Blue)	OFF (Black)
<b>Display Shot Name</b>	The name of each shot is superimposed in the stored shot cells.	The shot name is not displayed.
<b>Require Shot Name</b>	You will be prompted to type in a name when you store a new shot. This is the most common mode of operation.	The system will automatically assign a number to each saved shot. This can save time but the shot names are no longer descriptive.
<b>Display Shot Time</b>	The time of each shot is superimposed in the stored shot cells.	The time is not displayed.
<b>Require Shot Time</b>	You will be prompted to enter a time when you store a shot.	The default shot time is used for each stored shot. This is the most common mode of operation because it is faster than entering times each time you store a new shot.

## Camera Control

Options	ON (Blue)	OFF (Black)
<b>Deselect</b>	A camera that has been selected can be deselected by tapping it on the screen.	A camera can only be deselected by selecting a different camera.
<b>Always Take Rudely</b>	Selecting a camera at one controller immediately takes control away from a second controller that may have been using the camera.	A message appears requesting you to confirm that you want to take control of the camera from the other controller.
<b>Always Stop Fast</b>	For a robotic camera that is in motion during a cut or fade, selecting <b>STOP</b> on the touch-screen or on the control panel will immediately stop movement.  This abrupt change of motion is not desirable for a camera that is on air, but does ensure an immediate stop to avoid a collision.	For a robotic camera that is in motion during a cut or fade, selecting <b>STOP</b> on the touch-screen or on the control panel will cause the camera to decelerate and coast to a stop.  This smooth change of motion is desirable if the camera is on air.



## Shot Preferences

Options	ON (Blue)	OFF (Black)
<b>Take Camera</b>	When you select a shot on the touch-screen, the camera preview selection on the joystick control panel automatically follows and the joysticks will control the camera for the selected shot.	The shot selection on the touch-screen and the camera preview selection are decoupled. So, let's say that one camera1 is on air and being trimmed with the joysticks. You can select the next shot on camera3 and fade or cut to it while continuing to trim camera1 with the joysticks.
<b>Single Selection</b>	Allows you to select a shot on one camera at a time and then cut or fade to that shot. Selecting a second shot on a different camera automatically deselects the first shot.	Allows you to select shots on multiple cameras and then cut or fade to all of the shots at the same time.
<b>Delete Warning</b>	Every time you delete or replace a shot a warning message appears and requires you to confirm the deletion or replacement.	Shots will be deleted or replaced immediately. This mode should be used with caution, because there is no undo feature to restore a deleted shot.
<b>Default Time</b>	Allows you to enter a default time that will be used when you store shots (if the Require Shot Time function is off).	
<b>Allow Deselect</b>	When you select a shot on the touch-screen, you can deselect that shot by tapping it a second time.	When you select a shot on the touch-screen, you can only deselect that shot by selecting a different shot on the same camera. Touching a selected shot a second time has no effect.
<b>Show Main Panel Groups</b>	Displays the Primary Panel Groups bar showing the camera mapping groups.  The height of each row of stored shot cells in the editing pane is reduced slightly.	The Primary Panel Groups bar is not displayed and cameras are assigned to their default buttons.
<b>Show Preview Panel Groups</b>	Displays the Preview Panel Groups bar showing the camera mapping groups, below the Primary Panel Groups bar.  The height of each row of stored shot cells in the editing pane is reduced slightly.	The Preview Panel Groups bar is not displayed.
<b>Dock On Top</b>	Displays the Primary Panel Groups and Preview Panel Groups bars, if enabled, above the Stored Shot Editing grid.	Displays the Primary and Preview Panel Groups bars between the Stored Shot Editing grid and the Camera Selection and Status bar.

## CCU Recall Preferences

Options	Description
<b>Iris</b>	Tap <b>Iris</b> to recall only the Iris setting with the shot. Iris recall can be selected with or without Master Black recall. If <b>All</b> is selected, the setting of Iris is ignored.
<b>Master Black</b>	Tap <b>Master Black</b> to recall only the Master Black setting with the shot. Master Black recall can be selected with or without Iris Recall. If <b>All</b> is selected, the setting of Master Black is ignored.
<b>All</b>	Tap <b>All</b> to recall all stored camera functions and CCU parameters with the shot. This will override the Iris and Master Black selections.

## Configuration Management

The Configuration Management Screen provides an interface for:

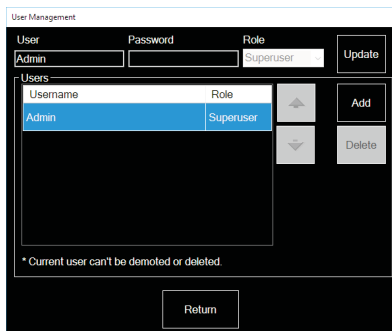
- Adding and changing camera components
- User Management
- Adding and managing EPIs

For more information on adding and changing camera components, see **Setting up a Basic VRC System** on page 6.

To access the screen, tap **Menu > Configuration Management**.

### User Management

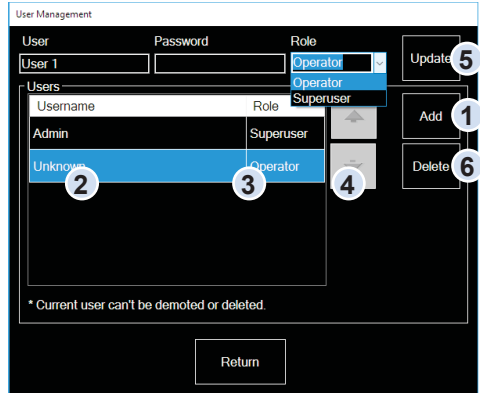
In the System panel, tap the **Users** button. The User Management window opens. By default, the user Admin has been created as a Superuser. A Superuser has the right to add and delete other users.



At least one Superuser must be present on the system to allow access to User Management. The last remaining Superuser cannot be removed.

## Adding a User

1. Tap the **Add** button. A new user named **Unknown** appears in the list.
2. Name the user in the **User** field.
3. Provide a password in the **Password** field (leave blank for no password).
4. Select the **Role** of the user (**Operator** or **Superuser**).
5. Tap the **Update** button.



## Deleting a User

To delete a user, select the user from the list and tap the **Delete** button (6).

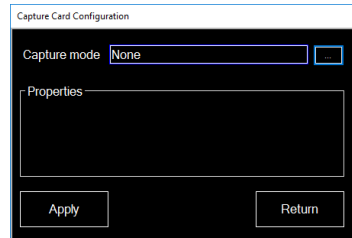
When all the required changes have been made, tap the **Return** button to exit the User Management window.

## Capture Card Configuration

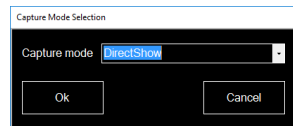
If a video capture card is installed and connected into the VRC system, it can be setup in the Capture Card Configuration window.

In the System field, tap the **Capture Card** button. The Capture Card Configuration window opens.

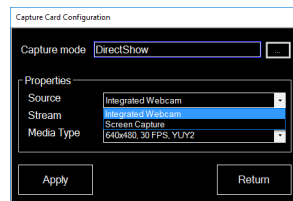
1. Tap the browse (...) button to open the Capture Mode Selection window.



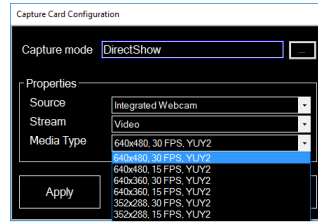
2. Tap to select the required capture mode\* from the drop-down menu and tap the **Ok** button.



3. In the Properties panel, select the video source\* from the drop-down menu.



4. Set the media type\* (video standard) from the drop-down menu.



5. Tap the Apply button to store the changes and exit the Capture Card Configuration window.

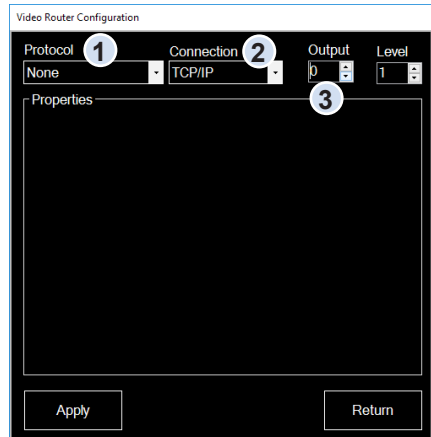
\* Refer to the documentation supplied with the capture card.

## Video Router Configuration

If a video router is connected into the VRC system, it can be setup in the Video Router Configuration window.

In the Client panel, tap the **Video Router** button. The Video Router Configuration window opens.

1. Select the protocol\* of the switcher from the **Protocol** drop down list.
2. Select the transport type\* of the switcher from the **Transport** drop down list.
3. Change the number offset\* for the switcher by using the arrows in the **Output** field. This is the video output number the preview monitor is connected to on the switcher.
4. Change the switcher number level\* using the arrows in the **Level** field.



\* Refer to the documentation supplied with the video router.

## Configurable Video Router Settings

If the **Configurable** option is selected from the Protocol drop-down menu, settings can be applied for a specific video router configuration.

**Source offset:** This is the input on the video router that the first camera is connected to. Subsequent cameras must be connected contiguously (some video routers number from 0 and others from 1).

The example shown is for a Blackmagic video hub.

Video Router Configuration

Protocol	Connection	Output	Level
Configurable	TCP/IP	0	1

Properties

Source Offset	0
Take Msg	XPOINT 0: (2), (1)\n
Keep-Alive Msg	
Keep-Alive (ms)	1000
IP Address	192.168.200.3
Port	10001

Apply Return



For further help and advice for configurable video router settings, please contact Vinten.

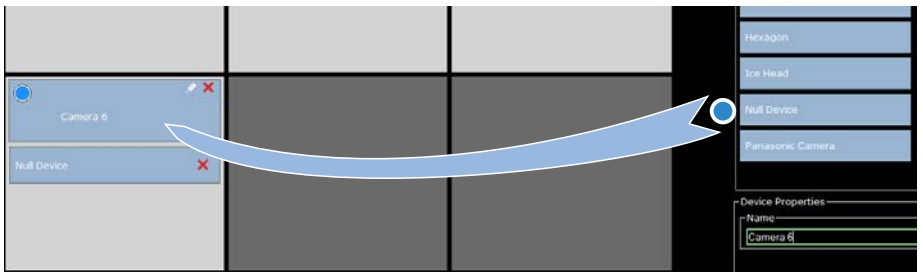


The switching function of the video inputs will not work until the inputs have been configured. Refer to the section **Camera Inputs Configuration** on page 45.

## Adding and Configuring Non-Robotic Cameras

Non-robotic cameras in studios, such as those fitted to manual heads and pedestals, can also be integrated into the VRC system for tally and video router configuration. This allows a camera to be selected from the control panel or touch-screen to switch on-air video and tally indication in the same way as other connected camera units.

1. Drag Null Device from the Device Profiles list onto the device storage grid.
2. Name the new device in the Device Properties panel.



3. When applied, the new named device will appear on the camera selection bar.

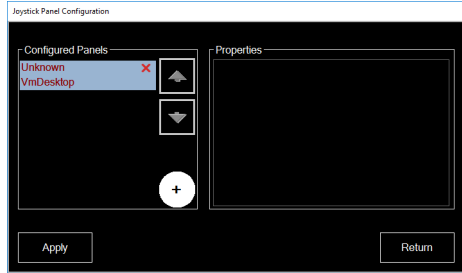
Video and switcher lines can now be configured for the device. See the section **Camera Inputs Configuration** on page 45.

# Joystick Panels Configuration

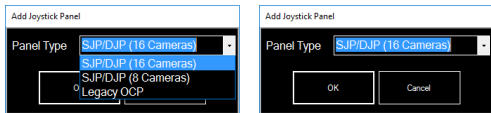
Connected joystick panels can be added and configured into the VRC system, using the Joystick Panel Configuration window.

In the Client panel, tap the **Joystick Panels** button. The Joystick Panel Configuration window opens. Joystick panels already added and configured in the system are displayed in the Configured Panels list.

1. To add a joystick panel, click the + button.



2. In the Add Joystick Panel window, select the required panel from the drop-down menu and tap **OK**.



3. In the properties panel:

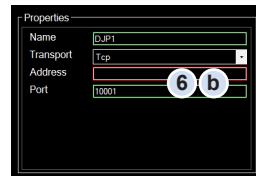
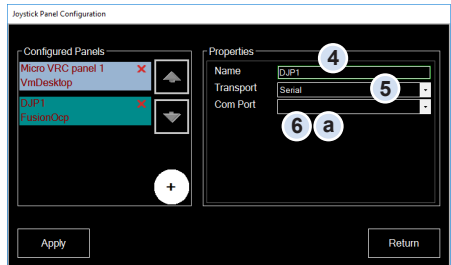
4. Assign a name to the panel.

5. Select the panel connection protocol from the Transport drop-down menu (serial/ TCP).

6. Enter the connections settings:

(a) If serial, set the appropriate com port from the drop-down menu.

(b) If TCP, enter the IP address and port number of the panel.



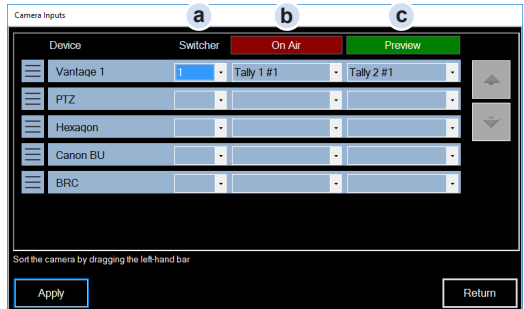
# Camera Inputs Configuration

If optional video switchers and tally devices are connected to the VRC system, video and tally indicator channels can be assigned to individual camera units. When a camera is selected for control, the appropriate tally indicator line and video channel are displayed.

1. From the main VRC workspace tap **Menu > Camera Inputs**. The Camera Inputs window opens, displaying all available camera units for configuration.

2. Configure each camera device as appropriate:

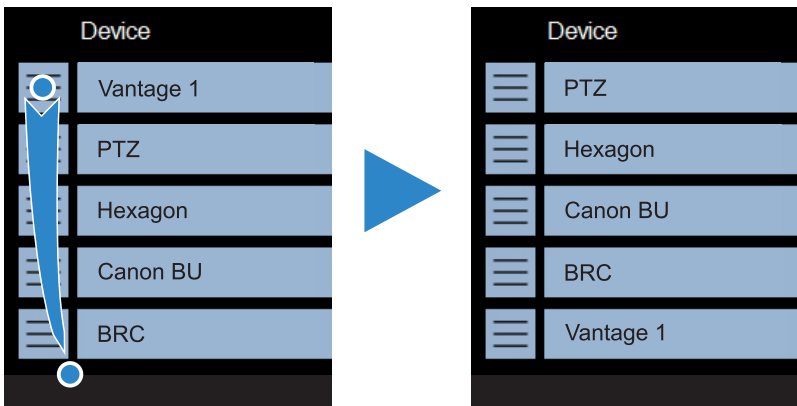
- (a) Select the video input channel from the drop-down menu.
- (b) Select the tally device (by name) and tally line to be used for on-air indication.
- (c) Select the tally device (by name) and tally line to be used for preview indication.



## Sorting Camera Positions

If a multiple number of cameras are present on the VRC system, the order they appear on the Camera Selection and Status bar can be changed. This is useful to identify and select frequently used cameras quickly during operation. In the Camera Inputs window:

- 1. Tap and drag on the left hand bar of a camera to a new location (example shows camera named Vantage1 being moved to the last position).
- 2. On release the camera is displayed in the new position.



When camera positions are changed, the physical connections on the switcher must also be changed to match the new order.

# About Screen and License Management

The About screen displays software and license information. The License management window is also accessed from the screen.

To access the screen, tap **Menu > About**. The current software version and licenses are displayed.

Tap **Return** to exit.

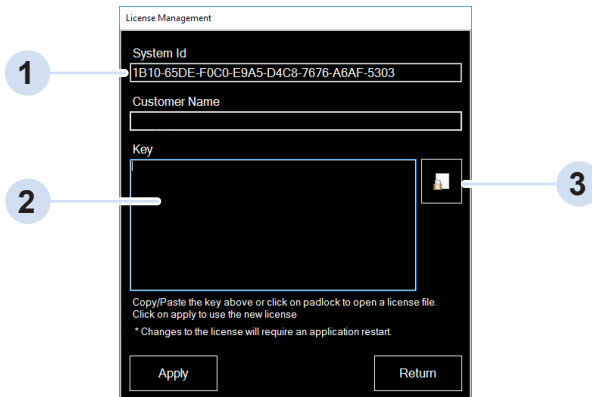


## License Management

If additional features and functions are purchased to upgrade the  $\mu$ VRC or HD-VRC, a license key is issued. This license key must be applied to activate the new features. When you purchase a software license, you will be issued with a license serial number. To obtain your license key, you must go to the Vinten website and use the online license request form. You will need:

- The system ID
- Your name (individual or organisation)
- The license serial number

In the About screen, tap the **Update License** button. The License Management window opens.



- 1 The System ID is a unique code for your installation of the VRC application. The System ID must be quoted when purchasing additional licenses.

There are two ways to apply a license key:

- 2 Copy and paste the new license key into the **Key** field. Tap the **Apply** button to activate the new license.
- 3 If you have a license file, tap the **Padlock** icon. When the Windows browser opens, navigate to the appropriate license file (\*.lic file) and tap **Open**. Tap the **Apply** button and restart the VRC application to activate the new license.



# Device Configuration



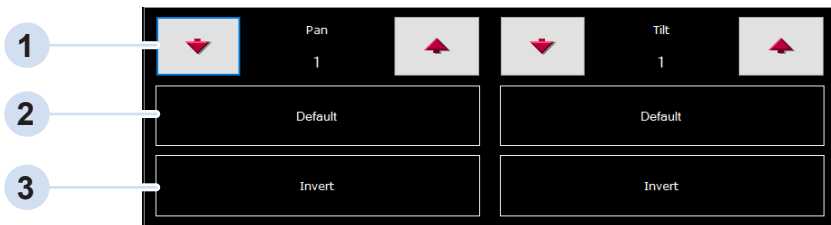
**WARNING!** Changes to the configuration settings of robotic products can cause a risk of personal injury or product damage. Ensure the motion of the product is monitored when changes to settings are being carried out.

Connected robotic cameras, such as Vantage heads, can be configured to adjust settings for the range and characteristics of movement.

1. Select the appropriate camera head.
2. Tap **Opts > Device Configuration**.
3. The Device Configuration screens open, with two tabs available for selection - Axis Gains and Axis Limits.

## Changing the Camera Axis Gain Settings

Robotic cameras can be configured to adjust the axis gain settings, changing the motion response of the head to joystick control. Each axis can also be inverted to reverse joystick control. Axis gain settings can be easily set, changed or cleared.



- 1 Adjust the **Gain**\* settings for Pan or Tilt tapping the up/down arrows.
- 2 Tapping the **Default** button for Pan or Tilt restores factory defaults for gain settings.
- 3 Tapping the **Invert**\*\* button for Pan or Tilt reverses the movement direction of the axis when controlled by the joystick.



\*When adjusting the gain settings, it takes approximately 3 seconds for the last adjustment to take effect.

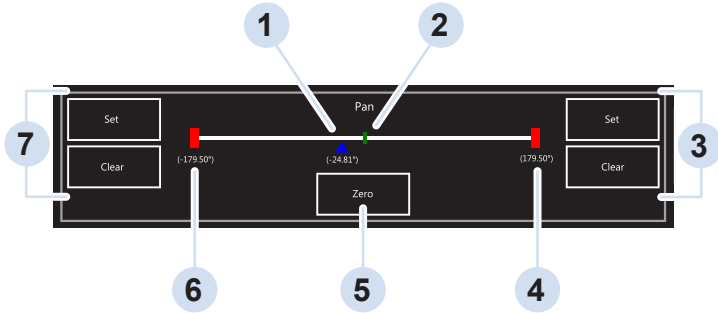


\*\*The Invert setting is for when the robotic device is ceiling mounted, or the cradle is inverted. Using the invert setting ensures that joystick control (camera movement) is consistent for all devices.

## Changing the Camera Axis Limits

Robotic cameras can be configured to limit the range of movement in axes of motion. This is useful to prevent collision with a wall or ceiling, or the tilt axis colliding with the head itself. Axis limits can be easily set, changed or cleared.

Each axis displayed in a separate panel (example shown is the pan axis).



1 Current position marker of the camera on the axis

2 Mid-point of the axis

3 Set/Clear buttons for the positive axis end limit

4 Current positive axis end limit marker

5 Zero axis value button

6 Current Negative axis end limit marker

7 Set/Clear buttons for the negative axis end limit

## Resetting the Axis Centre Point

The centre points of the camera control axes can be set at any position required.



In a typical installation, pan is set with the camera pointing at the main area of interest in a production, and tilt set with the camera platform horizontal.

1. Drive the camera to the desired position on the axis.

2. Tap the **Zero** button in the appropriate axis panel.

3. The current position marker (blue triangle) returns to the centre point and is reset to 0.00°.

## Setting Axis Limit Points

The range of the camera control axes can be restricted by setting limit points. The procedure described below is identical for all axes and positive and negative limits.

1. Drive the camera to the desired limit position on the axis.
2. Tap the **Set** button for the appropriate axis limit end (positive or negative).
3. The axis end limit marker (red rectangle) moves to the new limit point and the limit position value is displayed in degrees.

## Clearing Axis Limit Points

Camera control axes limit points can be easily cleared and changed at any time. The procedure described below is identical for all axes and positive and negative limits.

1. Tap the **Clear** button for the appropriate axis limit point (positive or negative) to remove the current limit point position.
2. A new limit can be applied by driving to a new position and tapping **Set**.

# EPI Configuration

A more complex VRC system installation may consist of two or more VRC controller computers connected on the same network. These can be HD-VRC or  $\mu$ VRC controllers, or a mixture of both, and are referred to as EPIs.

A basic EPI consists of:

- A VRC controller computer running the VRC control and EPI server applications
- Camera units and other devices added and configured on the VRC controller

EPIs in the VRC system can be added to any other VRC controller. This allows other controllers to connect to compatible camera units and devices already configured in the EPI.

Two VRC controllers can be grouped together within one EPI. This has the advantage of allowing the control of shared camera units and devices to continue uninterrupted if one of the VRC controllers goes offline or fails.

In more advanced and complex VRC systems, the configuration of EPIs can be replicated onto others to provide a full backup option for controlling devices which is constantly updated when changes are made.



## Important Information About Configuring and Using EPIs

It is important to understand the guidelines and limitations when working with EPIs. When a user takes control or makes changes to camera units and devices within a remote EPI added on the local VRC controller, there are potential consequences for other system users.



---

**WARNING!** Controlling and changing the configuration settings of robotic products in remote EPIs can cause a risk of personal injury or product damage. Ensure the motion of the product is monitored when controlling or changing settings.

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**IMPORTANT!** To ensure reliable and consistent operation, it is strongly recommended that all of the VRC controllers are running the same version of the VRC application software. VRC controllers running version 2.4 application software will not be compatible with controllers running version 2.5 or above. Update any previous versions before configuring or grouping EPIs.

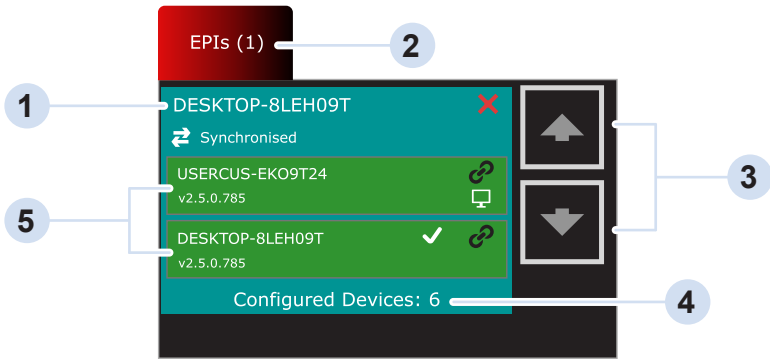
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When adding, grouping or removing EPIs:

- Carry out the procedures described to ensure consistency with the EPI configurations across all VRC controllers in the system. Refer to the section **Working with EPIs and EPI Groups** on page 56.
- Consult other users before making changes to EPIs, especially when deleting configured devices.
- Changes to devices or device configuration on one EPI will not be visible on other EPIs unless replication is enabled. Refer to the section **Replication** on page 60.

## EPIs Tab Panel









EPIs are created and configured in the EPIs tab panel, located on the top left side of the Configuration Management screen.



1	EPI name
2	The number of EPIs currently in the VRC system
3	Scroll arrows (used if the number of EPIs listed can't be displayed in the panel)
4	The number of configured devices available in the EPI
5	VRC controllers (hosts) grouped in the EPI

## EPI Panel Symbols

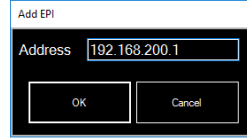
Symbols are used in the EPI panel to indicate important information and carry out actions.

Symbol	Function	Description
	<b>Synchronised</b>	Indicates the EPI hosts are connected, powered and synchronised.
	<b>Unsynchronised</b>	Indicates the EPIs are currently not synchronised, either due to a restart, failure or loss of connectivity.
	<b>Local</b>	Indicates the local VRC controller within the EPI (the controller you are currently located at and operating)
	<b>Selected</b>	Indicates the primary VRC controller within the EPI.
	<b>Errors Detected</b>	Connection errors between EPIs detected or configuration of connected devices is incomplete and cannot be applied.
	<b>Configuration Changes</b>	Changes have been made to the configuration of one or more connected devices, but not yet applied.
	<b>Unlink</b>	Tap to remove a VRC controller from the current grouping and return it to a separate EPI.
	<b>Remove</b>	Tap to remove the EPI from the local VRC controller.

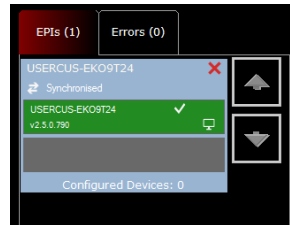
## Adding an EPI

To add an EPI for selection by the current VRC controller:

1. Tap the ⊕ button in the bottom right corner of the EPI panel.
2. In the Add EPI window type either the IP address or the network name\* of the VRC controller.



3. Tap the **OK** button. The EPI will appear in the EPI tab panel.



\*The network naming convention of the VRC controllers must conform with standards allowing the devices to be contactable by name over the network. It is recommended that the IP address is used instead of the network name.

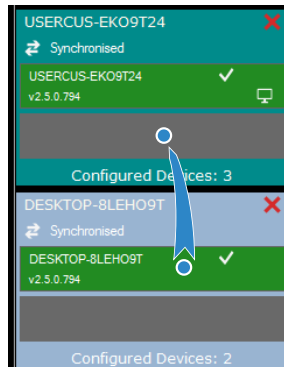
## Grouping



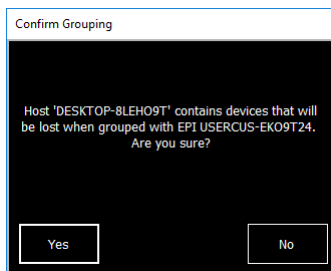
Grouped VRC controllers must be on the same local subnet network.

To group together two VRC controllers into a single EPI:

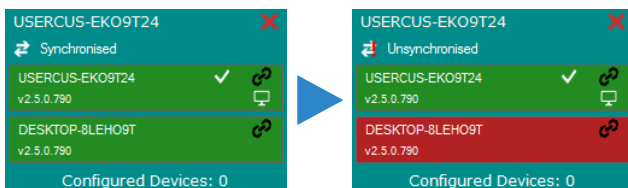
1. Ensure the other VRC controller is added to the system as a standalone EPI.
2. Tap to select the EPI which will form the group (turns dark green).
3. Drag the other required EPI into the spare box on the EPI to create the group.



4. If the EPI being added into the group has configured devices on it, they will be lost in the grouping process. If this is acceptable, tap the **Yes** button in the Confirm Grouping window.



5. The VRC controller box will turn red whilst restarting. After several seconds the controller will turn green indicating successful grouping and synchronisation.



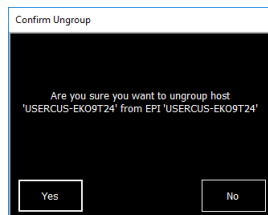
6. Repeat the grouping procedure on the other VRC controller:

- (a) Ensure the EPIs are grouped in the same order to avoid synchronisation errors.
- (b) Apply the changes and restart the VRC application.

## Ungrouping

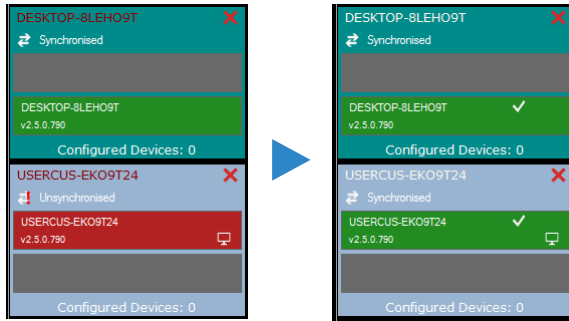
To ungroup two VRC controllers into two separate EPIs:

1. Tap the **Unlink** symbol on the VRC controller to leave the group.
2. In the Confirm Ungroup window tap the Yes button to proceed.



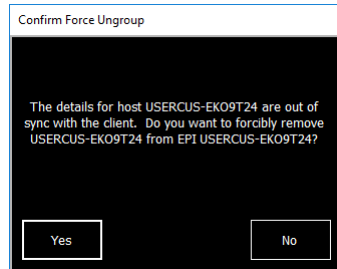


3. The ungrouped VRC controller separates into a standalone EPI and restarts. The VRC controller box will turn red whilst restarting. After several seconds the controller will turn green indicating successful ungrouping and synchronisation.



4. Repeat the ungrouping procedure on the other VRC controller:

- (a) Tap the **Unlink** symbol on the VRC with the error symbol displayed.
- (b) Tap the **Yes** button in the Confirm Ungroup window.
- (c) Because the VRC controller has already been ungrouped on the other controller, there is a synchronisation issue. In the Confirm Force Ungroup window tap the **Yes** button to confirm.

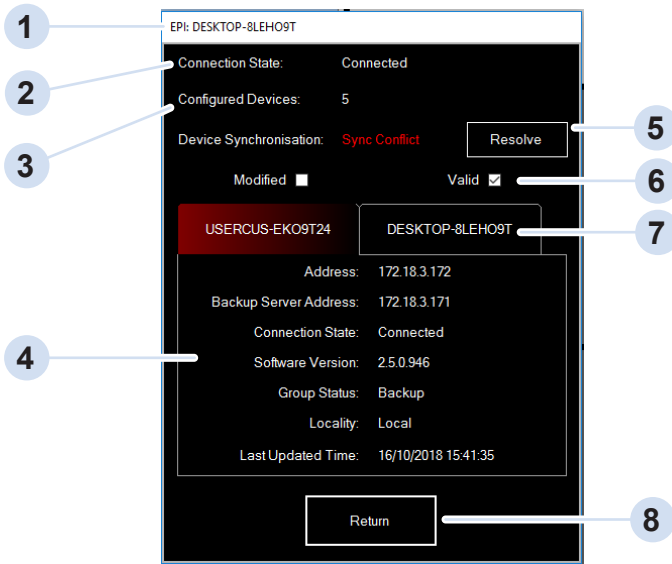


5. The VRC controller is removed from the group and the EPI panel list. Re-add as a separate EPI if required.

## Working with EPIs and EPI Groups

### EPI Information

Key information about the EPI can be displayed by double-tapping on it in the EPI tab list.

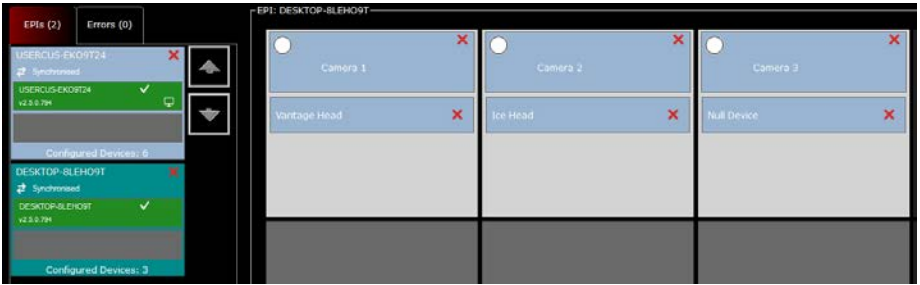


1	EPI name
2	The number of devices currently added in the EPI
3	Synchronisation status
4	EPI information panel (VRC controller details)
5	Sync Conflict indication - Tap <b>Resolve</b> to fix configuration conflict issues
6	Configuration status
7	EPI information tab for second VRC controller (in a grouped EPI)
8	Tap <b>Return</b> to exit the information window.

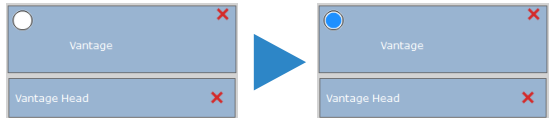
## Controlling Devices

When a remote EPI has been added to the local VRC controller, compatible devices already configured can be controlled.

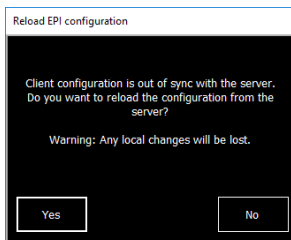
1. Tap to select the added EPI from the EPI tab panel list.
2. Camera units and devices configured on the EPI appear in the device storage grid.



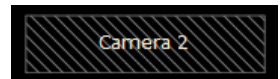
3. Enable compatible devices by tapping the **white** button (turns **blue** when the device enables).



4. Tap the **Apply** button. In the Reload EPI Configuration window, tap the **Yes** to confirm the changes.



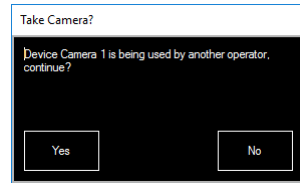
5. Tap Return and confirm a restart. After a restart, compatible devices from the remote EPI will now appear on the camera selection bar. If any devices on the EPI are not compatible with your controller configuration, they appear on the bar with a gray hash and are not selectable for control.



## Take Camera Control

If cameras are being used by another VRC controller, they appear in dark blue on the camera selection bar.

When selected, the Take Camera? window opens. If this is acceptable, tap **Yes** to take control of the camera from another operator.



## Adding, Configuring and Removing Devices in an EPI

Camera units and other devices can be added, configured and removed from an EPI at any time. However, any changes made affect other users connected to the EPI on other VRC controllers. It is therefore important to:

- Consult other users before making any device changes
- Follow the procedures detailed carefully to avoid EPI errors and inconsistent operation

To create a VRC system where configuration is constantly updated on all VRC controllers without the need for manual intervention, a replication service can be setup. See the section **Replication** on page 60.

### Adding and Configuring Devices

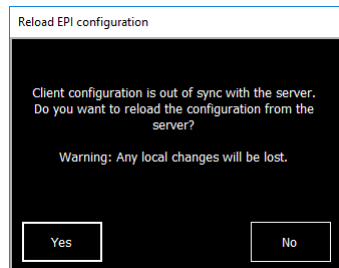
1. At the local VRC controller:

- (a) With the correct EPI selected, add a camera or device as normal, and configure as required.
- (b) Perform any other configuration changes to devices in the EPI.
- (c) Apply the new devices and configurations as normal, allowing the VRC application to restart so the changes take effect.

2. At all the other VRC controllers in the system using the EPI:

- (a) In the Configuration Management screen the Reload EPI Configuration window will be displayed.
- (b) Tap the **Yes** button to proceed, observing that any local changes made to the EPI will be lost and cannot be recovered.

3. Apply the configuration changes and allow the VRC application to restart on all the VRC controllers using the EPI.



## Removing Devices



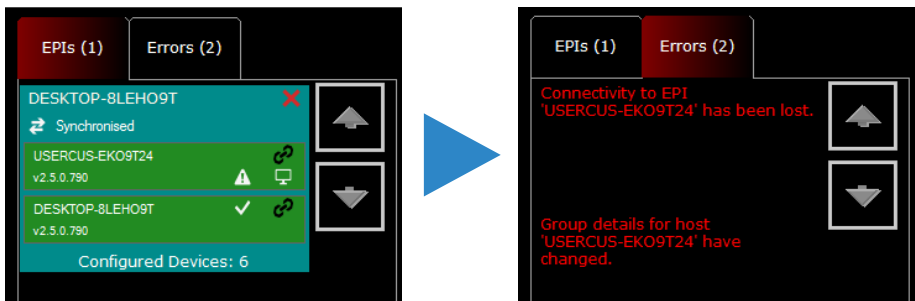
**IMPORTANT!** Removing devices from an EPI on a local VRC controller also removes them from all other controllers using the EPI. Any configuration will be lost. Consult other users before proceeding.

1. With the EPI selected, tap the red **X** on the device to remove it from the device storage grid.
2. Apply the configuration changes and allow the VRC application to restart on all the VRC controllers using the EPI.
3. Apply the configuration changes on the other VRC controllers using the EPI.

## EPI Errors

Any errors detected either with an EPI or communication between EPIs are highlighted to aid diagnostics.

The errors symbol is displayed on the affected EPI/controller. Tapping on the Errors tab displays details for the errors.



When errors have been resolved, they are automatically removed from the list.

## Replication

In more complex VRC systems where two or more VRC controllers need to be kept constantly synchronised when changes are made to device configuration, the replication service can be set up and used.

The replication service ensures that all databases in the replication group are kept in step with the relevant data (i.e. they are all mirrors of each other). The Replication Configuration Tool defines which controller databases are in the replication group.



A license is required to activate the replication functions.

### Starting the Replication Service

During normal operation, the replication service should start automatically. However it may be necessary to start the service manually.

1. In the Windows menu, search for “**services**” and select to open.
2. In the Services window, scroll down the list of applications to find “**Vrcs Replication**”. Tap and hold on the line.
3. When the menu appears select **Start**. The Startup Type should be set to **Automatic**.
4. After the replication service has started, close the Services windows.
5. Repeat the process on the other VRC controllers which will form the replication group.

Vrcs Automation	Fusion Vrcs ...	Automatic
Vrcs DBMaintenance	Fusion Vrcs ...	Automatic
Vrcs Panel Hosting	Fusion Vrcs ...	Automatic
Vrcs Replication	Fusion Vrcs ...	Automatic
WalletService	Hosts obj	Start
WebClient	Enables V	Stop
Windows Audio	Manages	Pause
Windows Audio Endpoint B...	Manages	Resume
Windows Backup	Provides 1	Restart

## Configuring the Replication Service

When the Replication Service has been started on the VRC controllers, the Replication Configuration Tool is used to create a replication group. The Replication Configuration Tool can be used on any of the VRC controllers.

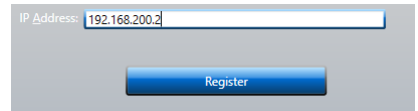
1. In the Windows menu tap to select Vinten Radamec Robotics > Replication Tool.
2. The Replication Tool window opens. Tap the **Yes** button in the Warning message to continue.



3. The VRC controller running the Replication Tool is already added in the Replication Group list.



4. Tap The **Add** button and enter the IP address of an additional controller into the IP Address field and tap the **Register** button.
5. Register all the other VRC controllers required to be part of the replication group.



6. When the replication group is complete, tap the **Replicate All** button.
7. When the replication process has completed, close the Replication Tool.
8. Reopen the Services window, scroll down the list of applications to find "**Vrcs Replication**". Tap and hold on the line.
9. When the menu appears select **Refresh**. After the replication service has restarted, close the Services window. Repeat the process on the other VRC controllers which are in the replication group. This will ensure that the databases are synchronised immediately.

## Using Replication

When replication is running, device configurations are constantly updated across all the VRC controllers in the replication group. However, when device changes (adding, configuring or removing) are made:

- Consult other users before making configuration changes
- All the VRC controllers need to be restarted for configuration changes to take effect globally

## Button Mapping

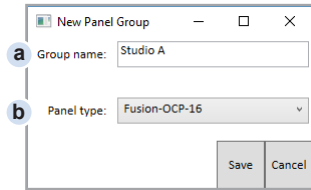
The default order in which camera units appear on the control panel buttons and touch-screen buttons is determined when devices are added to the VRC controller configuration. The Button Profile Configuration Tool can be used to map any camera to any button (or multiple buttons) on the control panel and touch-screen as part of a button map group. You can define multiple button map groups of cameras to match your workflow.

From the windows menu, tap to select the **Button Profile Configuration Tool** (in the Vinten Robotics folder).

### Creating a Panel Group:

1. Tap the **New** button. The New Panel Group window opens:

- (a) Type the name of the new group (for example Studio A) in the Group name field.
- (b) Select the appropriate control panel type from the Panel type drop down list.



2. Tap **Save** to create the new panel group, or touch **Cancel** to exit without creating the panel group.



After a panel group is created, you cannot change the panel type. The panel group must be deleted and created again.

The Button Profile Configuration Tool shows the new group ready for configuration:



1 Groups Panel - The newly created group and any other groups are listed

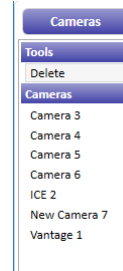
2 Group Preview Panel - The camera select buttons for the current panel are displayed



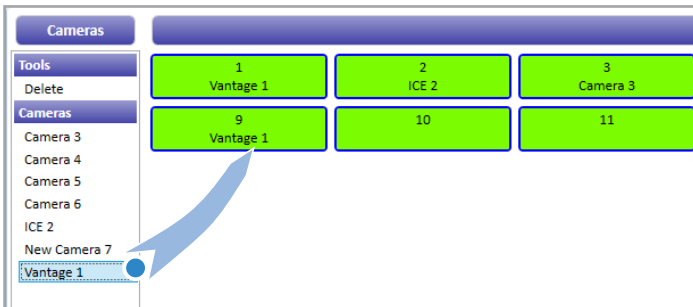


A mouse is required to perform the click and drag functions in the Button Mapping Configuration Tool. Connect a mouse to the local VRC controller.

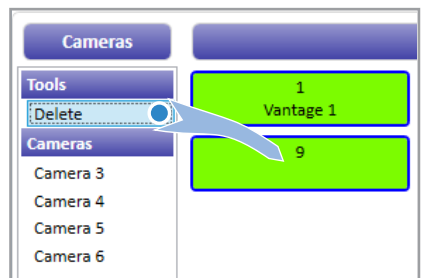
1. Tap the Edit button to display a list in the left-hand panel of all available devices that can be mapped to buttons.



2. Left-click and hold on a device and drag and drop it onto the desired button in the Group Preview Panel. You can assign the same device to more than one button if you wish. In the example below the Vantage head has been mapped to button **1** and button **9**.



3. To delete a device from a button, left-click and hold **Delete** and drag and drop it on the desired button (example show Vantage head removed from button 9).



4. Tap the **Save** button to store the button map group.

## Editing a Panel Group

1. Select the desired group from the list of available groups in the Groups Panel.
2. Tap the **Edit** button.
3. Left-click and hold on a device and drag and drop it onto the desired button in the right-hand panel. Or, left-click and hold **Delete** and drag and drop it on a button to remove a device from that button.
4. Tap the **Save** button to store the modified button map group.

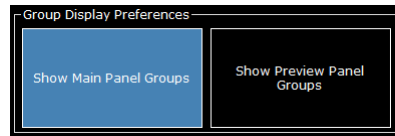
When button mapping configuration is complete, close the Button Profile Configuration Tool.

## Using Button Map Groups

Configured button map groups can be easily selected for use in the VRC application.

To display button map groups in the main VRC workspace window:

1. Tap **Menu > User Preferences**.
2. In the Group Display Preferences panel, enable **Show Main Panel Groups**.



In then main VRC workspace window, available button map groups are displayed in the Primary Panel Groups bar. Selecting a map group changes the order and selection of cameras in the Camera Selection and Status bar. The button map configuration is also applied to the camera buttons on the connected control panel.





# CCU Interfaces



The instructions in this chapter must be used in conjunction with the documentation supplied with your camera.

CCU (Camera Control Unit), is a TV studio term where a separate, external box was often used to control camera functions, such as colour matching. It is now used generically to describe adjusting camera options.

If cameras installed in the VRC system have a compatible remote control interface, you can control camera functions from the user interface. CCU parameters are saved with each shot. When a shot is recalled, the CCU parameters can be recalled if required.



The camera functions and CCU controls available are dependent on the manufacturer and model of the camera. For a full list of functions and controls for each camera protocol, see - **CCU Database** on page 69.

## Displaying the CCU Control Screen

To display the functions and CCU control screens for a camera:

1. Tap **Opts > CCU** to display the Functions and CCU control screens for the selected camera.

Each camera has a tabbed menu screen for camera functions and CCU controls. Buttons with a green background are functions that are ON. Buttons with a black background on the screen are OFF.

2. Tap **Return** to close the CCU screen and return to the workspace.



CCU parameters changed using the camera's menu system (either on the camera, or using the  $\mu$ VRC remote menu control) are NOT stored with shots. Only parameters that are directly modified from the  $\mu$ VRC CCU control buttons are stored.



If the CCU button is red, or turns red at any time, communication with the camera has been lost.

## Typical Camera Functions and CCU Controls

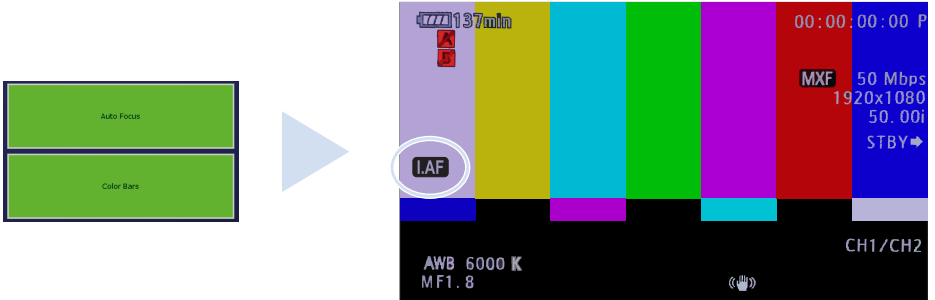
The camera functions and CCU controls available vary widely depending on the manufacturer and model of the connected camera and the protocol used. To demonstrate how the interface works, a typical camera has been chosen to provide an example. For a full list of functions and controls for each camera protocol, see **CCU Database** on page 69.

### Camera Functions Tab

The first tab on the CCU screen displays the camera functions for the connected camera. Buttons with a green background indicate that a function is selected or ON. Buttons with a grey background indicated that a function is not available



Many function buttons are a simple ON/OFF toggle such as Auto Focus or Color Bars. Functions being controlled or changed are seen on the camera's built in screen or video output.



Other function buttons open a sub menu, providing multiple selection settings such as WB Mode.

Tap a setting button to make a change and return to the main screen.



On many cameras, it is possible to access and control the built-in menu system. Changes can be made and stored remotely.



It is important that the user can see the on-screen display of the camera via a video monitor screen when navigating camera menus and making changes.

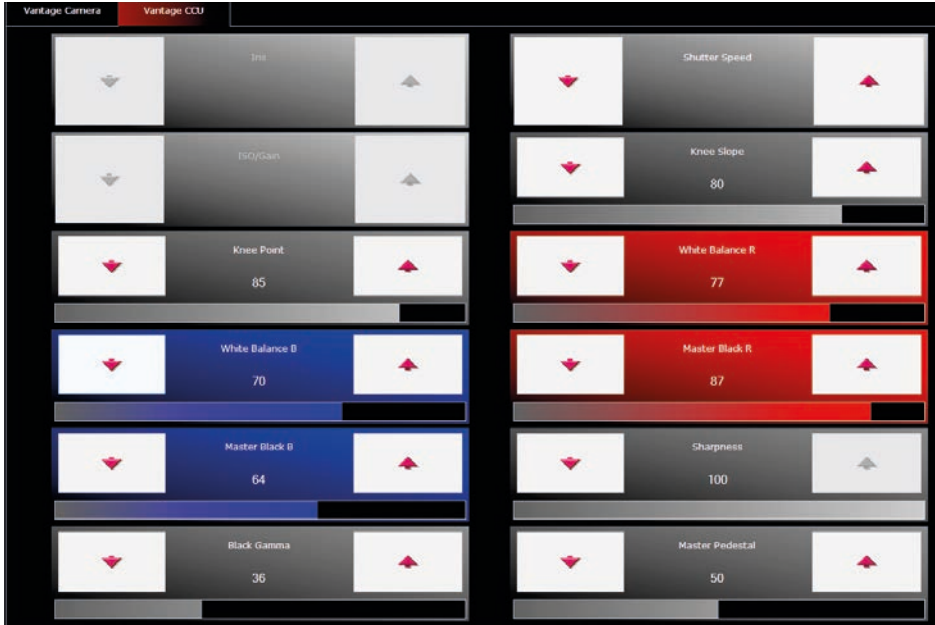
Tap the **Menu** button. Use the navigation buttons (right hand side of the screen) to scroll through the menus. Tap the **Confirm** button to enter a sub-menu or save a change. Use the **Cancel** button to discard a change.

Tap the **Menu** button again to exit the camera's menu system.



## CCU Controls Tab

The second tab on the CCU screen displays the CCU control functions for the connected camera.



Tap the **Up/Down** arrows to adjust individual settings as required. Red arrows indicate that the setting is available for adjustment. Observe changes on the camera's on-screen display or video output. Some functions have an indicator bar and display the setting value for precise adjustments.



Grey Up/Down arrows indicate a setting cannot currently be adjusted. This could be because the function is currently set to "auto". Most functions can be changed to "manual" control in the Camera Functions Tab.



Many camera models have physical switches that prevent manual remote control. Refer to the documentation supplied with your camera for more information.

# CCU Database

The tables in this section list cameras/camera protocols compatible with the VRC system. The camera functions and CCU controls available vary between the various camera models and protocols. The specific features are listed for each camera.

Although these features vary between cameras, they are operated in the same way as demonstrated in the section **Typical Camera Functions and CCU Controls** on page 66.

Sony CNA-1	Features	
	Iris Mode	Green Gain
	Nd Filter	Blue Gain
	Cc Filter	Red Pedestal
	Black Stretch	Green Pedestal
	Auto White Balance	Blue Pedestal
	Bars	Master Black
	Red Gain	Iris Level

Sony BRC	Features	
	Auto Focus	Menu* (Menu off)
	Auto White Balance	Blue Gain
	AWC Mode	Red Gain
	Color Bars	Iris
	Exposure Mode	

\* When operating the menu, joystick and shot recall functions are unavailable.

Sony Lanc	Features	
	Auto Focus	Menu
	Auto Iris	Iris

Panasonic PTZ		Features	
	Auto Iris		Auto White Balance
	Auto Focus		Auto Black Balance
	AWC Mode		Color Bars
	Menu		Red Gain
	Scene File		Blue Gain
	AGC		Master Pedestal (Master Black)
	Shutter Select		Iris
	Synchro Scan		Menu Navigation
	ISO/Gain		

Panasonic AK-UB300		Features	
	Auto Iris		Auto White Balance
	Menu		Auto Black Balance
	Crop Out Selection		Color Bars
	Crop Adj Selection		Red Gain
	Crop Marker		Blue Gain
	Crop Horizontal Position		Red Ped
	Crop Vertical Position		Blue Ped
	Nd Filter		Master Pedestal
	Shutter Select		Iris
	Shutter Switch		Scene File
	Shutter Speed		



**Canon CINE EOS  
(RC-V100)****Features**

Auto Focus	Iris
Color Bars	ISO/Gain
Auto Iris	Knee Point
Auto Knee	White Balance B
On Screen Overlay	Master Black B
Shutter Select	Black Gamma
WB Mode	Shutter Speed
Menu	Knee Slope
AGC	White Balance R
Custom Picture	Master Black R
Record Review	Sharpness
Nd Filter	Master Pedestal
Record Start/Stop	





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