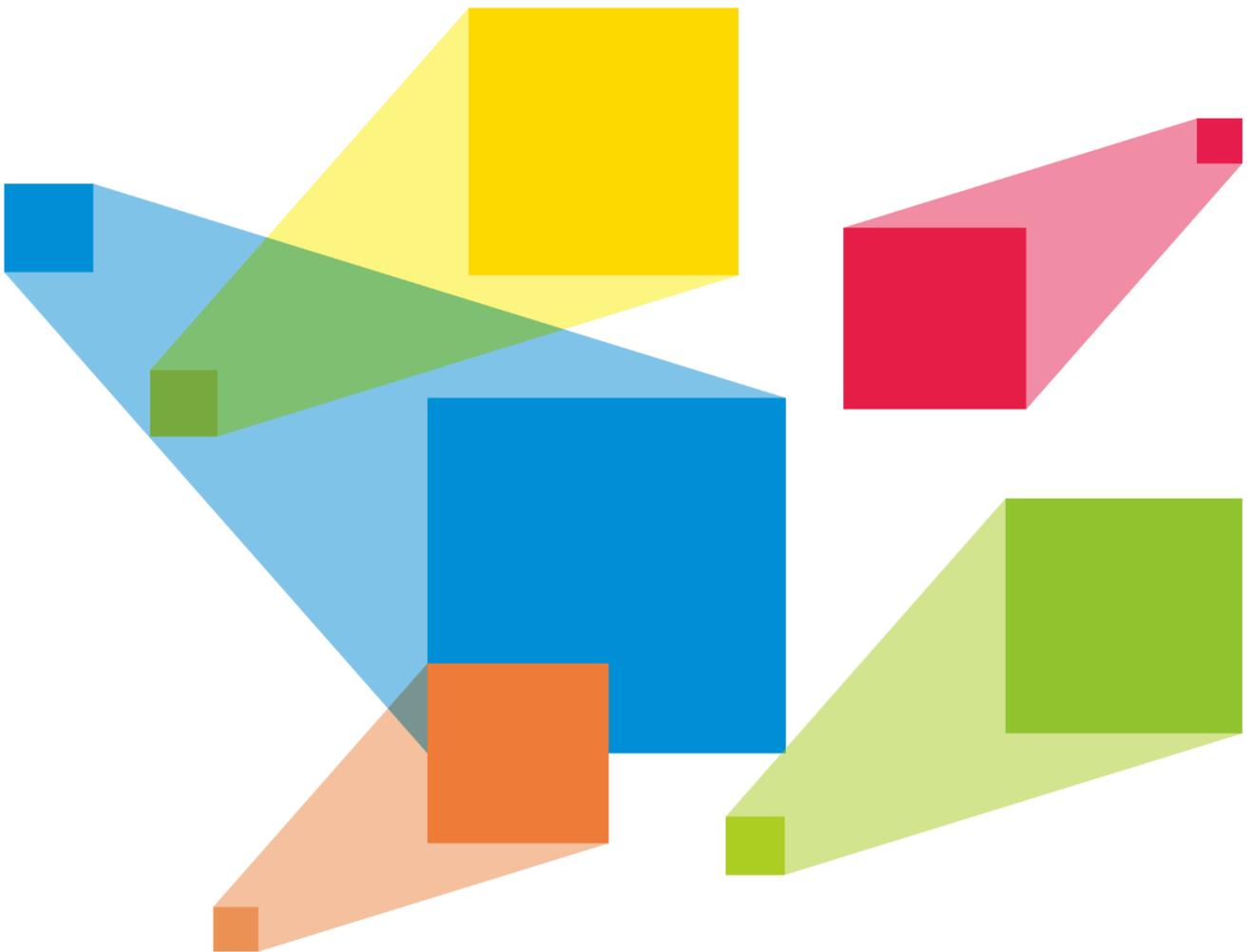


# C1

## Event Controller

V1.1.0    NS160100605



User Manual

**Copyright © 2019 Xi'an NovaStar Tech Co., Ltd. All Rights Reserved.**

No part of this document may be copied, reproduced, extracted or transmitted in any form or by any means without the prior written consent of Xi'an NovaStar Tech Co., Ltd.

**Trademark**

 is a trademark of Xi'an NovaStar Tech Co., Ltd.

**Statement**

You are welcome to use the product of Xi'an NovaStar Tech Co., Ltd. (hereinafter referred to as NovaStar). This document is intended to help you understand and use the product. For accuracy and reliability, NovaStar may make improvements and/or changes to this document at any time and without notice. If you experience any problems in use or have any suggestions, please contact us via contact information given in document. We will do our best to solve any issues, as well as evaluate and implement any suggestions.

# Contents

---

1 Introduction .....	1
2 Hardware Introduction .....	2
2.1 Appearance .....	2
2.2 Front Panel .....	2
2.3 Rear Panel .....	9
3 Applications .....	11
4 Operations .....	13
4.1 Preparation .....	13
4.2 Configuration .....	14
4.2.1 Adding Devices .....	14
4.2.2 Configuring Device Properties .....	17
4.2.2.1 Input .....	18
4.2.2.2 Output .....	21
4.2.2.3 Fast Mosaic .....	25
4.2.2.4 Advanced Mosaic .....	25
4.3 Programming .....	26
4.3.1 Layer .....	27
4.3.2 Transition Effects .....	30
4.3.3 BKG .....	31
4.3.4 Presets .....	32
4.3.5 AUX .....	34
4.3.6 Capturing .....	35
4.4 Settings .....	36
4.4.1 Device Status .....	36
4.4.2 Program Update .....	37
4.4.3 USB Import and Export .....	38
4.4.4 Communication Settings .....	39
4.4.5 Language .....	39
4.4.6 Restoring Factory Settings .....	40
4.4.7 Self-Test .....	40
4.4.8 Manufacturer Information .....	40

# 1 Introduction

The C1 is an event controller of NovaStar specifically designed for video processing products and mainly used for live stage control.

The C1 is designed with 2 LCD screens. One is used to monitor input sources. The other, together with buttons on the panel, is used to configure the layer size, layer position, input source, output resolution, layer border and input cropping.

The C1 is also designed with a joystick and T-Bar. The joystick is used to precisely adjust the layer size and position. The T-Bar supports 1024 levels of layer transparency adjustment, finely controlling the transition effects of presets.

The C1 supports single control and multiple control modes. In multiple control mode, the C1 can control multiple devices to switch preset, fade the LED screen to black and freeze the display.

Thanks to the cool LED buttons, highly sensitive joystick and T-Bar, plus the 2 LCD screens, the C1 is extremely easy to operate, making live stage control most convenient.

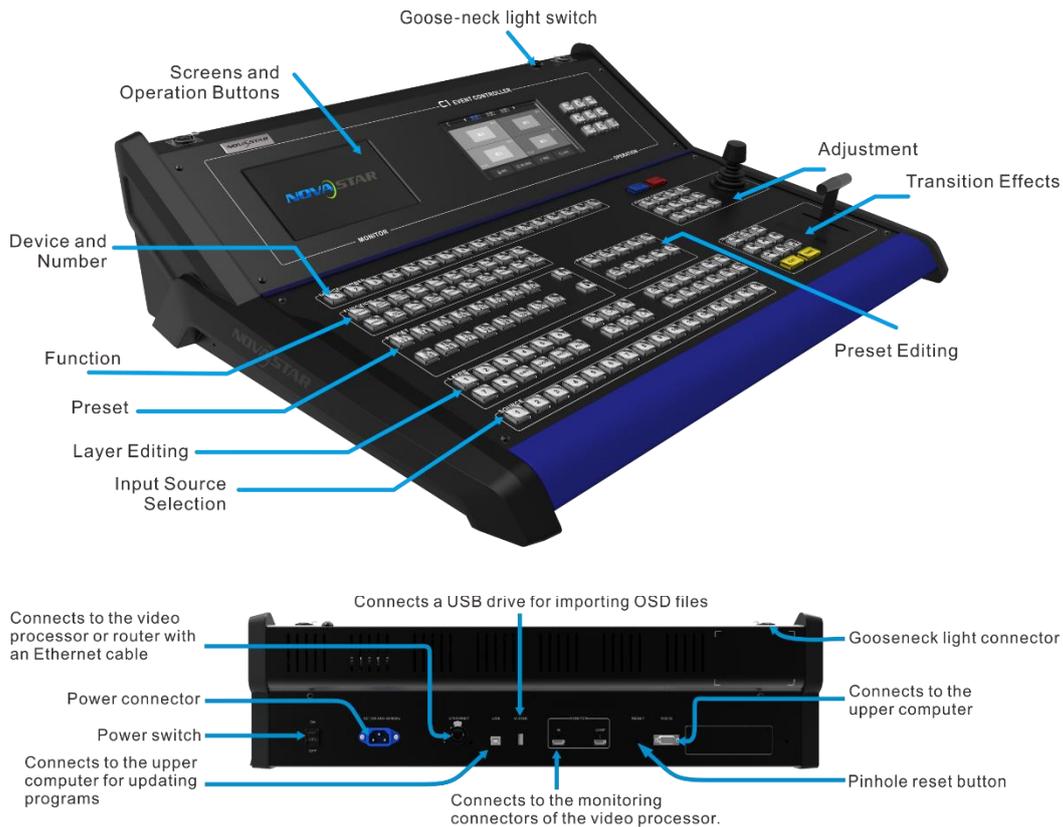
## 2 Hardware Introduction

### Note

Button operations mentioned in this document are as follows.

- Press: Press and immediately release the button.
- Hold down: Press and hold the button for 3 seconds or longer.

### 2.1 Appearance

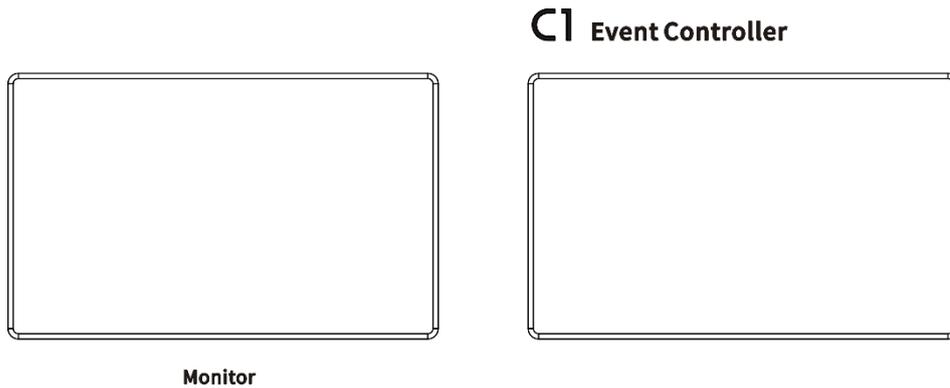


### 2.2 Front Panel

#### LCD Screens

The C1 is designed with 2 LCD screens for monitoring and operation configuration. The monitor screen on the left is used to monitor the input sources, PVW and PGM. You can view the input source content, real-time editing content in PVW, and current playback contents in PGM. The touch operation screen on the right is a visual operation platform. You can view related parameters, edit layers and perform other operations there.

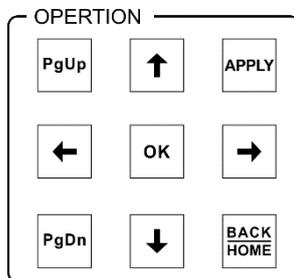
Figure 2-1 Monitor screen and touch operation screen



## Operation

The operation area includes navigation and confirmation buttons.

Figure 2-2 Operation buttons



- **PgUp**: Press this button to go to the previous page.
- **PgDn**: Press this button to go to the next page.
- **APP**: Press this button to apply current configuration parameters.
- **BACK HOME**: Press this button to exit current operation and return to the previous operation. Hold down this button to return to the homepage.
- **OK**: Press this button to confirm an option or operation.
- **↑ / ↓ / ← / →**: Press this button to move the cursor to a specified direction.

## Device/Number

When a target device is selected by pressing a number button corresponding to the device, the number button turns green.

When you are setting parameters on the touch operation screen, buttons 1–10 function as numeric buttons for you to enter numbers. Pressing the **BACKSPACE** button deletes the entered numbers.

Figure 2-3 Number buttons



Button indicator description:

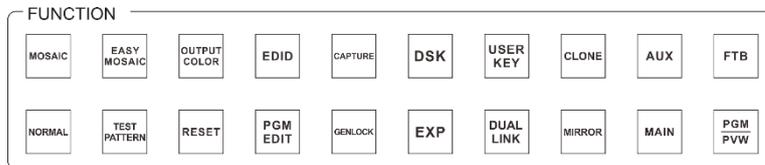
- **Red**: The connected device is offline.
- **Green**: In multiple control mode, the device is currently selected. You can view the preset information saved in the device. The indicator will turn yellow if you press the button again.
- **Yellow**: The device is connected.
- **Off**: The device is not connected.

## Function

In the function area, you can select mosaic mode, adjust output color, save layer parameters, select test pattern, fade the LED screen to black, enter the programming page, etc.

In multiple control mode, only the **FTB** and **Normal** buttons can be used. Other buttons are disabled.

Figure 2-4 Function buttons



- **MOSAIC:** Press this button to enter the mosaic screen.
- **EASY MOSAIC:** Press this button to enter the easy mosaic page.
- **OUTPUT COLOR:** Press this button to enter the output color adjustment page.
- **EDID:** Press this button to enter the page of setting input source resolution.
- **CAPTURE:** Press this button to capture an image of the input source, PVW or PGM, and save the image as BKG.
  - Capturing an image of input source
 

Press the **Capture** button first. When the button flashes green, press the source number button corresponding to the target input source. After the image is captured, the system jumps to the image saving page on the touch operation screen. You can choose to save the image as BKG.
  - Capturing an image of PVW/PGM
 

Press the **Capture** button first. When the button flashes green, press the **PVW/PGM** button in the **FUNCTION** area to capture an image of current PGM content, or hold down the **PVW/PGM** button to capture an image of current PVW image. After the image is captured, the system jumps to the image saving page on the touch operation screen. You can choose to save the image as BKG.
- **DSK:** Press this button to enter the color keying configuration page.
- **USER KEY:** Press this button to save layer parameters.
- **CLONE:** Press this button to copy a layer.
  - Press a layer button, or select a layer on the right LCD screen and then press **CLONE** button to clone a layer for the selected layer. The size of the cloned layer is the same as that of the original layer, and the two layers are in a horizontal symmetry position with the LED screen center as reference point.
  - When you move the original layer or the cloned layer, the two layers will move vertically together.
  - When you adjust the size of the original layer or the cloned layer, the two layers will always keep the same size.
  - The original layer and the cloned layer should not be on the screen loaded by the same port.
  - When the original layer is selected, the indicator of the corresponding layer button is green. When the cloned layer is selected, the indicator turns red.
  - The input source and image quality of the two layers are always the same.
  - When the mosaic mode is 1×2, 1×3 or 1×4, layer cloning is supported.
- **AUX:** Press this button to enter the page of setting auxiliary output.
- **FTB:** Press this button to fade the LED screen to black.
- **NORMAL:** Press this button to go back to normal display.
- **TEST PATTERN:** Press this button to enter the test pattern settings page.
- **RESET:** Press this button to reset values of parameters currently set on the touch operation screen.
- **PGM EDIT:** Press this button to enable or disable PGM image editing.

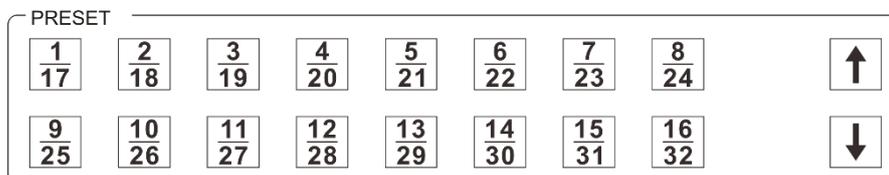
When you press the **PGM EDIT** button, the button turns green and PGM editing is enabled. At this time, the PGM content is displayed in the editing area on the touch operation screen. If you press the **PGM EDIT** button again, the button indicator goes off and PGM editing is disabled. At this time, the PVW content is displayed in the editing area.

- **GENLOCK**: Press this button to enter the Genlock settings page.
- **EXP**: Press this button to enable or disable cascade mode.
- **DUAL LINK**: Press this button to enable or disable dual-link output mode.
- **MIRROR**: Press this button to mirror the layer image horizontally.
  - When you select a layer on the touch operation screen and then press **MIRROR** button to create another layer of the selected layer. The size of the mirrored layer is the same as that of the original layer, and the two layers are in a horizontal symmetry position with the LED screen center as reference point. However, the two layer images are horizontally reversed.
  - When you move the original layer or the mirrored layer, the two layers will move vertically together.
  - When you adjust the size of the original layer or the mirrored layer, the two layers will always keep the same size.
  - The original layer and the mirrored layer should not be on the screen loaded by the same port.
  - When the original layer is selected, the indicator of the corresponding layer button is green. When the mirrored layer is selected, the indicator turns red.
  - The input source and image quality of the two layers are always the same.
  - When the mosaic mode is 1×2, 1×3 or 1×4, layer mirroring is supported.
- **MAIN**: Press this button to enter the programming page.
- **PGM/PVW**: Press this button to select PGM and hold down the button to select PVW. This button mainly works with the **CAPTURE** button to capture an image the PGM or PVW, or works with the **AUX** button to set the PGM or PVW as the source of AUX output.

## Preset

The C1 supports up to 32 presets. When a preset is selected by pressing the corresponding preset button, the button turns green.

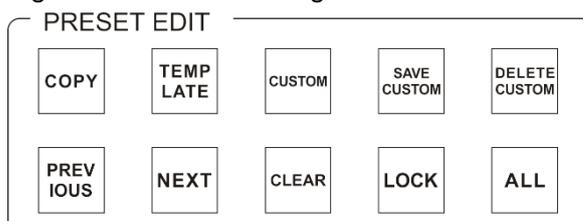
Figure 2-5 Preset selection buttons



- When the button is in yellow, the corresponding preset has layer data. In multiple control mode, it indicates the corresponding preset of each connected device has layer data.
- When the button is in red, the corresponding preset uses a template. In multiple control mode, it indicates the corresponding preset of one or several connected devices has no data.
- When the button is in green, the corresponding preset is being used.
- : When the button indicator is green, preset 1–16 can be selected.
- : When the button indicator is red, preset 17–32 can be selected.

## Preset Edit

Figure 2-6 Preset editing buttons



- **COPY**: Press this button to copy the data of the selected preset to another preset.

Press the **COPY** button first. At this time, the **COPY** button flashes yellow and the buttons of the presets that have layer data also flash yellow. Then, press to select a preset and a target preset in the **PRESET**

area respectively. At this time, the preset data of the first select preset is copied to the second selected preset.

- **TEMPLATE:** Press this button to apply a standard preset template.

Press the **TEMPLATE** button first. At this time, the **TEMPLATE** button flashes yellow and the preset buttons that flash red in the **PRESET** area are buttons of standard preset templates. Then, press one preset template button to select a template. The selected template will be applied to current editing area.

- **CUSTOM:** Press this button to apply the custom preset.

Press the **CUSTOM** button first. At this time, the **CUSTOM** button flashes yellow and the preset buttons that flash yellow in the **PRESET** area are buttons of custom presets. Then, press a custom preset button. The selected custom preset will be applied to current editing area.

- **SAVE CUSTOM:** Press this button to save the data in current editing area as a custom preset.

Press the **SAVE CUSTOM** button first. At this time, the button flashes yellow. Then, press a preset button in the **PRESET** area. The data in current editing area will be save to the select preset as a custom preset.

- **DELETE CUSTOM:** Press this button to delete a custom preset.

Press the **DELETE CUSTOM** button first. At this time, the **DELETE CUSTOM** button flashes yellow and the buttons of saved custom presets in the **PRESET** area flash yellow. Then, press a custom preset button. The selected custom preset will be deleted.

- **PREVIOUS:** Press this button to go to the previous preset.
- **NEXT:** Press this button to go to the next preset.
- **CLEAR:** Hold down this button to clear the parameters of the selected preset.
- **LOCK:** Hold down this button to lock the buttons in the **PRESET** area and **PRESET EDIT** area.
- **ALL:** Press this button to select all the custom presets. You can use this button and the **DELETE CUSTOM** together to delete all the custom presets at once.

---

#### Note:

In multiple control mode, the **Preset Edit** buttons are disabled.

---

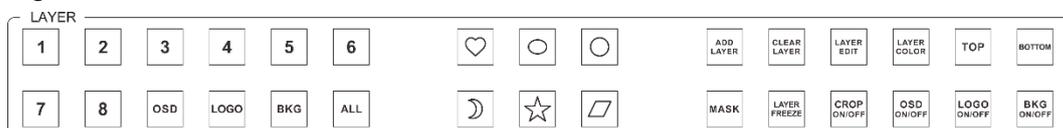
## Layer

The C1 supports up to 8 layers and 1 BKG. The layer buttons represent the numbers of the layers. When you press one of those buttons, the corresponding layer is selected and the button turns green. In multiple control mode, layer editing is not supported.

Button indicator descriptions:

- Off: The layer has been closed or the layer is not open.
- Yellow: The layer is opened but not selected.
- Green: The layer is opened and selected.
- Red: The cloned/mirrored layer is selected.

Figure 2-7 Preset selection buttons



- Number button: Press this button to select the corresponding layer.
- **BKG:** Press this button to select the BKG layer.
- **ALL:** Press this button to select all the layers.
- 6 buttons of irregular layers: Press a button to set an irregular layer. Supported irregular layers include hart, oval, circle, new moon, star and diamond layers.
- **ADD LAYER:** Press this button to add a layer.

On the programming page, when you press the **ADD LAYER** button on the panel, a layer will be added to the PVW. The added layer size defaults to 800x600.

- **CLEAR LAYER:** Press this button to clear the selected layer. This button can also work with the **ALL** button to clear all the layers. If no layers are selected, every time when you press this button, a layer in the editing area will be cleared. The order of clearing is the front layer, the back layer, and then the layers from the back to the front.
- **LAYER EDIT:** Press this button to enter the editing page of the selected layer. On that page, you can view the layer No. layer priority, layer resolution and input source used by the layer. You can also change the layer size and position.
- **LAYER COLOR:** Press this button to enter the lay color adjustment page where you can set the brightness, contrast, saturation and hue.
- **TOP:** Press this button to bring the selected layer to front.
- **BOTTOM:** Press this button to send the selected layer to back.
- **MASK:** Press this button to enter the layer mask settings page.
- **LAYER FREEZE:** Press this button to freeze the selected layer.
- **CROP ON/OFF:** Press this button to enable or disable the function of cropping a single input source.
- **BKG ON/OFF:** Press this button to enable or disable the BKG function.

## Source

The number buttons 1–16 corresponds to 16 input sources. For the normal input source, when you press the corresponding input source button, the button turns green. If the input source becomes abnormal, or no input source is connected, when you press the input source button, the button turns red and after you release the button, the button goes back to the normal display status. To use any of the buttons in this area, you only need to press it. In multiple control mode, layer source switching is not supported and the input source buttons are disabled.

Figure 2-8 Input source buttons



Button status:

- Green: The input source is being used.
- Yellow: The input source is accessed to the device connected to the C1, but the source is not used.
- Off: No input source is accessed or the input source is abnormal.

## Lock

The buttons in this area can avoid accident caused by press on other buttons by mistake

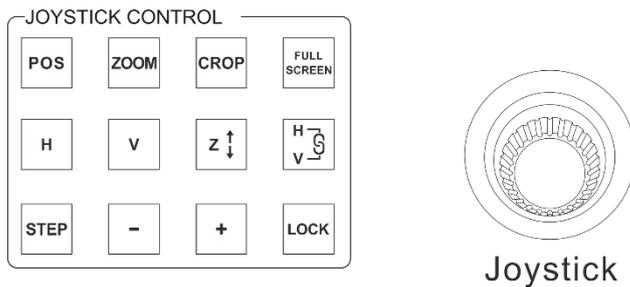
Figure 2-9 Buttons in lock area



- **ALL LOCK:** Hold down this button to lock all the buttons and the touch operation screen. When the button flashes and then turns highlighted, the lock operation takes effect.
- **FREEZE PGM:** Press this button to freeze the frame currently played in the PGM. After pressed, the button turns blue. The content in PVW can still be edited.

## Adjustment

Figure 2-10 Buttons in adjustment area



- **Joystick:** Move the joystick to adjust the layer size and position, etc., and rotate the knob to adjust the layer priority and set the size of image that you want to crop from an input source.
- **POS:** Press this button to enable/or disable the function of adjusting the layer position. This button works with the joystick. After pressed, the button turns green. When you have adjusted the position with the joystick and pressed this button again, the button light goes back to normal status.  
Select a layer on the touch operation screen and press the **POS** button. Then, move the joystick to adjust the layer position.
- **ZOOM:** Press this button to enable or disable the function of adjusting the layer size. This button works with the joystick. After pressed, the button turns green. When you have adjusted the layer size with the joystick and pressed this button again, the button light goes back to normal status.  
Select a layer on the touch operation screen and press the **ZOOM** button. Then, move the joystick to zoom the layer size. Move the joystick forward to zoom out the layer vertically, leftward to zoom out the layer horizontally, backward to zoom in the layer vertically, rightward to zoom in the layer horizontally.
- **CROP:** Press this button to crop an image of current input source. After pressed, the button turns green. When you have finished the cropping operation and pressed this button again, the button light goes back to normal status.  
Select a layer (accessed with available input source) on the touch operation screen and press the **CROP ON/OFF** button in the **Layer** area on the front panel to enable the layer cropping function. At this time, the **CROP ON/OFF** button turns to green and the input cropping page is displayed on the touch operation screen. Then, press the **CROP** button in this area. At last, on the touch operation screen, drag the sliders of **Width**, **Height**, **X** and **Y**, tap the **+** or **-** button, or enter numbers to adjust the layer size and position.
- **FULL SCREEN:** Press this button to make the selected layer displayed in full screen. When you press the button again, the layer size and position will be changed to the previous status.  
On the touch operation screen, select a layer and press the **FULL SCREEN** button. The layer will fill the entire mosaic screen where the layer belongs to.
- **H/V:** Press this button to select the direction of adjusting a layer by using the joystick. After pressed, the button turns green. When you have finished the operation with the joystick and pressed this button again, the button light goes back to normal status.
  - **H:** Press this button to enable only horizontal operations. When this button turns green, only horizontal adjustment operations will take effect on the layer no matter you move the joystick forward, backward, leftward or rightward.
  - **V:** Press this button to enable only vertical operations. When this button turns green, only vertical adjustment operations will take effect on the layer no matter you move the joystick forward, backward, leftward or rightward.
  - The **H** button and **V** button cannot be used at the same time.
- **Z:** Press this button to enable the function of adjusting the priority of a selected layer. This button works with knob of the joystick. After pressed, the button turns yellow. When you have finished the operation and pressed this button again, the button light goes back to normal status.  
On the touch operation screen, select a layer and press the **Z** button. Then, rotate the knob to adjust the layer priority.
- : Press the button to enable the function of adjusting a layer proportionally. After pressed, the button turns green. When you press this button again, the function is disabled.
  - When this button works with the **POS** button, you can move the joystick to adjust the layer position proportionally.

- When this button works with the **ZOOM** button, you can rotate the joystick knob to adjust the size proportionally.
- **STEP**: Press this button to set the step of moving the joystick. After pressed, the button turns green. When you have finished the operation and pressed this button again, the button light goes back to normal status.  
When you adjust the step, the specific step value is displayed on the top right corner of **Programming** page in real-time, such as **Step: 1**. The step value ranges from 1 to 7.
- **-/+**: Press one of these buttons to decrease or increase the joystick step by one pixel.

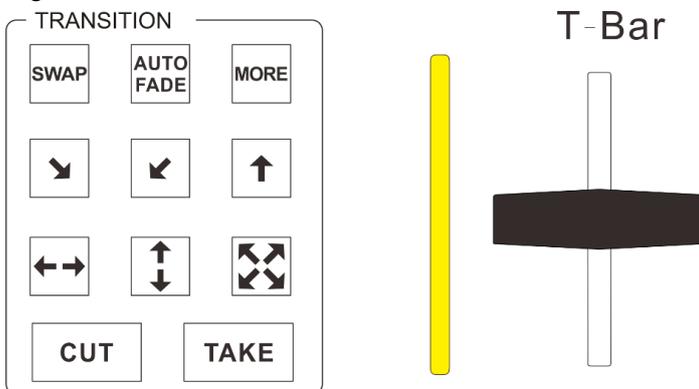
**Note:**

In multiple control mode, layer adjustment is not supported and the adjustment buttons are disabled.

## Transition

The transition effect buttons in this area will turn green if they are pressed. Other buttons will turn green after they are pressed and then the button lights go back to normal status after the buttons are released.

Figure 2-11 Buttons in TRANSITION area



- **SWAP**: Press this button to set the mode of interacting between PVW and PGM information as swapping.
- **AUTO FADE**: Press this button to set the transition effect as auto fade.
- **MORE**: Press this button to enter the effect selection page.
- **TAKE**: Press this button to send a layer from PVW to PGM with a transition effect.
- **CUT**: Press this button to send a layer from PVW to PGM without a transition effect.
- **T-Bar**: Move the T-Bar to manually control the interacting between PVW and PGM information. The T-Bar supports only the fade transition effect.

## 2.3 Rear Panel

Figure 2-12 Rear Panel



- **ON/OFF**: Power switch
- **AC 100-240 V-50/60 Hz**: AC power input
- **ETHERNET**: An Ethernet port connecting to a device to be controlled by the C1
- **USB**: A type-B USB port connecting to an upper computer to update the C1 program

- **U-DISK:** A type-A USB port connecting to a USB drive to upgrade the C1 program and import the BKG files
- **MONITOR IN:** An HDMI-type monitoring connector that connects to the monitoring connector of the device controlled by the C1
- **Monitor LOOP:** An HDMI-type monitoring loop output connector that connects to the monitoring connector of the device controlled by the C1. The C1 receives the input signal from the device and send the signal to another monitor.
- **RESET:** A pinhole reset button used to restart the C1

### 3 Applications

**Note**

The device must be powered off before connection.

Figure 3-1 C1 controlling one device

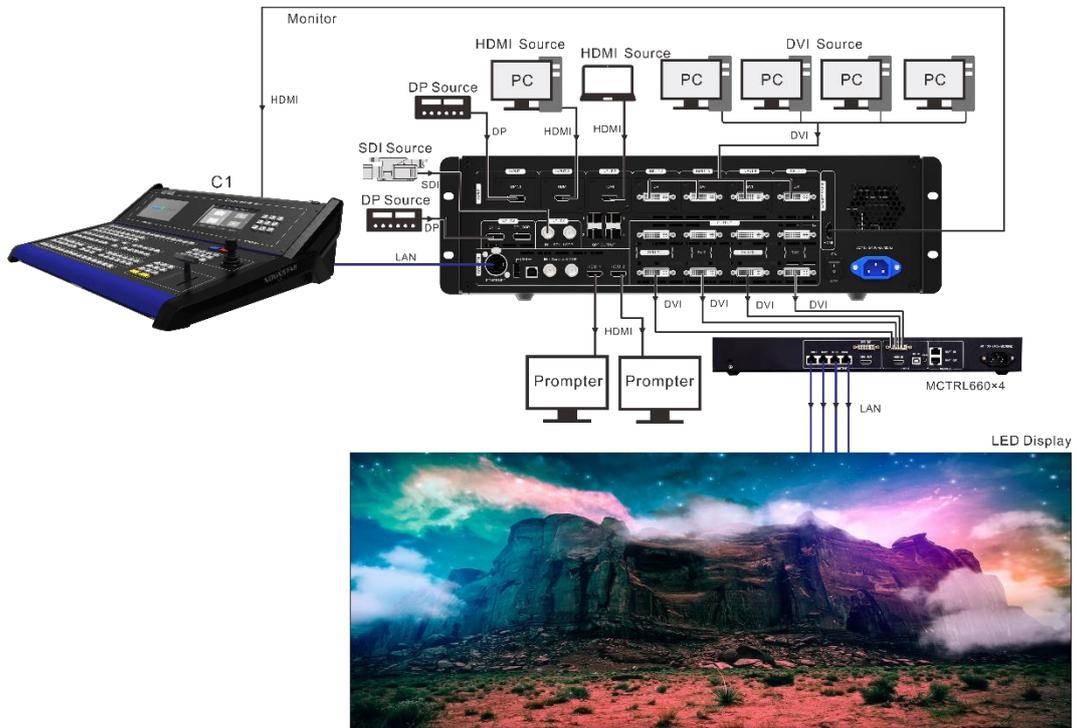
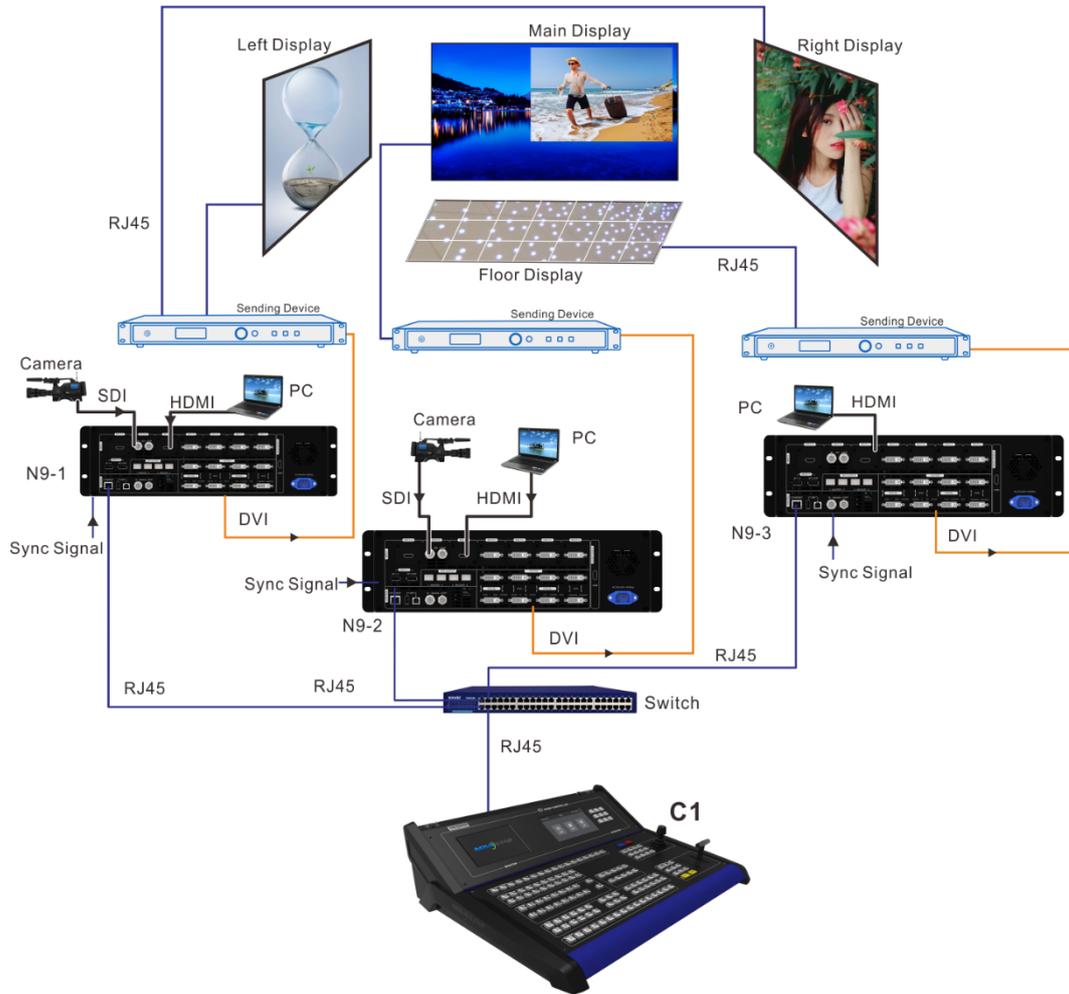


Figure 3-2 C1 controlling multiple devices



**Note:**

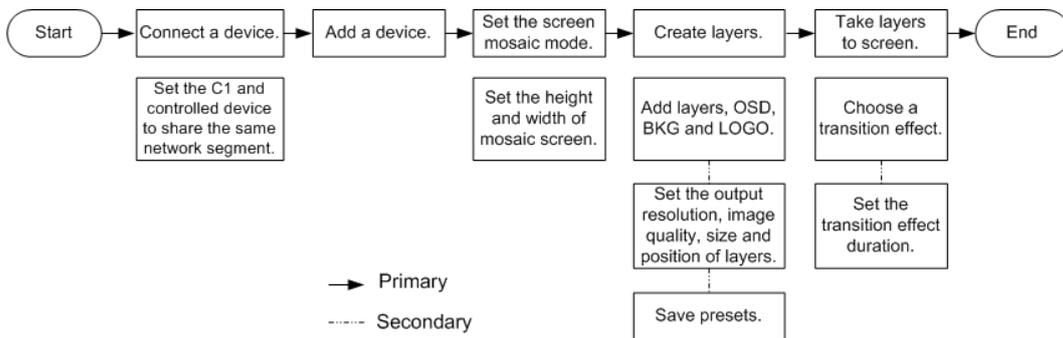
The C1 and its controlled devices must be on the same network segment.

## 4 Operations

The C1 has 3 major functions: configuration, programming and settings. These functions let you easily and quickly manage and control the processing devices.

- The configuration function allows you to add and delete devices, view input properties, set input EDID, view the information of the outputs, set output resolution, adjust output image quality, set test pattern and synchronization mode.
- The programming function allows you to choose presets, add layers, lock the touch operation screen, view layer properties, set the transition effect and duration, view layer information on the layer properties page, adjust input cropping, and adjust input image quality.
- The settings function includes viewing device status, program update, communication settings, language setting, restoring factory settings, and viewing manufacturer information.

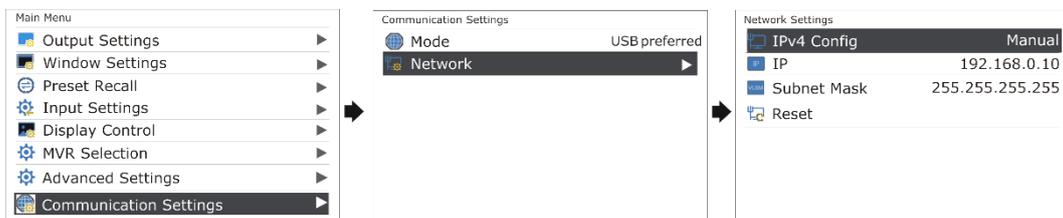
Figure 4-1 Operation flowchart



### 4.1 Preparation

- When the C1 controls one device, connect the control port of the device to the Ethernet port of the C1 through Ethernet cable and then set the IP address of the device (taking the N9 for example). See the procedure in the following figure.
- When the C1 controls multiple devices, connect the controlled devices to the C1 through router or switch, and ensure the C1 and the controlled devices are on the same network segment.

Figure 4-2 Setting IP address of controlled device



Set the IP address of the C1 and make sure the C1 and the N9 are on the same network segment. To set the IP address, choose **Menu > Settings > Communication Settings** to set the IP, subnet mask, and gateway on the communication settings page.

Figure 4-3 Setting IP address of C1

Cancel	Communication	Apply
DHCP		<input checked="" type="checkbox"/>
IP	192 . 168 . 0 . 10	
Mask	255 . 255 . 255 . 0	
Gateway	192 . 168 . 0 . 1	

## 4.2 Configuration

The configuration function allows you to add and delete devices, view input properties, set input EDID, view the information of the outputs, set output resolution, adjust output image quality, set test pattern and synchronization mode.

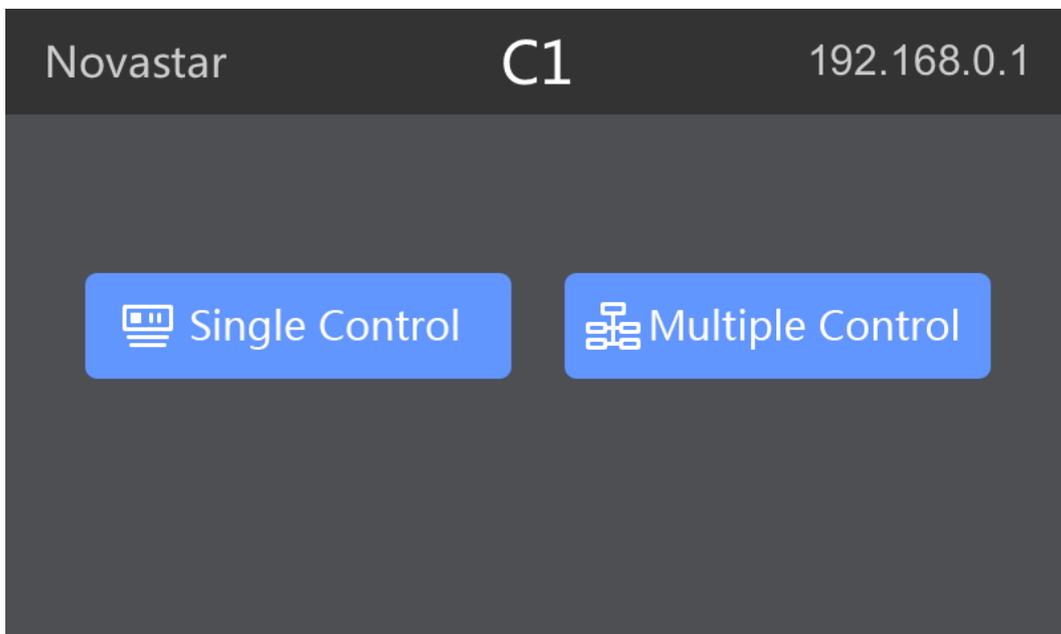
### 4.2.1 Adding Devices

#### Single Control Mode

In this mode, the C1 controls one seamless switcher device.

Step 1 On the home screen, tap **Configuration** to enter the configuration page.

Figure 4-4 Configuration page



Step 2 Tap **Single Control** to enter the single control mode.

The system will automatically search for the online devices and show them in an order.

Figure 4-5 Device list

Cancel	Add List		Add
<input type="checkbox"/>	Select All		
<input checked="" type="checkbox"/>	1	N9	192.168.0.176
<input checked="" type="checkbox"/>	2	N9	192.168.0.176
<input checked="" type="checkbox"/>	3	N9	192.168.0.176
<input type="checkbox"/>	4	N9	192.168.0.176

Step 3 Select the device you want to add and tap **Add**.

After the device is added, the corresponding device number button on the front panel turns yellow, indicating the online device is added.

Figure 4-6 Device list

<		Device List		🗑️
🔍 Search				
●	1	N9	192.168.0.106	>
	2	N9	192.168.0.107	>
	3	N9	192.168.0.108	>

Step 4 Tap on the added device.

The C1 will connect to the device and automatically sync device data with it. The corresponding button in **DEVICE/NUMBER** area on the front panel turns green, but other corresponding buttons of online devices in the area stay yellow.

---

**Note:**

Up to 50 devices can be found and up to 16 devices can be added.

On device list page, tap the removing button (icon) to select the devices to be removed, and then tap the button again to remove the selected devices.

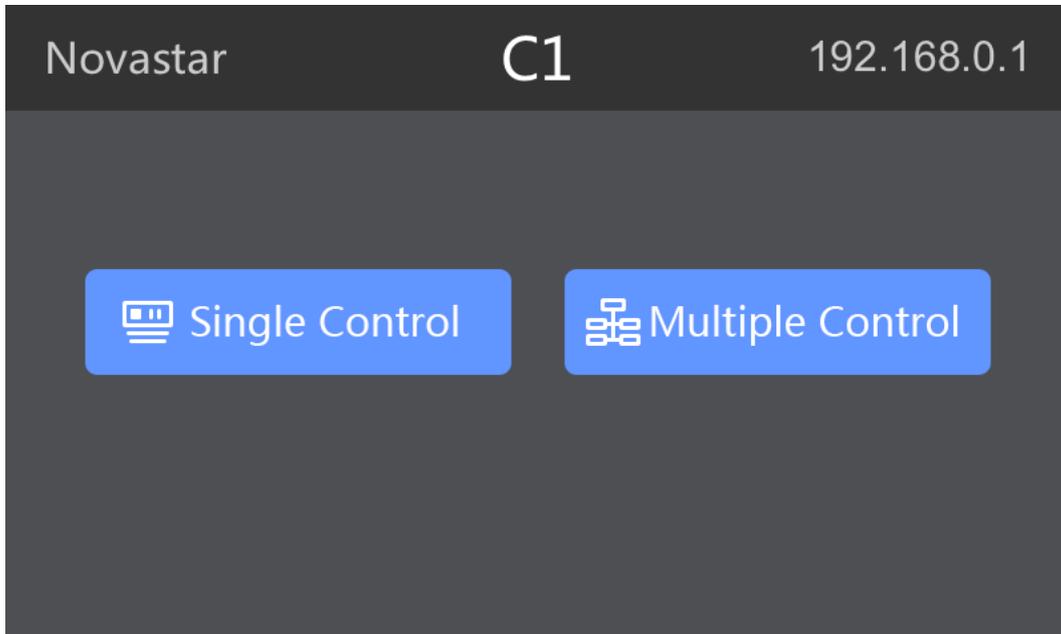
---

## Multiple Control Mode

In this mode, the C1 controls multiple devices at the same time. You can switch preset, fade the LED screen to black and freeze the currently played frame of the multiple controlled devices simultaneously through the C1.

Step 1 On the home screen, tap **Configuration** to enter the configuration page.

Figure 4-7 Configuration page



Step 2 Tap **Multiple Control** to enter the multiple control mode.

The system will automatically search for the online devices and show them in an order.

Step 3 Select the devices you want to add and tap **Apply**.

After the devices are added, the corresponding device number buttons on the front panel turn yellow, indicating the online devices are controlled.

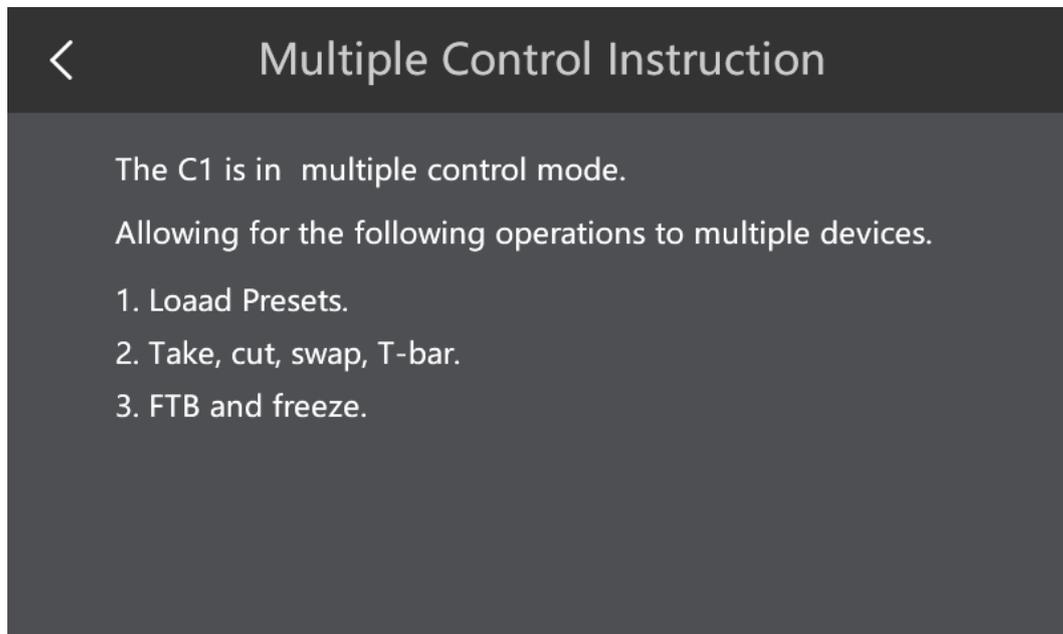
Figure 4-8 Multiple control mode



Step 4 The C1 enters the **Multiple Control Instruction** page.

In the multiple control status, the corresponding device number buttons in **DEVICE/NUMBER** area on the front panel turn yellow.

Figure 4-9 Multiple control mode

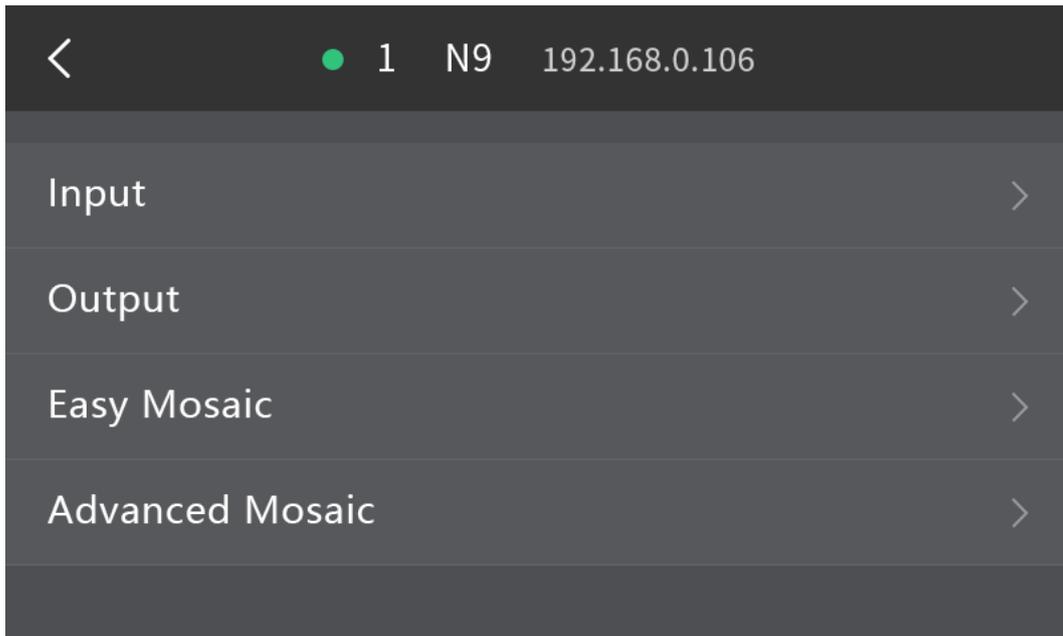


- In multiple control mode, you can only press the buttons to operate the devices. The tap operations are disabled.
- After you press **FTB** in **FUNCTION** area, all the screens connected to the control devices will fade to black simultaneously. If you press **FTB** again or press **Normal**, the screen will resume playback.
- In multiple control mode, after you press a button in yellow in **DEVICE/NUMBER** area, the button will turn green. At this time, you can check the connection status of the corresponding device and the preset saving information. If you press the green button, it will return to the connection status of multiple control mode.
- Description of preset loading in multiple control mode:
  - If the same preset of all the controlled devices is empty (the corresponding button is off), that preset cannot be loaded.
  - If the same preset of some controlled devices is empty (the corresponding button is in red), only the presets that are not empty can be loaded.
  - If the same preset of all the controlled devices is not empty (the corresponding button is in yellow), all the presets can be loaded.
- After the presets are loaded, you can press **TAKE** or **CUT**, or push the T-Bar to switch the preset.

#### 4.2.2 Configuring Device Properties

On the device list page, tap  to enter the device properties page. Or select a device, and then tap **OK** in the **OPERATION** area to enter the device properties page. Settings of the device properties include **Input**, **Output**, **Easy Mosaic**, and **Advanced Mosaic**.

Figure 4-10 Device properties



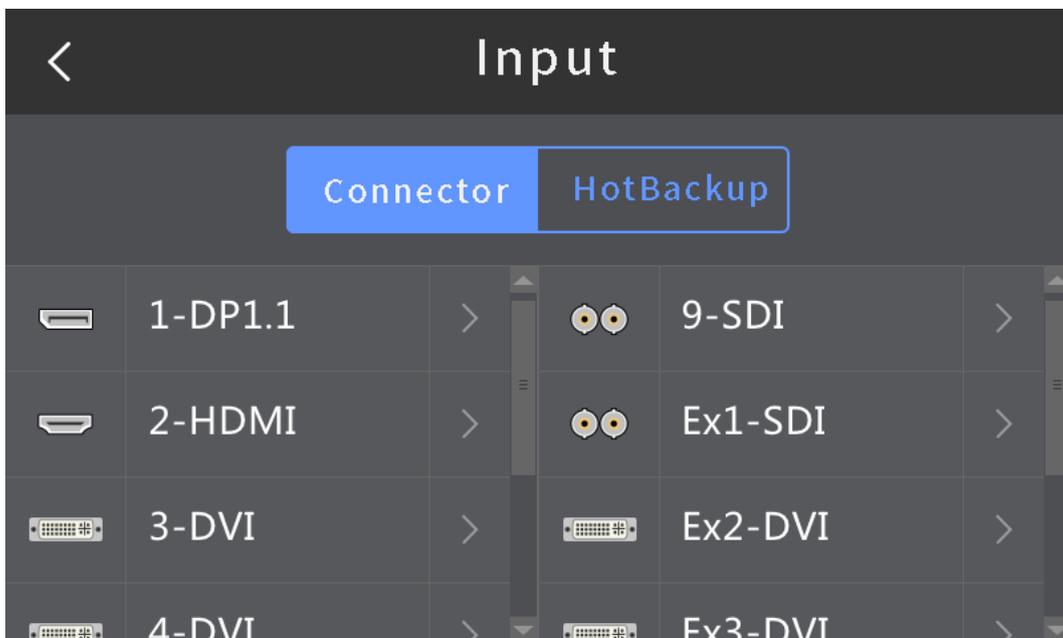
#### 4.2.2.1 Input

##### Connector

On the connector page, you can view the basic properties of the inputs corresponding to the connectors, and adjust the EDID of inputs. When the N9 is connected with the VE7, the input sources from the VE7 will be displayed on the N9 with an **Ex** in front of each input source name.

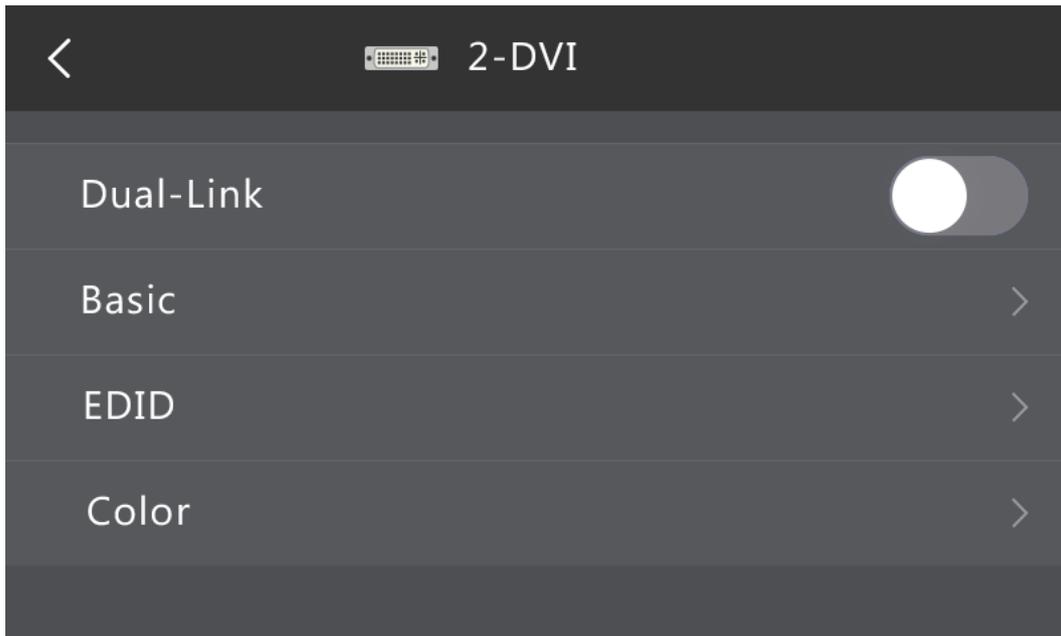
Step 1 Tap **Input** to enter the list of connectors.

Figure 4-11 Input source selection



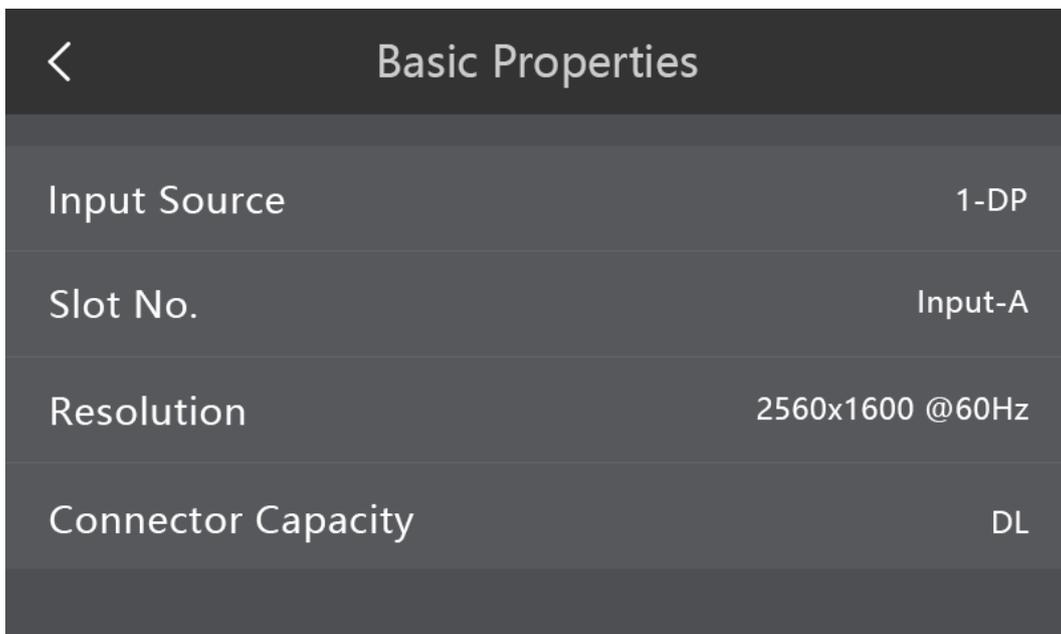
Step 2 Tap > after the input source, to enter the input source properties page, as shown in the figure below.

Figure 4-12 Setting input source properties



- Dual link  
The VE7 supports single link and dual link modes of input connector. When it is set to dual link mode, a dual link input source should be accessed.
- Basic properties  
Basic properties include source type, slot No., resolution and connector capacity. This is for viewing basic information of current connector.
- Connector capacity: Denotes the level of resolution, including SL, DL and 4K. SL denotes 1920×1080, DL denotes 3840×1080, and 4K denotes 3840×2160.

Figure 4-13 Basic properties

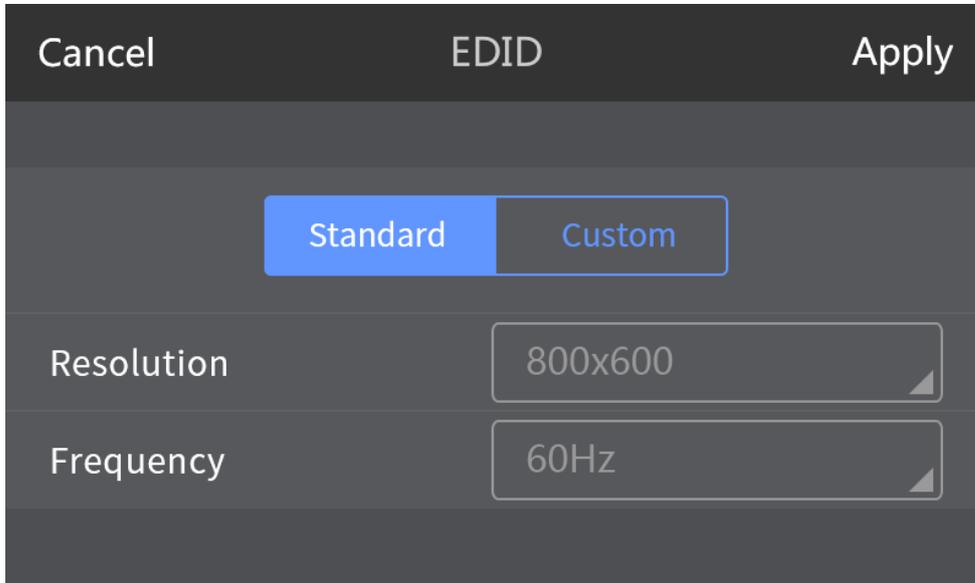


- EDID  
This includes settings of resolution and refresh rate. You can either choose a standard resolution and refresh rate, or customize them. When the settings are done, tap **Apply**.

Standard resolutions: 800x600, 1024x768, 1280x720, 1280x768, 1280x800, 1280x1024, 1366x768, 1440x900, 1600x1200, 1680x1050, 1920x1080, 1920x1200, 1920x2160, 2048x640, 2048x1152, 2048x1536, 2304x1152, 2560x816, 2560x960, 2560x1600, 3840x1080, 3840x1600, 3840x2160

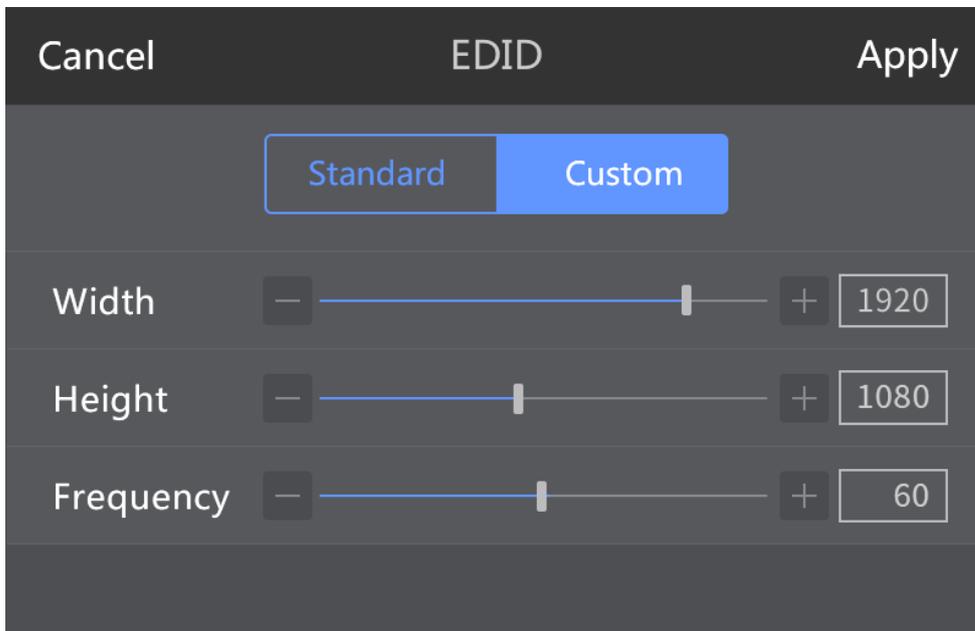
Standard refresh rates: 60Hz, 75Hz, 120Hz

Figure 4-14 Standard EDID



You can drag the sliders, tap the + or – button, or enter numbers to customize EDID.

Figure 4-15 Custom EDID



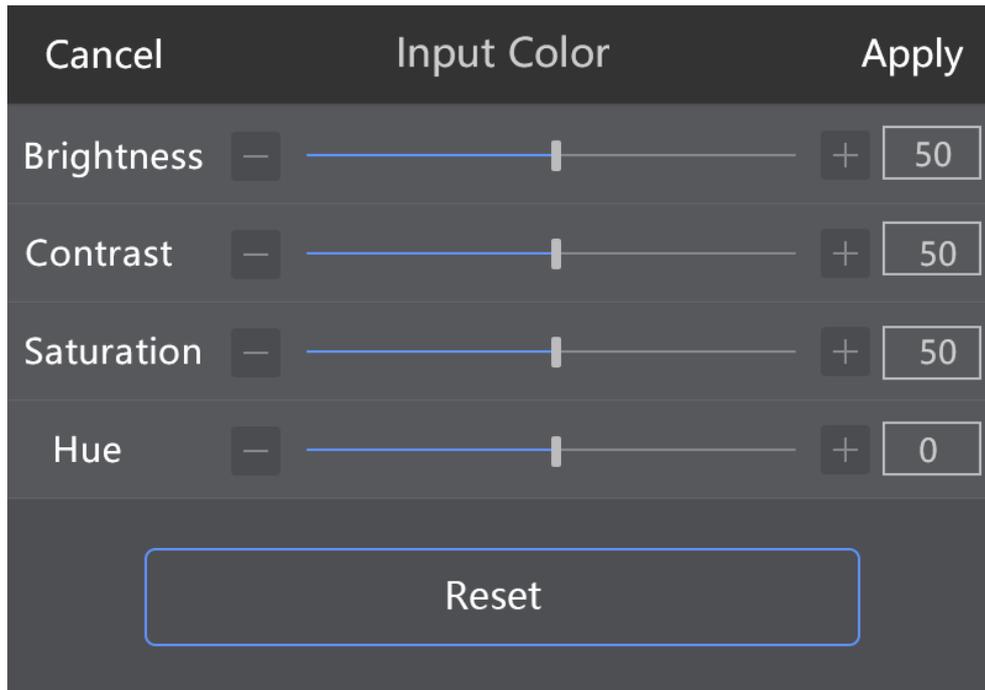
**Note:**

You can also press the **RESET** button in the **FUNCTION** area on the front panel to reset the parameters displayed on current page.

- Input color

On the **Input Color** page, you can adjust the overall brightness, contrast, saturation and hue of the input source by dragging the sliders, tapping the + or – button, or entering numbers. When you tap **Reset**, parameters on this page can be reset to the default value 50.

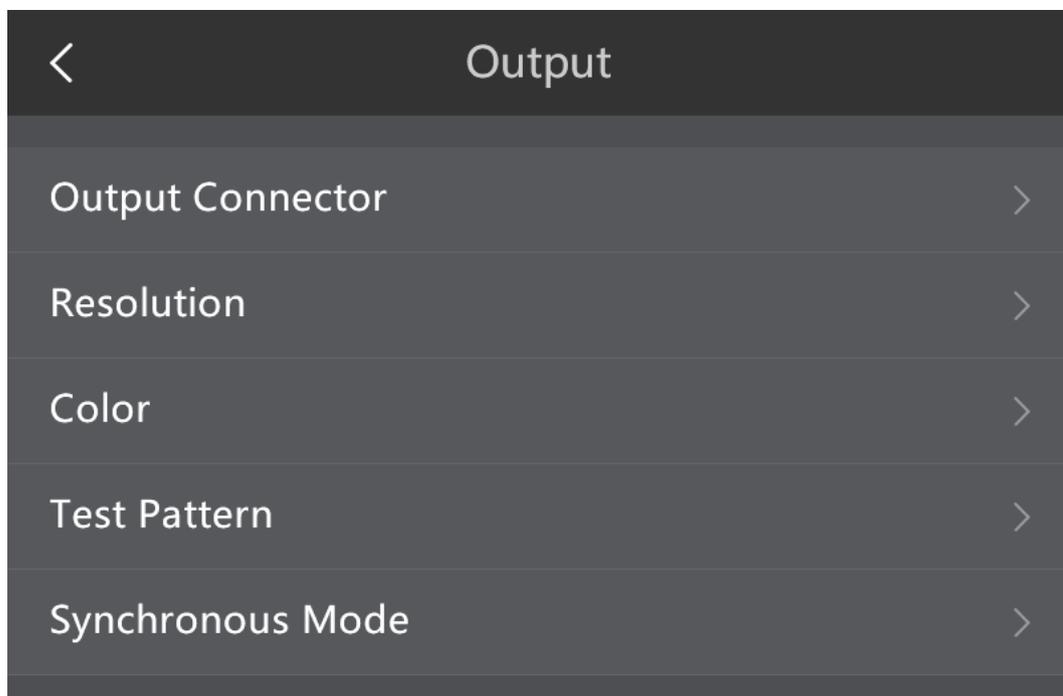
Figure 4-16 Input color adjustment



#### 4.2.2.2 Output

Output settings allow you to view the information of output connectors, set output resolution, adjust output image quality, set test pattern and synchronization mode.

Figure 4-17 Output settings



- Output connectors

Tap **Output Connector** and select the target output connector to view the name, slot No., resolution and connector capacity of the output connector.

Figure 4-18 Output connectors

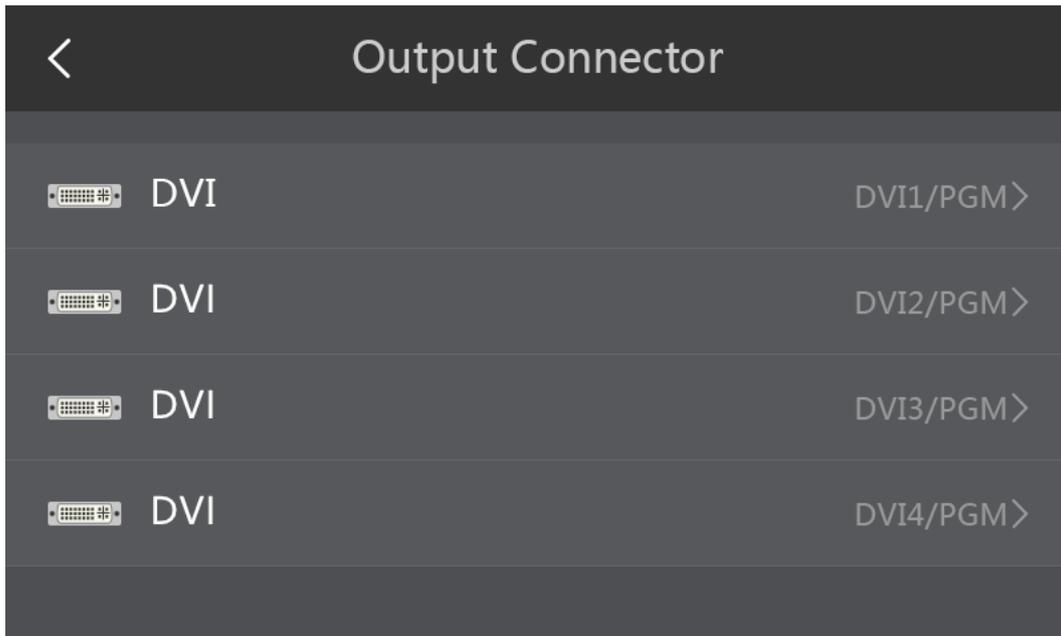
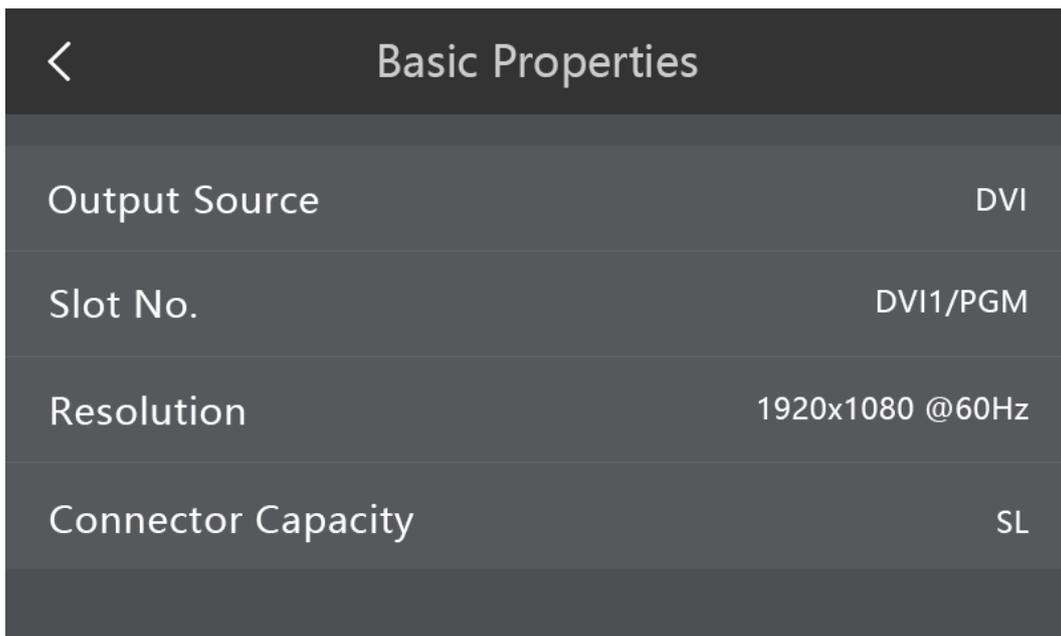


Figure 4-19 Output properties



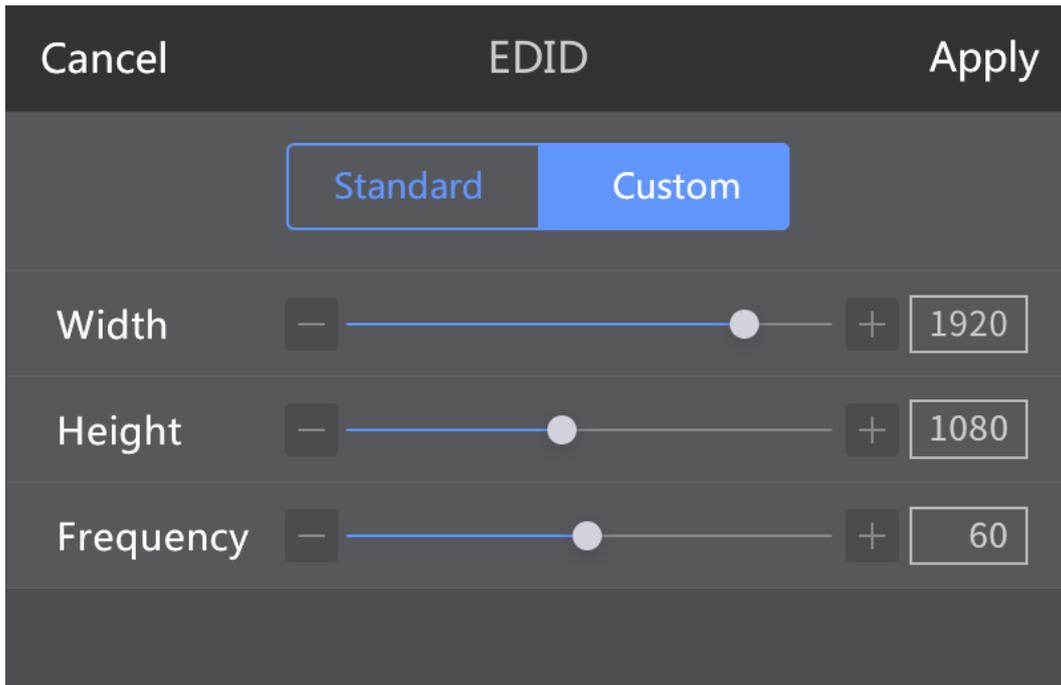
- Resolution

This includes settings of resolution and refresh rate. You can either choose a standard resolution and refresh rate, or customize them. The standard resolutions and refresh rates are predefined in the C1. You can also drag the sliders, tap the + or – button, or enter numbers to customize a resolution and refresh rate. Tap **Apply** after the settings are done.

Standard resolutions: 800x600, 1024x768, 1280x720, 1280x768, 1280x800, 1280x1024, 1366x768, 1440x900, 1600x1200, 1680x1050, 1920x1080, 1920x1200, 1920x2160, 2048x640, 2048x1152, 2048x1536, 2304x1152, 2560x816, 2560x960, 2560x1600, 3840x1080, 3840x1600, 3840x2160

Standard refresh rates: 60Hz, 75Hz, 120Hz

Figure 4-20 Custom resolution



- Color

On the **Output Color** page, you can adjust the overall brightness, contrast, saturation and hue of the output by dragging the sliders, tapping the **+** or **-** button, or entering numbers. When you tap **Reset**, parameters on this page can be reset to the default value 50.

Figure 4-21 Color



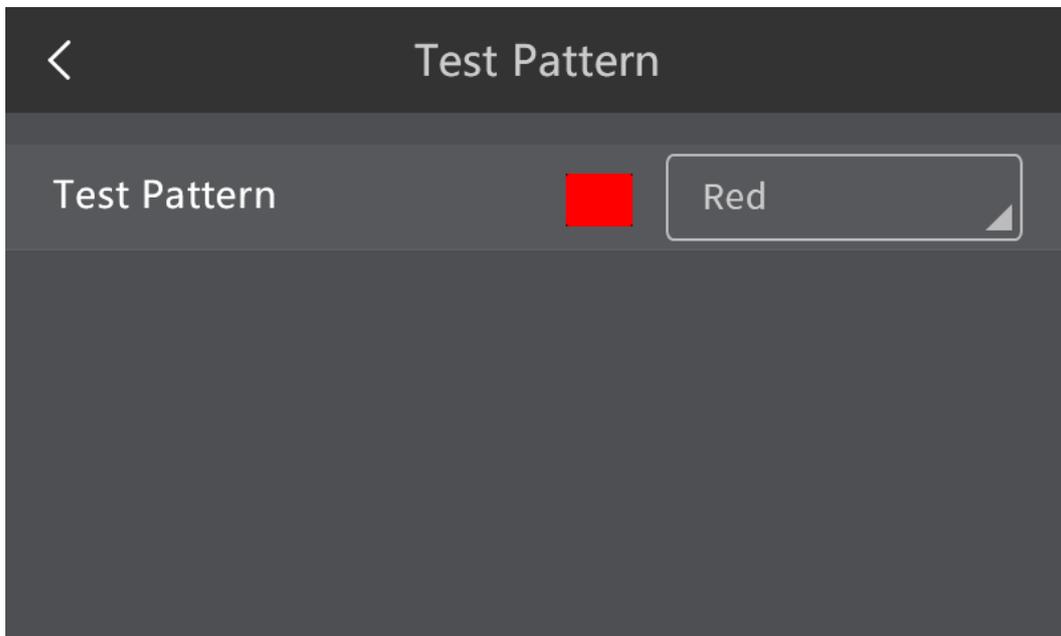
**Note:**

You can also press the **RESET** button in the **FUNCTION** area on the front panel to reset the parameters displayed on current page.

- Test Pattern

On this page, you can tap to expand the test pattern list to choose a test pattern. After you tap the **Normal** button in the settings area, the LED display will go back to normal display.

Figure 4-22 Test pattern



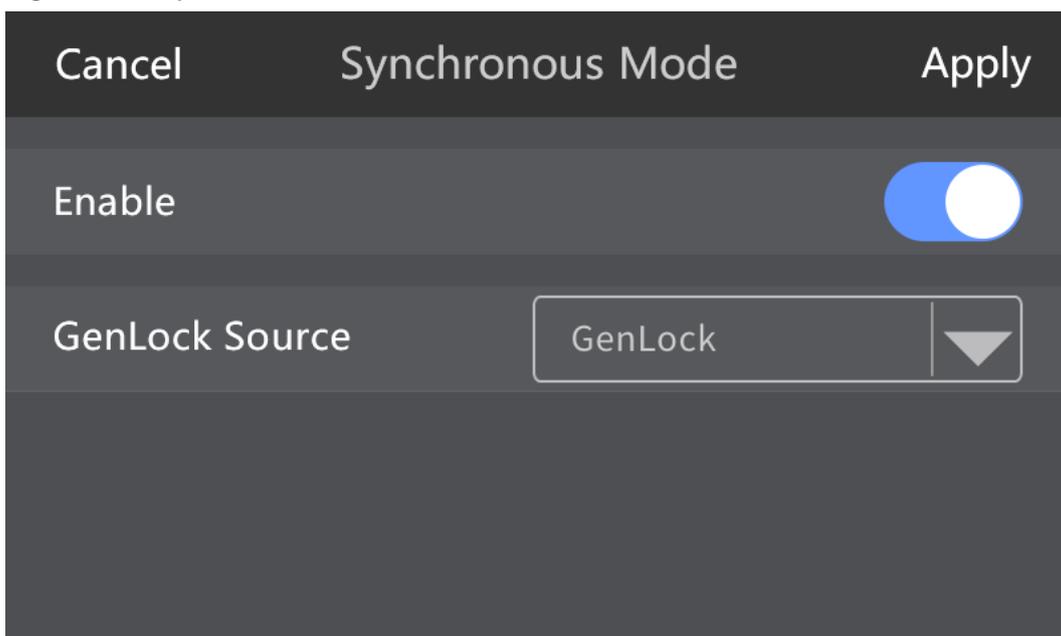
**Note:**

You can press the **TEST** button in the **FUNCTION** area on the front panel to enter the test pattern settings page.

- Synchronous mode

On the **Synchronous Mode** page, you can enable the synchronous mode to make the playback smoother. You can choose either an input source or the Genlock source as the synchronous source. When you choose the former, current synchronous mode is internal synchronization. When you choose the latter, current synchronous mode is external synchronization.

Figure 4-23 Synchronous mode



**Note:**

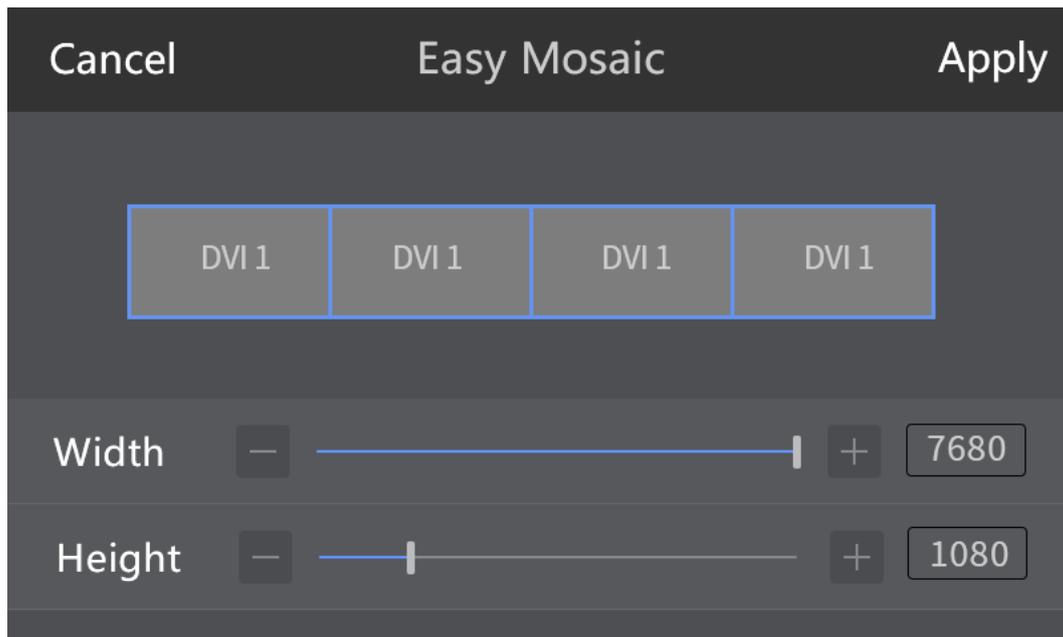
You can also use the buttons in the input source area on the front panel to set the synchronous mode. For detailed operations, see description of buttons in the input source area.

### 4.2.2.3 Fast Mosaic

The C1 supports fast mosaic. By entering the screen width and height, the system will come up with a mosaic plan automatically.

Step 1 Tap > next to **Fast Mosaic** to enter the fast mosaic page.

Figure 4-24 Fast mosaic



You can press the **EASY MOSAIC** button in the **FUNCTION** area on the front panel to enter this page.

Step 2 Drag the sliders, tap the + or – button, or enter numbers to set the overall screen width and height.

Step 3 Tap **Apply** and the system will finish fast screen mosaic automatically.

### 4.2.2.4 Advanced Mosaic

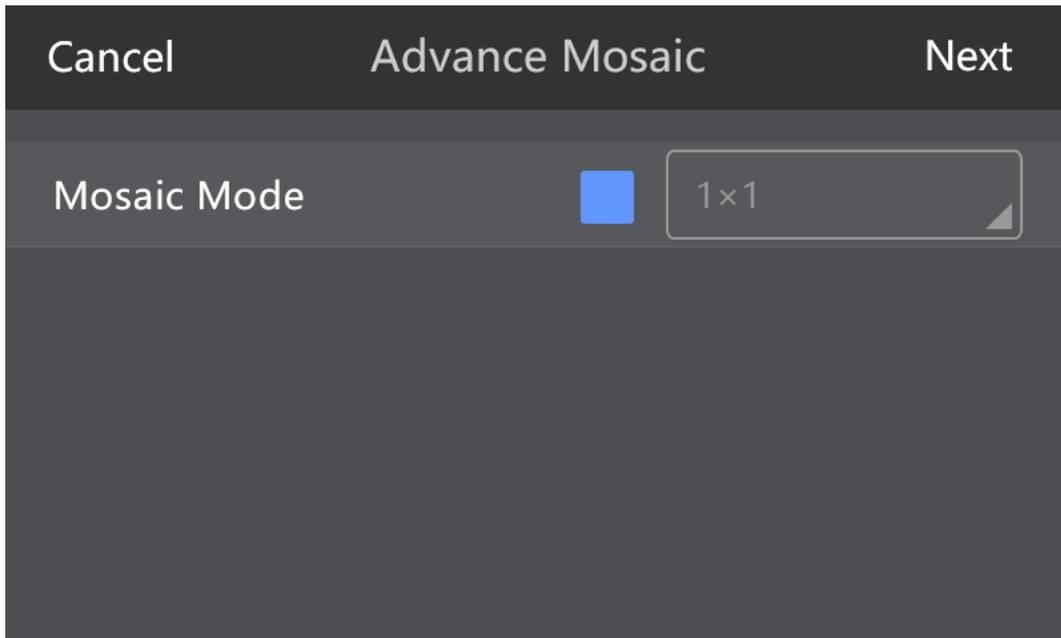
This mosaic mode allow you to select a proper mosaic mode according to the screen size.

Step 1 Tap the drop-down box next to **Mosaic Mode** and choose a mosaic mode from the drop-down list.

Mosaic mode: 1×1, 1×2, 2×1, 2×2, 1×3, 3×1, 1×4, 4×1

Step 2 Tap **Next**.

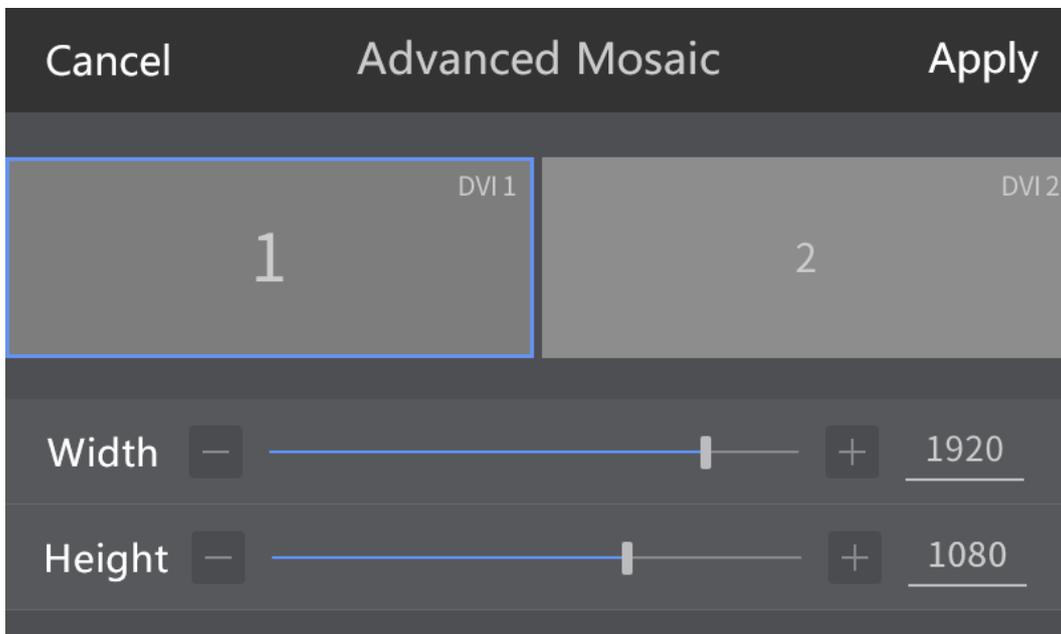
Figure 4-25 Selecting mosaic mode

**Note:**

You can press the **MOSAIC** button in the **FUNCTION** area on the front panel to enter this **Advanced Mosaic** page.

- Step 3 Select a mosaic screen and drag the sliders, tap the **+** or **-** button, or enter numbers to adjust the width and height of the mosaic screen. After adjustment, tap **Apply**.

Figure 4-26 Adjusting mosaic screen



## 4.3 Programming

The programming function allows you to edit and clone a layer, save, load and clear preset data, set transition effects and BKG.

**Note:**

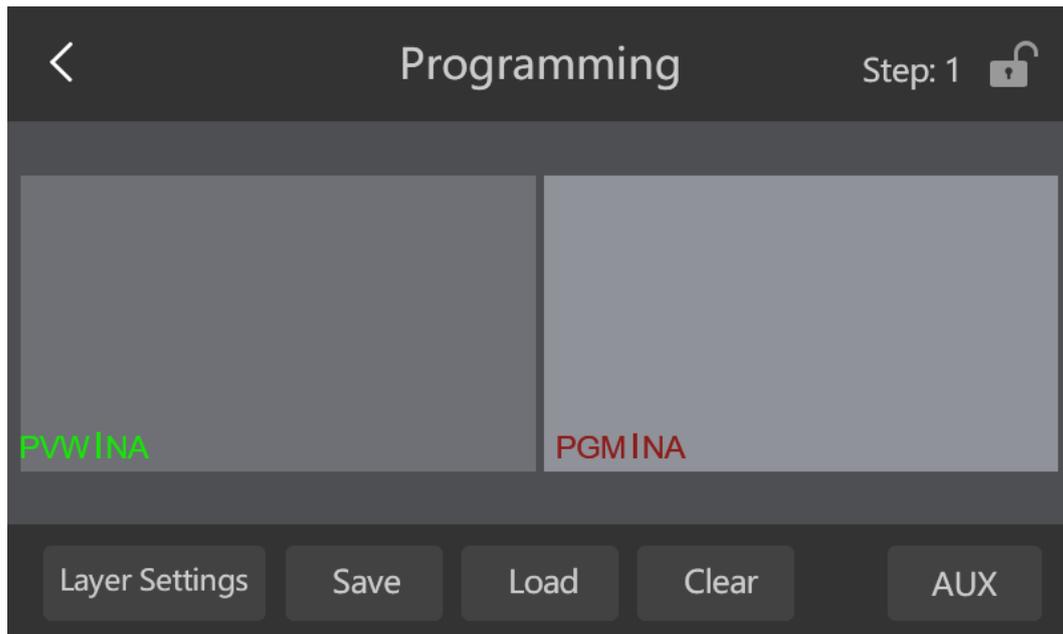
For the functions not supported by the device connected to the C1, the function buttons on the C1 will be unavailable.

### 4.3.1 Layer

#### Adding Layers

Step 1 Tap **Programming** to enter the programming page.

Figure 4-27 Programming page



Step 2 On the programming page, when you press the **ADD LAYER** button in the **LAYER** area on the panel, a layer that defaults to 800x600 will be added to the PVW.

Figure 4-28 Adding layers



## Clearing Layers

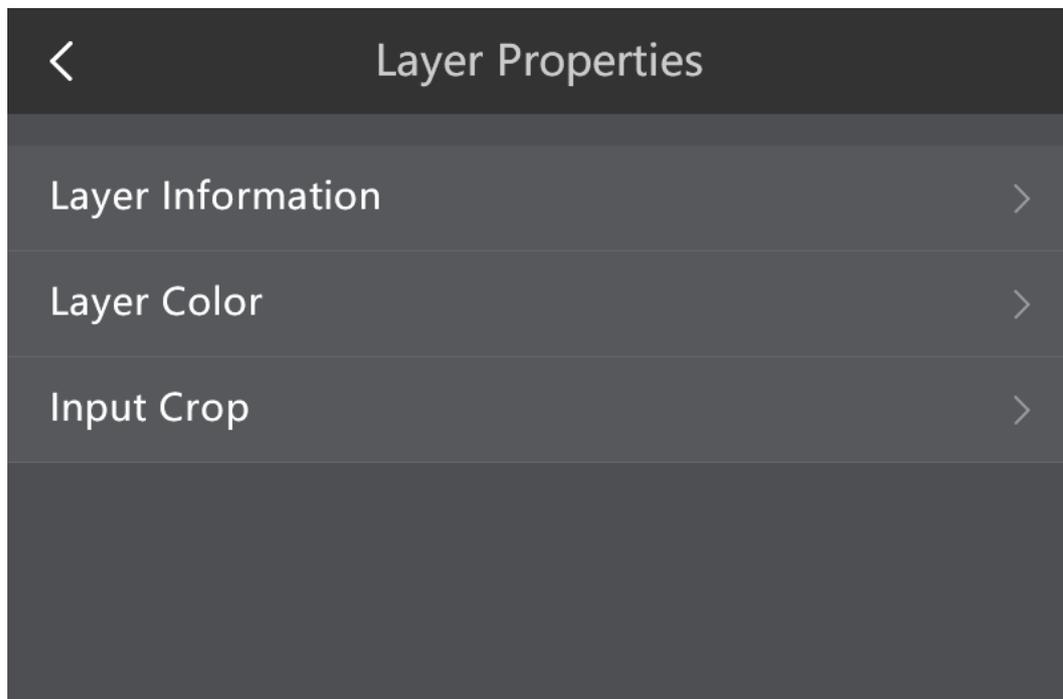
There are three ways to clear layers.

- Select a layer by pressing a layer button in the **LAYER** area on the front panel or tapping a layer on the touch operation screen. Then, press the **CLEAR LAYER** button in the **LAYER** area on the front panel
- Hold down the **CLEAR** button in the **PRESET EDIT** area on the front panel to clear all the layers in current editing area.
- On the programming page, select a layer by pressing a layer button in the **LAYER** area on the front panel or tapping a layer on the touch operation screen. After the layer is selected, tap **Clear** to clear the layer.

## Modifying Layer Properties

To modify layer properties, on the tool bar of the programming page, choose **Layer Settings > Properties** to enter the layer properties page.

Figure 4-29 Layer properties



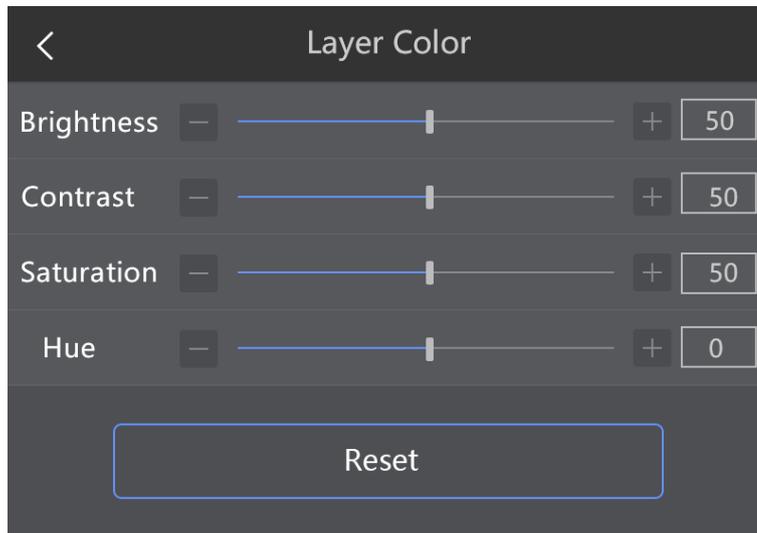
- Layer information

To view the layer information, tap Layer Information or press the **LAYER EDIT** button in the **LAYER** area on the front panel to enter the **Layer Information** page. On this page, you can view the layer No., layer priority, input source of the layer and the input resolution. You can also change the layer size and position.

Cancel	Layer Information		Apply
No.	1	Prior	0
Input Source	1-DP		
Resolution	1920×1080@60Hz		
Width	<input type="text" value="1920"/>	Height	<input type="text" value="1080"/>
X	<input type="text" value="0"/>	Y	<input type="text" value="0"/>

- Layer color

To enter the **Layer Color** page, tap the **Layer Color** option or press the **LAYER COLOR** button in the **LAYER** area on the front panel. On this page, you can set the overall brightness or RGB brightness, contrast, saturation and hue.



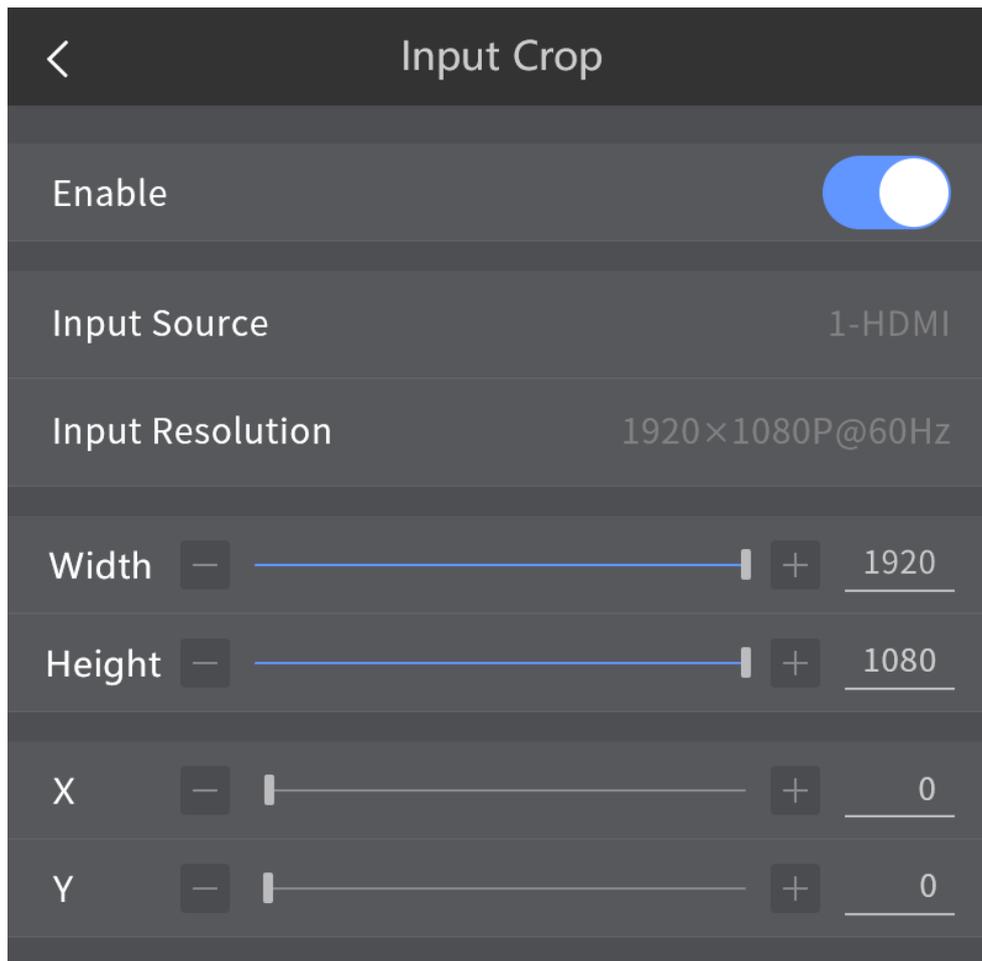
To adjust those parameters, you can drag the sliders or enter numbers in the text boxes. Or, you can tap the **+** or **-** button to adjust them slightly.

The values of overall brightness, RGB brightness, contrast and saturation range from 0 to 100 and default to 50.

The value of hue ranges from  $-180$  to  $+180$ , and defaults to 0.

- Input crop

The input crop function allows you to choose and crop a specific area of the video source, and scale the cropped area to display in full screen. To enable this function, tap the **Input Crop** option to enter its page and tap the toggle button. Or, press the **CROP ON/OFF** button in the **LAYER** area on the front panel. Then, you can adjust the width, height, X, and Y parameters to set the area to be cropped.



To adjust those parameters, you can drag the sliders or enter numbers in the text boxes. Or, you can tap the **+** or **-** button to adjust them slightly.

- **Width:** Horizontal width of the area to be cropped
- **Height:** Vertical height of the area to be cropped
- **X:** Horizontal start position of the area to be cropped
- **Y:** Vertical start position of the content to be cropped

---

**Note:**

You can also use some buttons and the joystick on the front panel to adjust the size and position of the area to be cropped. First, press the **CROP** button in the **JOYSTICK CONTROL** area. At this time, the button turns green. Then, press the **H** button, rotate the knob and move the joystick to set the width and horizontal position of the area. After that, press the **V** button, rotate the knob and move the joystick to set the height and vertical position of the area.

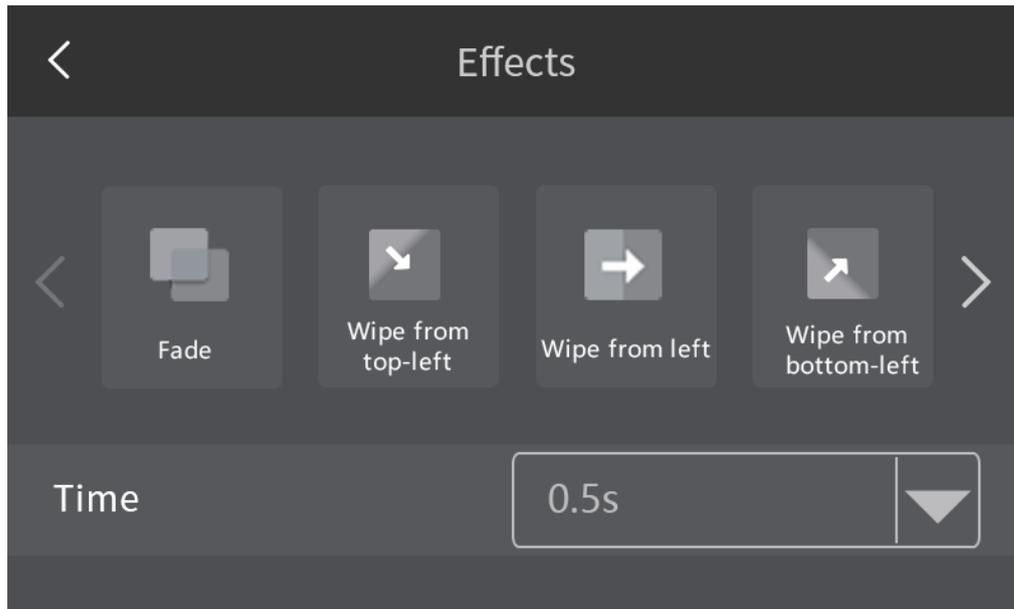
---

### 4.3.2 Transition Effects

Transition effects are the display effects that happen when PVW layers appear to PGM after you press the **TAKE** button to send the layers to PGM. Each layer in PVW use the same effect that you select from the overall 13 effects. On the **Effects** page, you can tap **<** or **>** button to view the effects. After you tap an effect icon to select it, tap the drop-down box next to **Time** to set the transition duration.

Value ranges: 0–2 seconds

Figure 4-30 Selecting a transition effect

**Note:**

You can also press the **MORE** button in the **TRANSITION** area on the front panel to enter the **Effects** page. Or, you can directly press the 6 commonly used effect buttons in the **TRANSITION** area. For details, see the description of the buttons in the **TRANSITION** area.

### 4.3.3 BKG

The C1 supports BKG settings. After the BKG is set, the BKG layer will be automatically sent to back and zoomed to display in full screen.

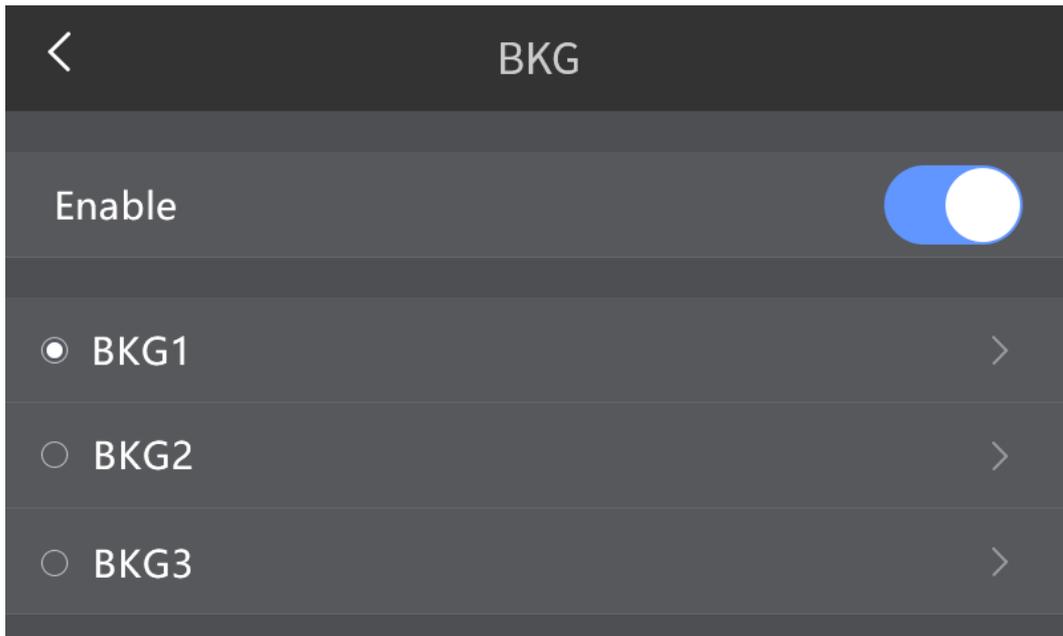
- Step 1 Insert the USB drive which stores images into the type-A USB port on the rear panel of the C1.
- Step 2 After the C1 identified the USB files automatically, a file import prompt box will be displayed. Tap **Import** in the box. The system will import the stored images to the C1.

Up to 10 BKG files can be prepared in C1 for use.

- Step 3 Choose **Layer Settings > BKG** to enter the BKG page.
- Step 4 Tap the toggle button next to **Enable** to enable the BKG function.

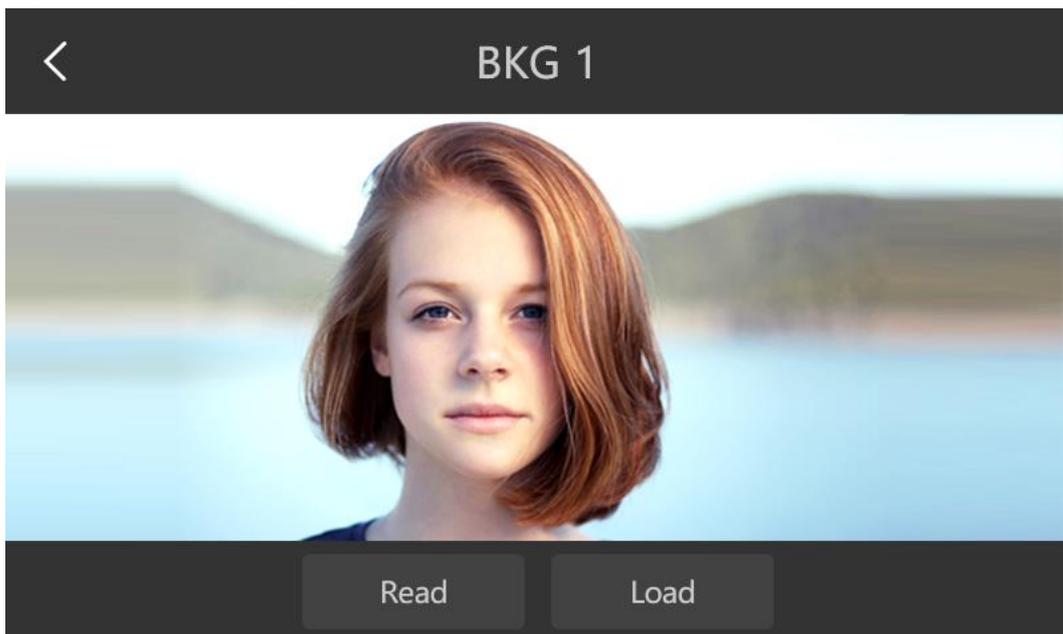
You can also press the **BKG ON/OFF** button in the **LAYER** area on the front panel to enter the BKG page.

Figure 4-31 BKG page



Step 5 Select one of the BKG files, tap the > button next to the selected file name to enter the BKG settings page.

Figure 4-32 BKG settings



- **Read:** Read the information of the BKG files added by the controlled device and send the information to the C1.
- **Load:** Add the imported images to the BKG.

Step 6 Tap **Apply** or press the **APPLY** button in the **OPERATION** area to apply the BKG file to PVW to PGM.

#### 4.3.4 Presets

The C1 supports up to 32 custom presets and 32 preset templates. Presets in the C1 have the following three states.

- A red preset name denotes that the preset has been loaded to PVW.
- A green preset name denotes that the preset contains layer data.

- A white preset name denotes the preset is blank and no layer data is saved in it.

## Saving Presets

The C1 allows the edited PVW or PGM to be saved as a preset which can be loaded and applied directly.

Tap **Save** to enter the **Save Preset** screen. Select a preset and tap **Save** at the top right to save the edited layer data to the selected custom preset.

Presets also can be saved quickly with buttons. Below are the operating procedures:

In the **PRESET EDIT** area, press the **SAVE CUSTOM** button, and it flashes yellow. At the same time, the preset buttons with data in the **PRESET** area turn yellow while the preset buttons without data do not change. Press the button of the preset where you want to save the edits to save the current layer information to the selected custom preset.

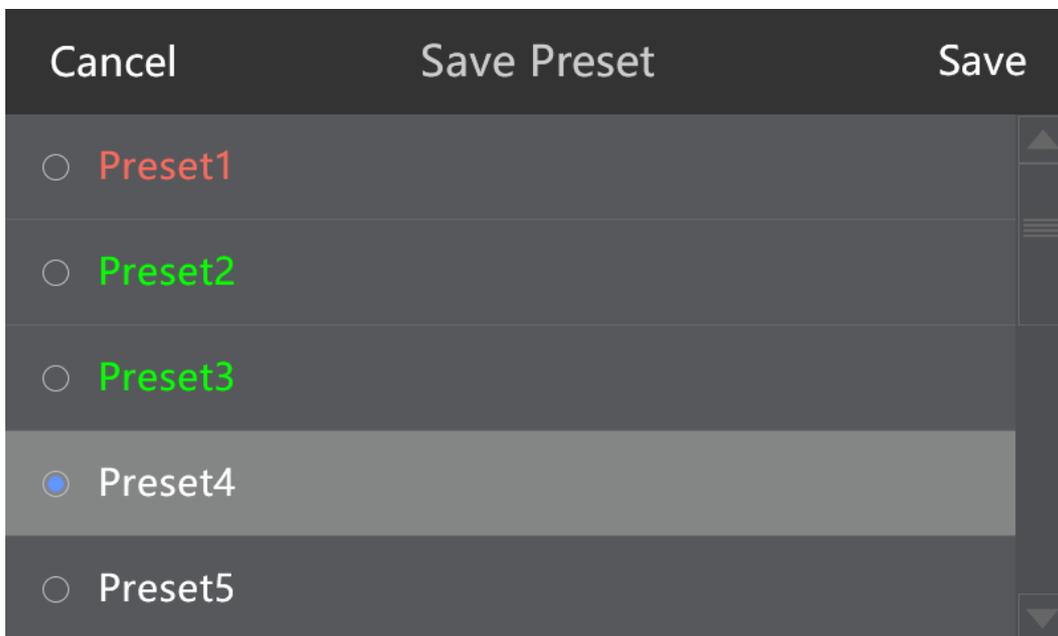
---

### Note:

When you save a preset, if you select a preset with its button in yellow, data in the preset will be replaced with the current preset data.

---

Figure 4-33 Saving presets

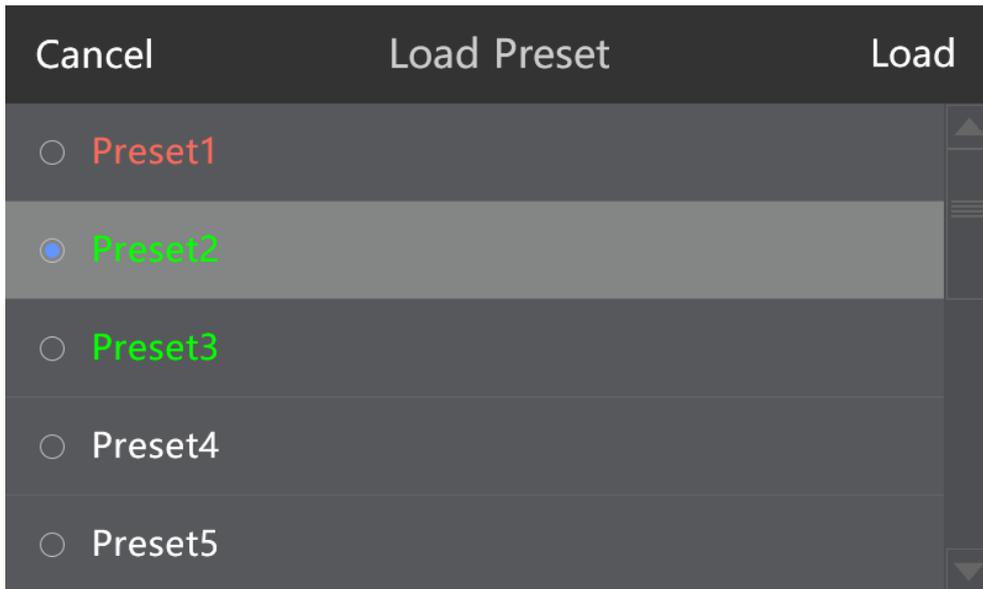


## Loading Presets

The C1 allows custom presets and preset templates to be applied directly. Custom presets can be loaded on the LCD screen and preset templates can be applied with buttons.

- Loading custom presets
  - On the home screen, tap **Load** to enter the preset list screen.

Figure 4-34 Loading presets



Select a preset and tap **Load** to load the preset to the current editing area.

---

**Note:**

Custom presets can also be loaded with buttons. Press the **CUSTOM** button, and it flashes yellow. Buttons of the presets with data turn yellow. Press a preset number to load the custom preset to the current editing area.

---

- Loading presets

Preset templates can be loaded only with buttons. Press the **TEMPLATE** button, and it flashes yellow. Buttons in the **PRESET** area turn red. Then, buttons in the **PRESET** area serve as preset template numbers. Press a button in the **PRESET** area to apply the template to the editing area.

## Clearing

Tap **Clear** to clear the layers and BKG information in the editing area.

### 4.3.5 AUX

The C1 supports up to 3 AUX configuration.

Press the **AUX** button in the **FUNCTION** area or tap **AUX** on **Programming** page to enter the AUX settings page as shown in the figure below.

Figure 4-35 AUX



Select an AUX on the touch screen, then tap **Input** or press the corresponding source button in the **SOURCE** area to set the input source for the AUX.

AUX1 and AUX2 can be accessed with the input sources from the N9 and VE7

AUX3 decides the output content of the MVR/AUX connector on the VE7. AUX3 can be accessed with the input sources from the VE7 only.

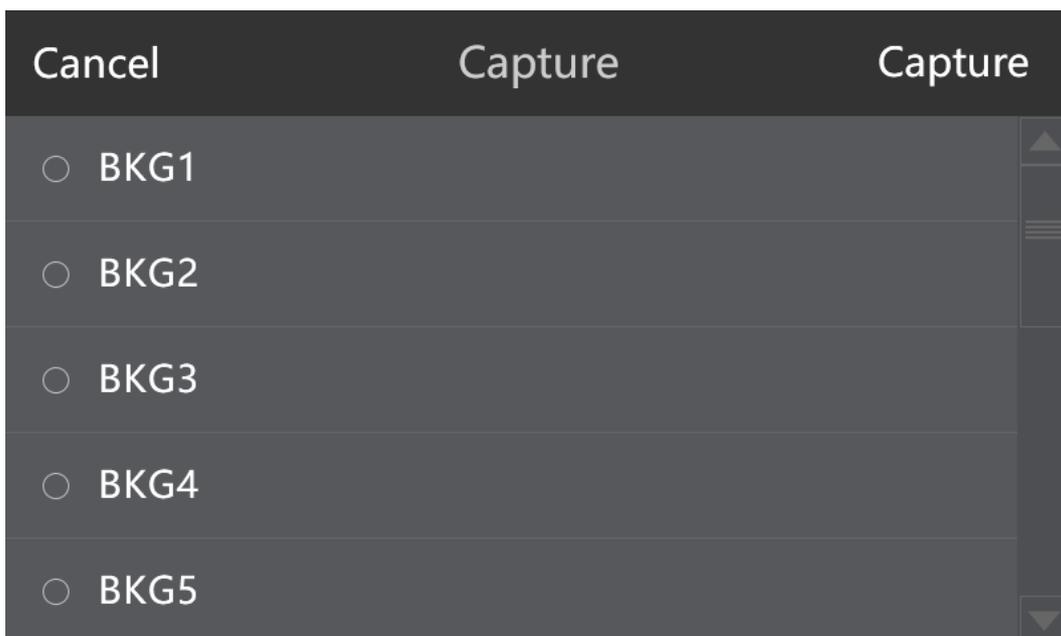
Tap **MAIN** to exit the AUX settings page and go back to the programming page.

#### 4.3.6 Capturing

The C1 allows you to capture the input sources and the captured images can be saved as BKG.

In the **FUNCTION** area, hold down the **Capture** button, and it flashes green. Press the button of the input source you want to capture to capture its current frame. The **Capture** screen is displayed after capturing.

Figure 4-36 Capturing

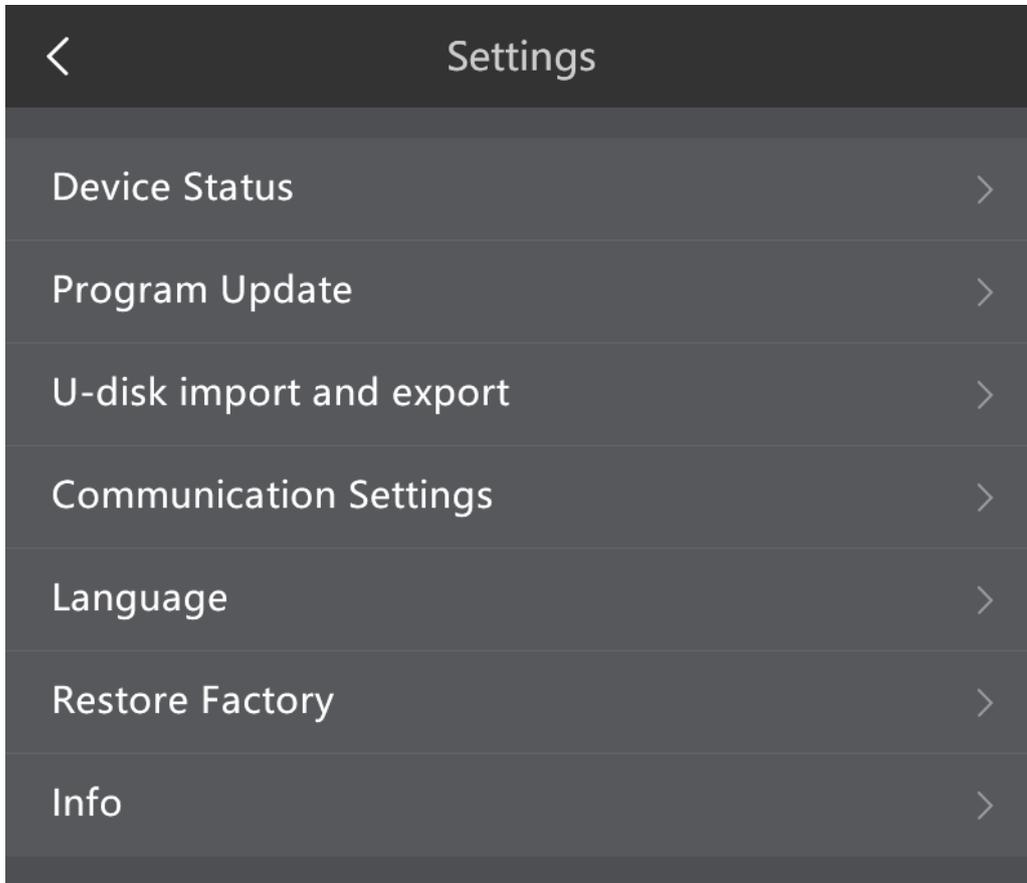


You can select a name from BKG1–BKG10. Tap to select one and tap **Apply** to save the captured image.

## 4.4 Settings

The **Settings** area includes the settings of seven major functions: device status, program update, USB import and export, communication, language, factory reset, and manufacturer information. These settings are mainly used for controlling the C1.

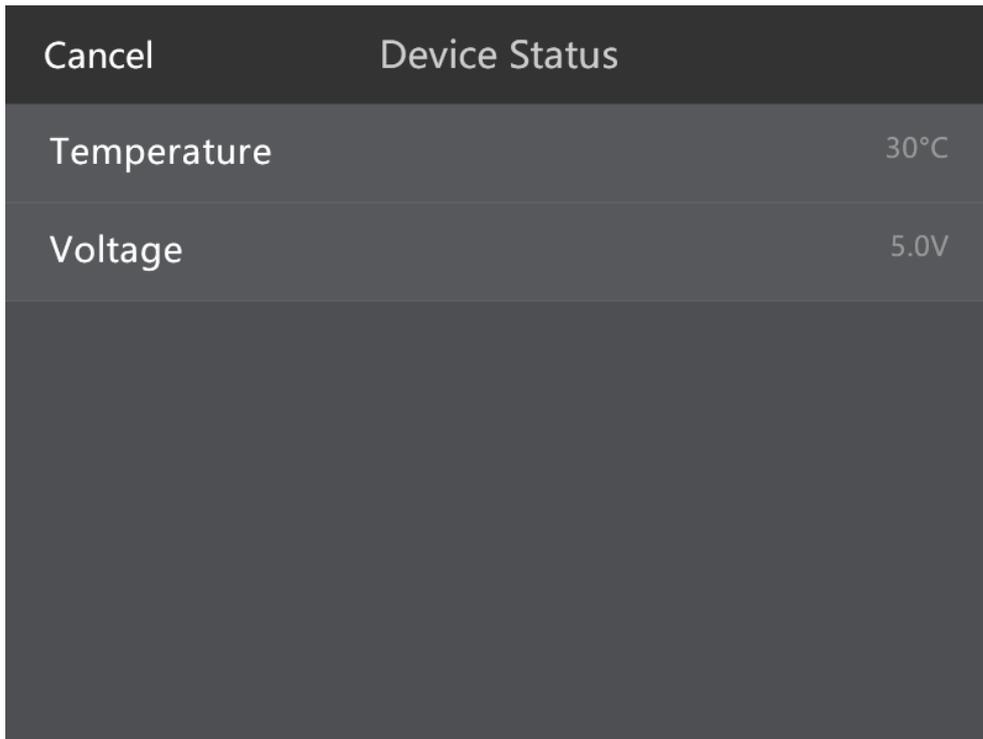
Figure 4-37 Settings



### 4.4.1 Device Status

Tap **Device** to view the temperature and voltage of the device.

Figure 4-38 Device Status



#### 4.4.2 Program Update

The C1 can be updated via USB. You can save the update program file in a USB drive and insert it into the USB port on the rear panel of the C1. On the **Program Update** screen, tap **Program Update**. The system automatically searches the USB drive for the update program file and a pop-up window appears. Tap **OK**, and the system will automatically update the unit with the program file in the USB drive.

Figure 4-39 Program Update

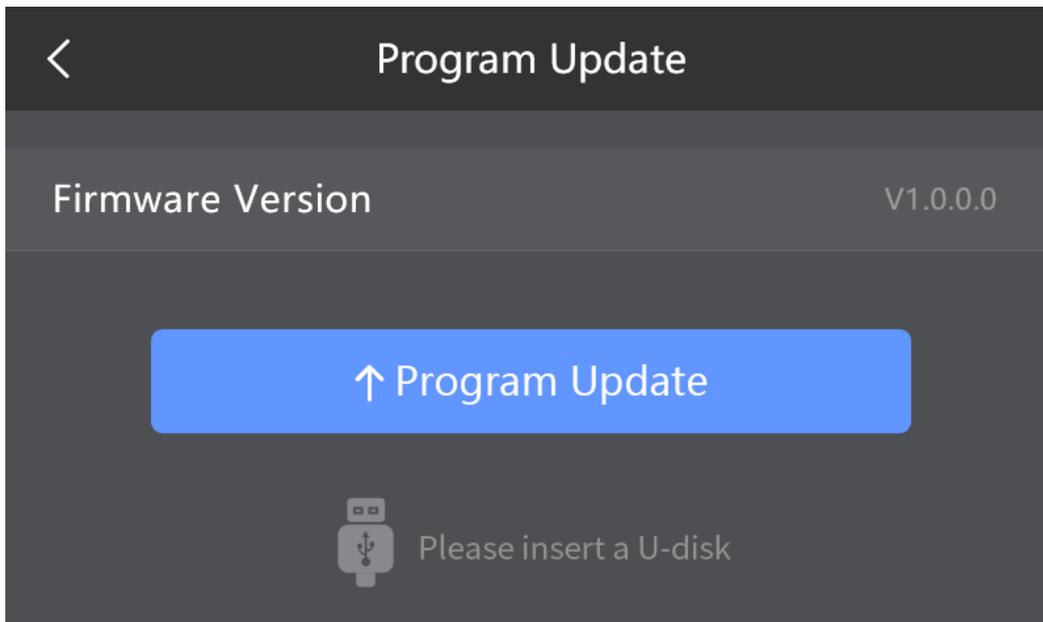
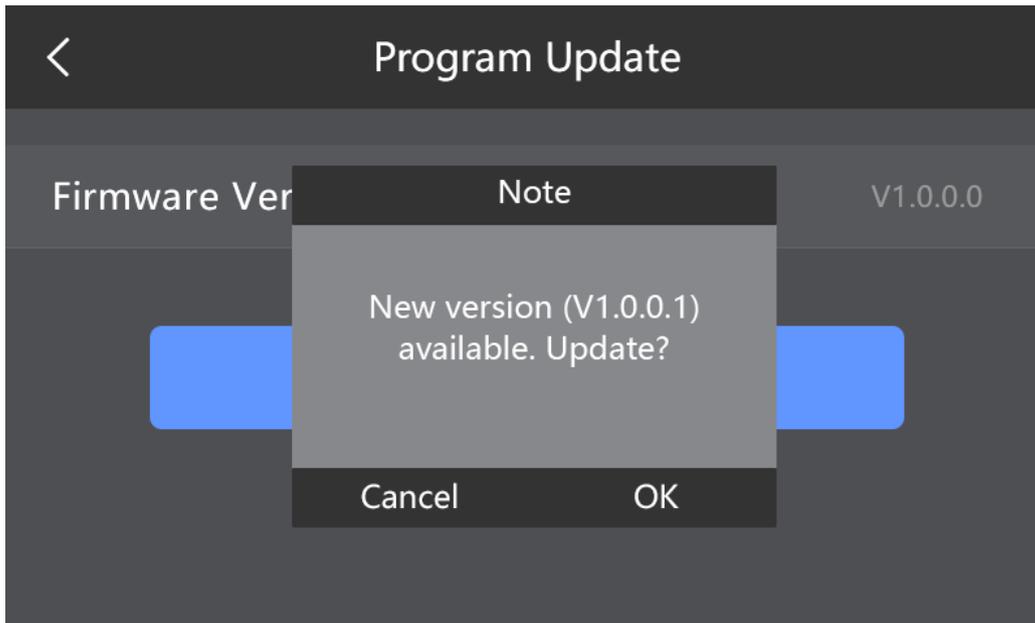


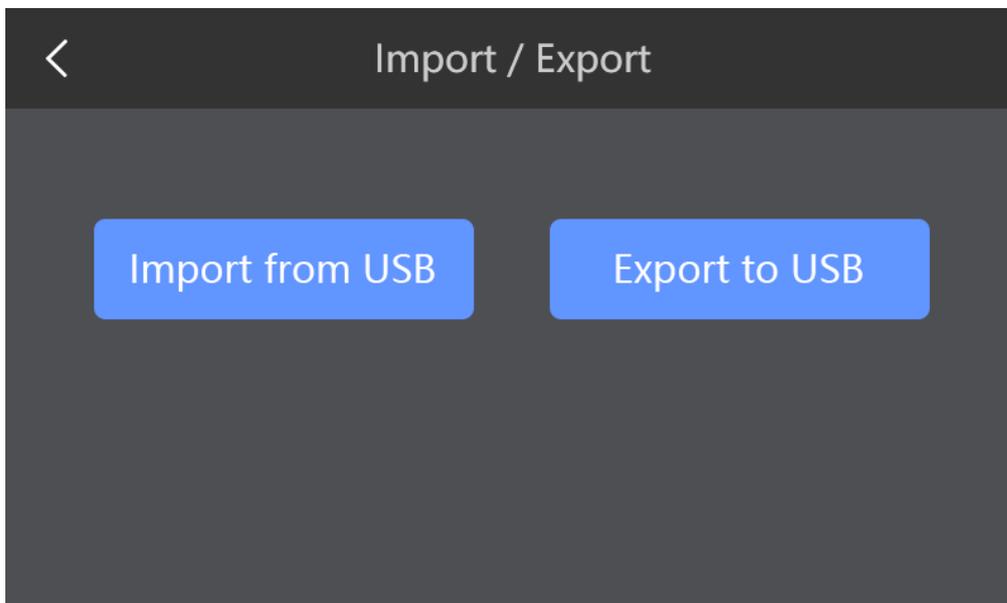
Figure 4-40 Pop-up window



#### 4.4.3 USB Import and Export

Configuration files saved in a USB drive can be imported into the C1 and configuration files in the C1 can be exported to a USB drive so that the files can be imported into another C1 unit for quick use.

Figure 4-41 USB Import and Export



#### USB Import

1. Insert the USB drive where the C1 configuration files are saved into the USB port on the rear panel.
2. Choose Settings > USB Import and Export to enter the USB import and export screen.
3. Tap **USB Import**, the system will automatically import the configuration files into the C1.

#### USB Export

1. Insert a USB drive into the USB port on the rear panel of the C1.
2. Choose Settings > USB Import and Export to enter the USB import and export screen.
3. Tap USB Export, the system will automatically export the configuration files in C1 to the USB drive.

#### 4.4.4 Communication Settings

When the C1 is connected to multiple controlled devices through a router or switch, you need to set the IP address, subnet mask and gateway of the C1 in communication settings to ensure the C1 and the controlled devices to be controlled by the C1 in the same network segment.

In communication settings, you can set the network mode (static and dynamic), IP address, subnet mask, and gateway.

Figure 4-42 Communication settings

Cancel	Communication				Apply
DHCP					<input checked="" type="checkbox"/>
IP	192	168	0	10	
Mask	255	255	255	0	
Gateway	192	168	0	1	

#### 4.4.5 Language

The user interface language of the C1 is now available in **Chinese** and **English**, allowing users to change language according to their needs.

Figure 4-43 Language

Cancel	Language	Apply
Chinese(Simplified)		<input checked="" type="checkbox"/>
English		<input type="checkbox"/>

#### 4.4.6 Restoring Factory Settings

The C1 allows itself as well as its controlled devices to be restored to factory settings. You can choose **Restore Factory** and **Restore (Save IP)**, and choose to restore the terminal device to factory settings.

- **Restore Factory:** Restore all the parameters to factory settings.
- **Restore (Save IP):** Restore all the parameters except the IP to factory settings.

Figure 4-44 Restoring factory



#### 4.4.7 Self-Test

Test whether each component can work normally. If anything is wrong, please feedback to technical support team of Xi'an NovaStar Tech Co., Ltd. to solve the problem as soon as possible.

#### 4.4.8 Manufacturer Information

You can view the manufacturer information of the C1, including the official website and QR code.

Official website: <http://www.novastar.tech>

QR codes: WeChat and Facebook

Figure 4-45 Manufacturer information



**Copyright © 2019 Xi'an NovaStar Tech Co., Ltd. All Rights Reserved.**

No part of this document may be copied, reproduced, extracted or transmitted in any form or by any means without the prior written consent of Xi'an NovaStar Tech Co., Ltd.

**Trademark**

 is a registered trademark of Xi'an NovaStar Tech Co., Ltd.

**Statement**

You are welcome to use the product of Xi'an NovaStar Tech Co., Ltd. (hereinafter referred to as NovaStar). This document is intended to help you understand and use the product. For accuracy and reliability, NovaStar may make improvements and/or changes to this document at any time and without notice. If you experience any problems in use or have any suggestions, please contact us via contact information given in document. We will do our best to solve any issues, as well as evaluate and implement any suggestions.