C2G®

A brand of legrand®

AV CONTROLLER

PRODUCT OVERVIEW AND C2G-CONTROL SOFTWARE PROGRAMMING

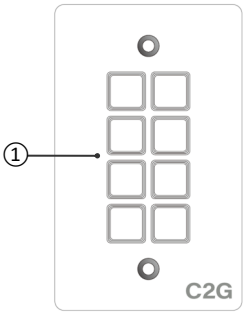
Model C2G50348

Table of Contents

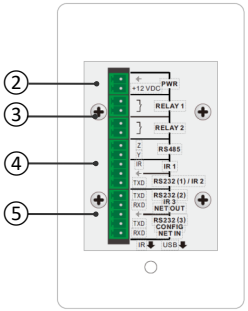
Product Overview

AV Controller

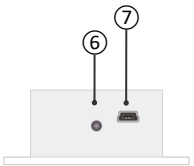
Front Panel



Rear Panel



Bottom Panel

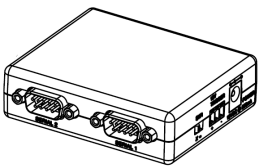


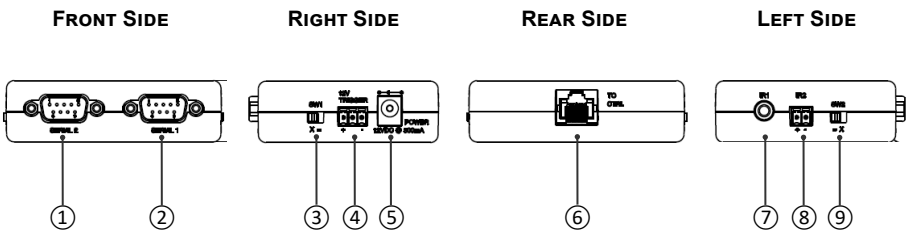
	Front Panel	Description
1	Programmable Button Panel	Crystal and luminescent, programmable buttons: Buttons are programmable with the AV Controller software. Labels inside the buttons are changeable.
	Rear Panel	**Description**
2	PWR	12VDC. Ensure that the "+" and "-" connections are never crossed or mixed.
3	RELAY 1 RELAY 2	Connect the low-voltage relay ports to the 12V trigger on the MCIA. Set the relay on/off using the AV Controller software.
4	RS485 IR 1 RS232 (1)/IR 2	**RS485:** RS485 can be programmed with different commands. The command of RS485 is the same as RS232 (1). **IR1:** Use the AV Controller software to program control of devices. **RS232 (1)/IR2:** Both share the same port. When used as RS232, data can be transmitted, but not received.

	Rear Panel	Description
5	RS232 (2) IR 3 NET OUT RS232 (3) CONFIG NET IN	**RS232 (2)/IR3:** Used for controlling other devices or daisy chaining output. RS232 (2) and IR3 share the same port. **RS232 (3):** Used for controlling other devices, daisy chaining output, or connect with PC. These two ports share the same grounding.
	Bottom Panel	**Description**
6	Infared Sensor Port	IR learning
7	Mini USB Port	1. Communicate with PC using AV Controller software to program buttons. 2. Transmit the infrared data when learning IR (Optional).

Product Overview

Multiport Controller Interface Adapter (MCIA)





	Front Side	Description
1	DB9 RS232 Serial Port 2	Serial RS232 output port supports Transmitting (TX), pulling from the signal from DB9 RS232 Serial Port 1.
2	DB9 RS232 Serial Port 1	Serial RS232 output port supporting Transmitting (TX) and Receiving (RX).
	Right Side	**Description**
3	SW1 Dip Switch	The dip switch alters the pinout of the DB9 Serial RS232 port. There are two different settings, standard and reversed. **Standard "=":** This setting configures the pinout of the DB9 port on the MCIA to match the standard **Reversed "X":** This setting is used in situations where the Serial cable being used does not match the pinout requirements of the device being controlled, i.e. null-modem.
4	12V Trigger	Connect to devices that require a 12V Trigger, ie. Screen motors.
5	DC Power Port	Power input port

	Rear Side	Description
6	RJ45 Port	A Cat5e/6/6a cable must be connected between the MCIA and the AV Controller wall plate.
	Left Side	**Description**
7	IR 1 Port (3.5mm)	Allows the AV Controller wall plate to operate devices through the use of IR signals.
8	IR 2 Port	**Phoenix 2-Pin Port:** IR signal output port
9	SW2 Dip Switch	The dip switch alters the pinout of the DB9 Serial RS232 port. There are two different settings, standard and reversed. **Standard "=":** This setting configures the pinout of the DB9 port on the MCIA to match the standard **Reversed "X":** This setting is used in situations where the Serial cable being used does not match the pinout requirements of the device being controlled, i.e. null-modem.

Features

- All buttons can be programmed to send the bi-direction RS232 and RS485 commands simultaneously to control third party devices
- All buttons can be programmed to send the infrared code, control the relay, allowing them work simultaneously to control the third party devices
- Every button is built in the infrared code and RS232 code learning function, and baud-rate setting
- Daisy chaining option with 99 programmable control panels that can be chained and controlled together, by ID identifying
- Programmed by USB, working with the AV Controller software
- Crystal and backlit buttons with easy user-friendly customizable changeable labels
- The backlit brightness is controllable
- Dimension: 11.4cm long and 7cm wide

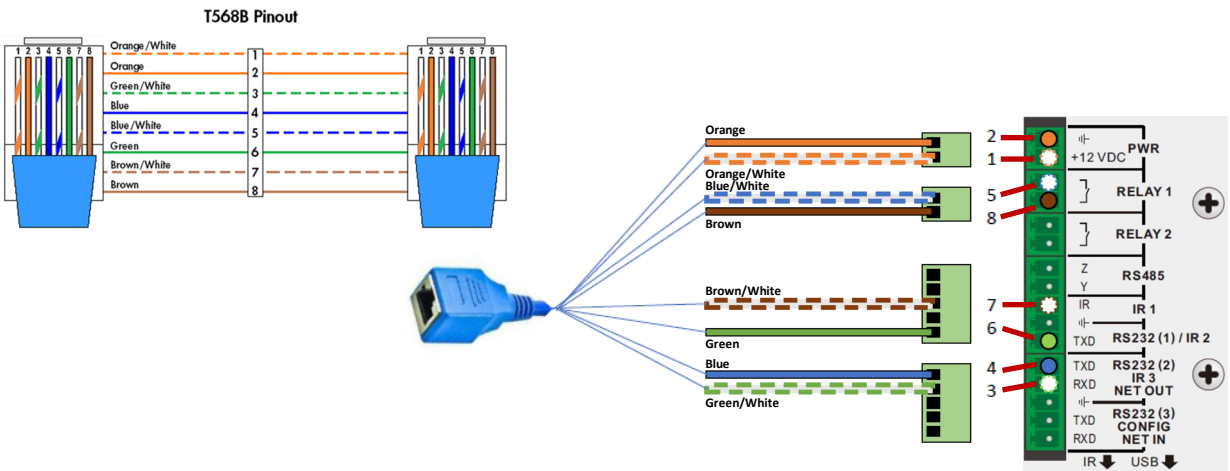
Package Contents

- 1 x Programmable Control Panel
- 1 x Multiport Controller Interface Adapter (MCIA)
- 1 x Phoenix to RJ45 Adapter Harness
- 3 x 2-pin Captive Screw Connectors
- 2 x 5-pin Captive Screw Connectors
- 8 x Button Caps
- 1 x Mini USB Cable
- 1 x Power Adapter (12VDC)
- 1 x Dual IR Emitter
- 1 x Single IR Emitter
- 1 x Button Label

INSTALLATION

Hardware Connections with Multiport Controller Interface Adapter (MCIA):

- An RJ45 port is located on the MCIA, while the back of the AV Controller has Phoenix Pin connectors.
- An adapter harness is provided to convert the Phoenix Pin connection to RJ45 for use with the MCIA.
- A Cat5e/6/6a cable must be connected between the MCIA and the wall plate controller to provide a link to pass power from theMCIA to the wall plate controller as well as pass IR and Serial control signals from the wall plate controller through the MCIA to the devices that will be controlled.
- The Cat5e/6/6a cable used to connect the MCIA to the wall plate controller should be wired to the T568B pinout standard.



Installation (continued)

Connecting the Multiport Controller Interface Adapter (MCIA):

Step 1: Connect a Cat5e/6/6a cable between the RJ45 port on adapter harness, connected to the MCIA and the RJ45 port on the C2G A/V Controller.

Step 2: Using a RS232 serial control cable (not supplied with this unit), connect the MCIA's DB9 port to the projector/video display device's RS232 port. (If applicable).

Step 3: Connect the IR Emitter Cable to the Phoenix 2-Pin Port on the MCIA and peel off the adhesive cover on the IR Emitter head. Place the IR Emitter head on the IR eye of the device to be controlled. (If applicable).

Step 4: Connect the AC/DC Power Adapter* to an available AC outlet and then to the DC power input port on the MCIA.

Warning: The AC/DC Power Adapter should only be installed in an accessible location and in accordance with local building codes.

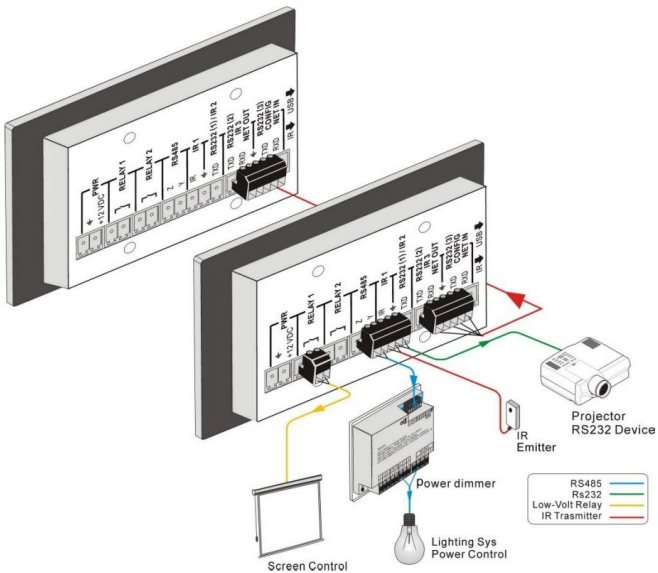
*Always use an approved AC/DC adapter that provides output power in the range of 7.5~12V DC, 1A

Installation (continued)

Hardware Connections without Multiport Controller Interface Adapter (MCIA):

Note: Before installing cables, please ensure the unit is disconnected from the power source.

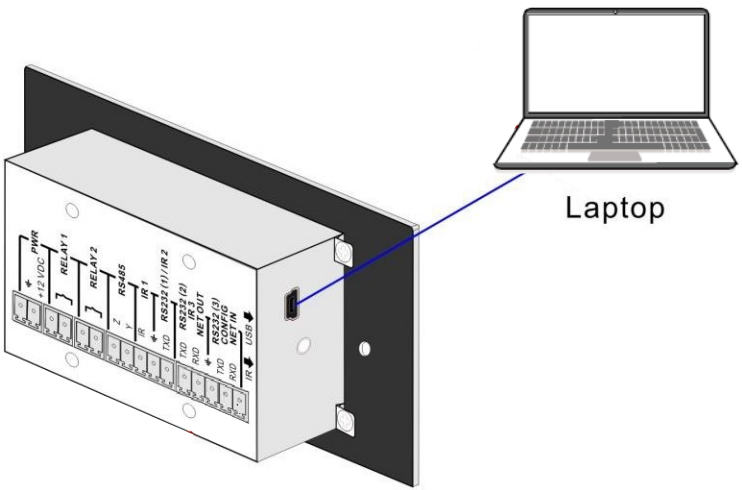
The AV Controller can have different ports active at the same time. This means every button can send RS232 and RS485 commands, IR code, and control the relay at the same time.



Programming

Note: Before installing cables, please ensure the unit is disconnected from the power source.

The AV Controller can be connected to a computer for programming the default the button functions. It can be connected by USB, working with the AV Controller software. Programming instructions begin on page 13 of this manual.

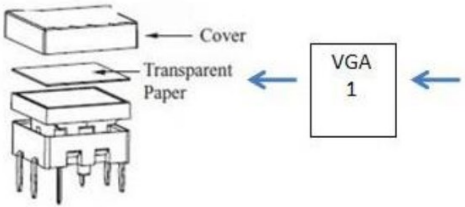


MOUNTING THE KEY PLATE

The button labels must be inserted into the AV Controller before the wall plate is mounted.

- Crystal and luminescent, programmable buttons.
- Choose the buttons that will be used and remove them from the button sheet.
- All labels inside the buttons are changeable.

You can choose the label you need and change it very easily like below:



Transparent paper table

VGA 1	VGA 2	VGA 3	VGA 4
DVI 1	DVI 2	DVI 3	DVI 4

MOUNTING THE WALL PLATE

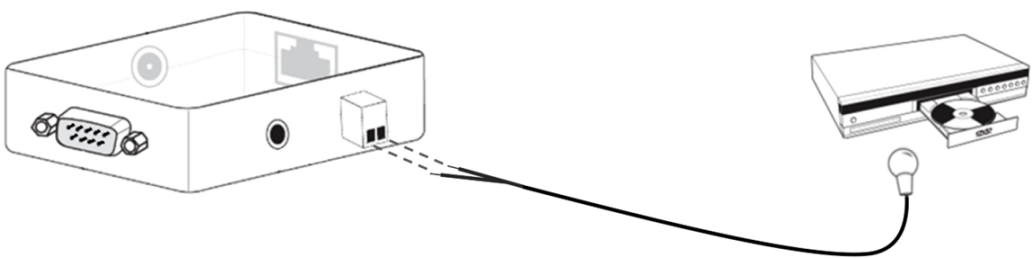
Step 1: Identify the desired location for mounting the junction box.

Step 2: Connect the Cat5e/6/6a cable to the wall plate controller and mount the wall plate to the junction box. The controller requires a minimum junction box depth of 30mm.

Infrared (IR)

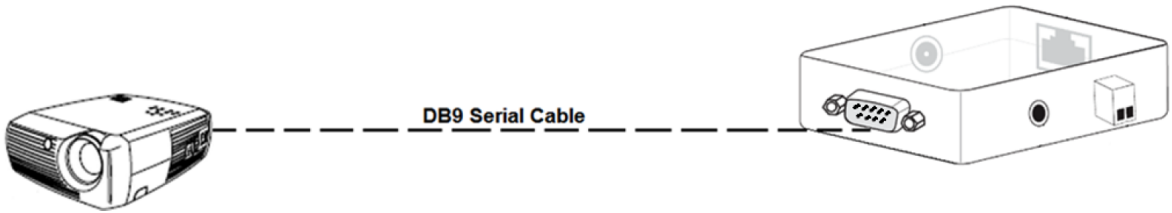
There are two different IR ports located on the MCIA, a 3.5 mm port and a Screw Terminal. Both of these ports allow the wall plate controller to operate devices through the use of IR signals.

- **3.5mm Port (IR1):** This port provides a tip-sleeve (TS) connection and accepts a standard 3.5mm mono connection from an IR emitter.
- **Phoenix Screw Terminal Port (IR2):** This port provides a bare wire connection from an IR emitter and will accept a minimum wire gauge of 24AWG and a maximum wire gauge of 14AWG. This port is ideal for situations where the IR emitter must be extended. The left opening is the positive and the right opening is the negative portion of the IR signal.
    - The IR Emitters come connected to 5-Pin Phoenix Captive Screw Connectors, intended to connect directly to the IR port on the back of the Programmable Control Panel if not using the RJ45 Adapter Harness.
    - When using the IR Emitter with the MCIA, the 5-Pin Phoenix Connector must be removed, and the two IR Emitter wires will need to be screwed into the 2-Pin Phoenix Connector from the IR2 port of the MCIA.



SERIAL RS232/DB9 PORT

This port allows the controller to operate devices through the use of Serial RS232 commands. The dip switches on the MCIA alter the pinout of the DB9 Serial RS232 port. There are two different settings, straight and crossed (null-modem).



5.5MM DC POWER PORT

This port on the MCIA accepts a 9V, 1A DC power input from the AC/DC power adapter* or other DC power source and pro -vides power to the wall plate controller.

*Always use an approved AC/DC adapter that provides output power in the range of 7.5~12V DC, 1A.

Daisy Chaining

After connecting multiple AV Controllers, set the ID of each programmable control panel by AV Controller software. The ID number is from 01 to 99, and it is also the order of the AV Controllers in the loop, different programmable control panels should be set to a different ID. After all connections are completes, set the control modes using the AV Controller software.

Note: Up to 99 programmable control panels can be daisy chained within one system. However, to achieve optimal performance, only daisy chain up to ten (10) AV Controllers in the system.

Troubleshooting & Maintenance

- When the control panel is not working, please check and verify the power cord is connected and plugged in properly, then restart the device.
- When USB connection is not responding, please make sure the USB driver is installed correctly and then reconnect the USB cable.
- When the LED of a button is not lit, please verify the button has been programmed properly. If yes, delete the programmed button and try again.
- If the controlling queue is not working properly when daisy chaining, please reboot the AV Controller.

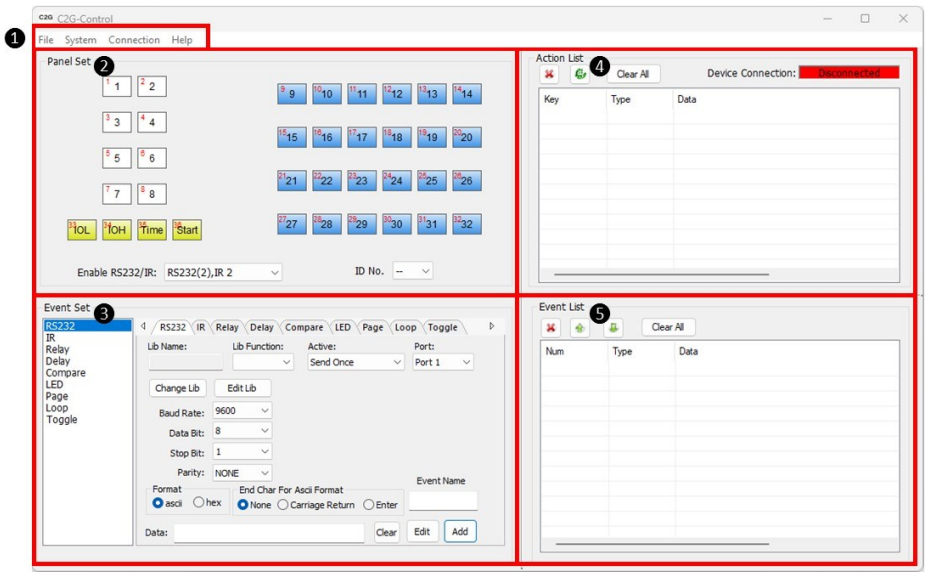
Software Programming

This software allows for the easy setup of all C2G AV Controller programmable buttons.

After connecting the AV Controller to your PC by USB, open the C2G Control Software to program the buttons for controlling.

The main window of the C2G Control Software has five parts:

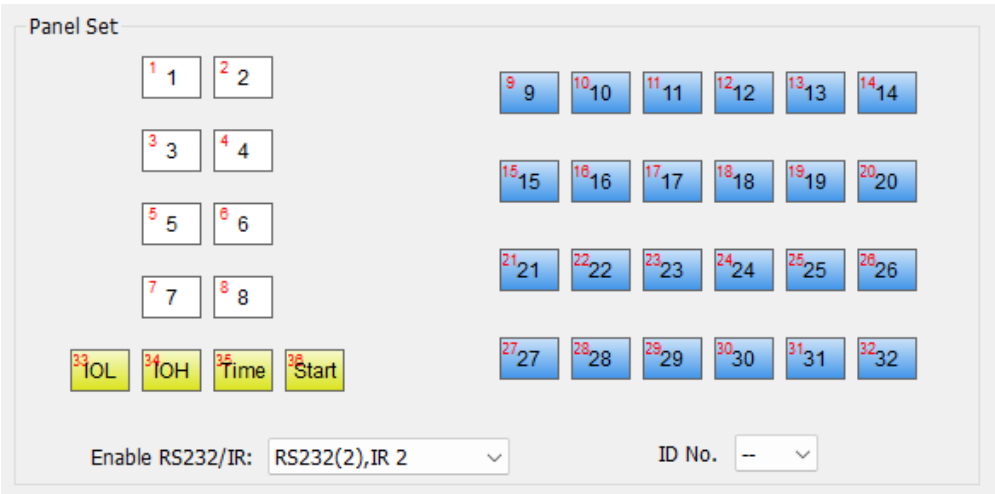
1. **Main Menu**
2. **Panel (button) Set**
3. **Event Set**
4. **Action List**
5. **Event List**



MAIN MENU

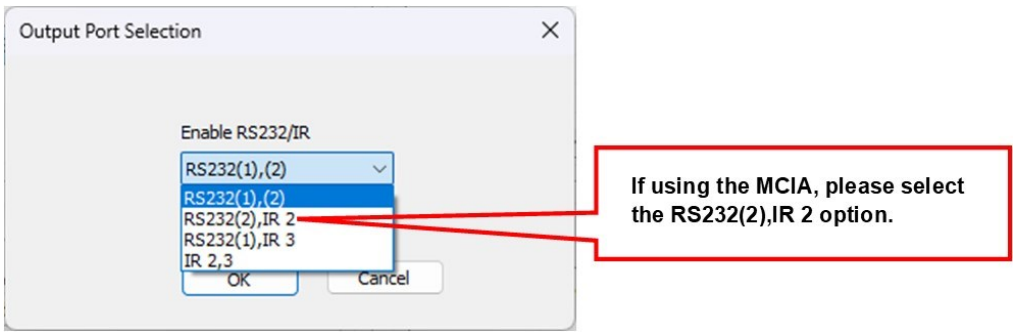
The main menu includes file management, system model, connection type, and help.

1. **File management:** New/Open/Save/Save as a configuration. After programming, the user can save the configuration to a file so they can use the same configuration next time.



Main Menu (continued)

Note: When selecting the model, the **Output Port Selection** dialog will pop up. Users can choose different RS232 and IR configurations depending on the uses of the two shared ports. The dialog is as shown in the picture below:



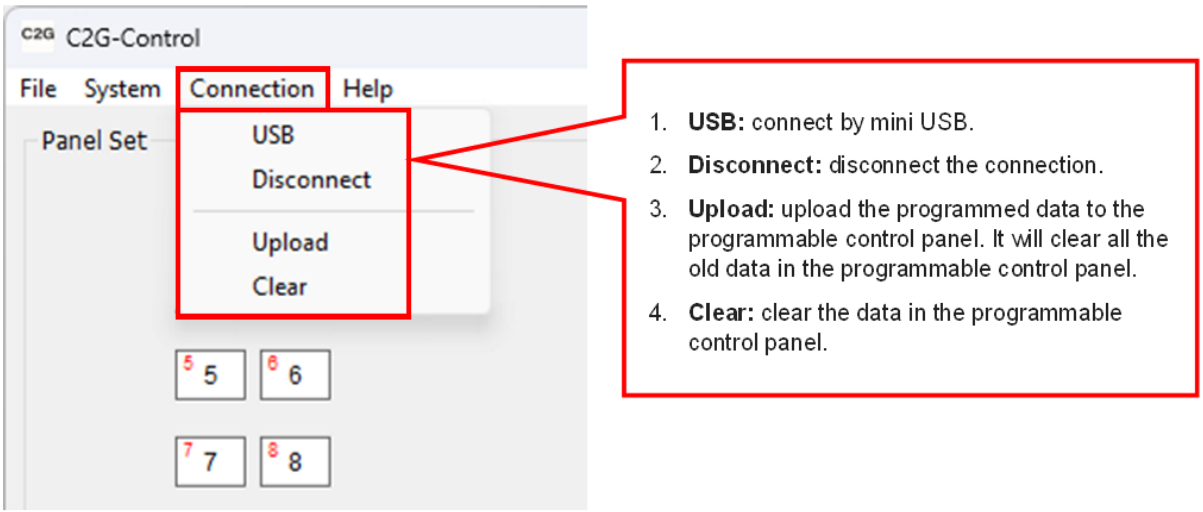
MAIN MENU (CONTINUED)

The output port set in the C2G-Control Software and the port used in AV Controller are corresponding. And there are four output types. They are shown in the below form ("√" means the port is available):

Output port of the Panel / Output mode of Software	IR1	RS232(1)	IR2	RS232(2)	IR3	RS232(3)	RS485
RS232(1)(2)	√	√		√		√	√
RS232(2),IR2	√		√	√		√	
RS232(1),IR3	√	√			√	√	√
IR2,3	√		√		√	√	

MAIN MENU (CONTINUED)

2. **Connection type:** the instructions are in the picture below:

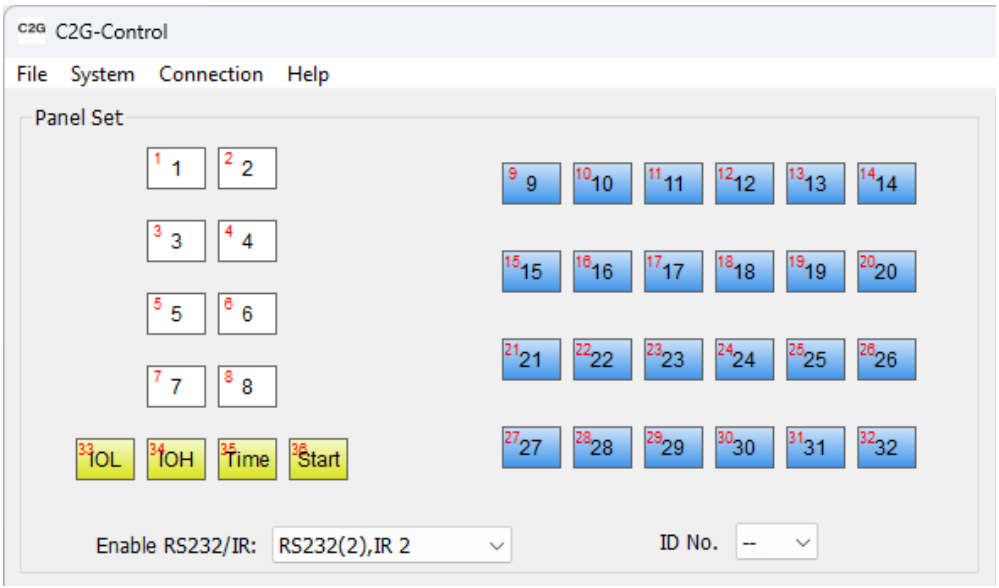


The functions of AV Controller's buttons will be available only after the programmed data is uploading successfully.

3. **Help:** Shows the information of C2G-Control Software.

PANEL/KEY SETTING

There are three different colors of keys in the Panel Set of C2G-Control Software. Add a key action to action list, then add events to this action. Making this action will execute the events.

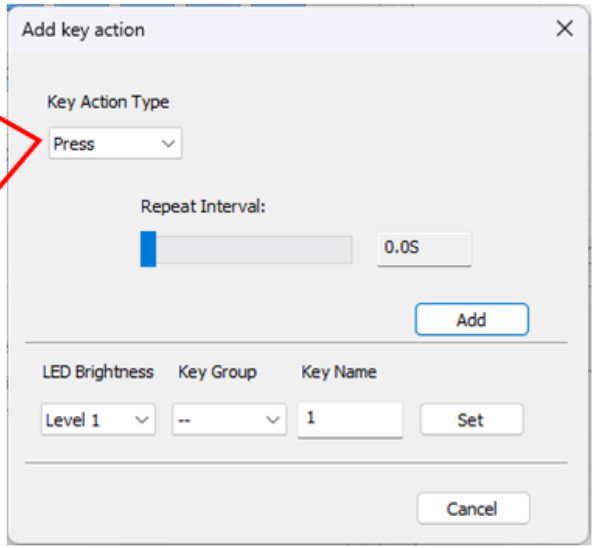


PANEL/KEY SETTING (CONTINUED)

1. **White keys:** keys 1-8, correspond to the buttons on the AV Controller. After clicking the key, the dialog will pop up as shown below:

Key Action Type :

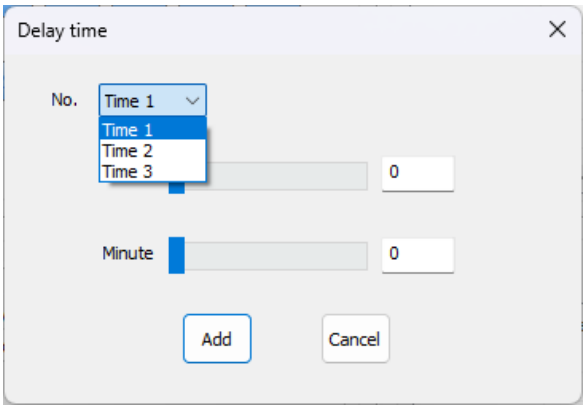
1. **Press:** Execute events when press button.
2. **Release:** Execute events when release button.
3. **Page:** Up to 4 pages per button. Pressing the button will execute the events. Other buttons can change the page to execute a different page of events.
4. **Toggle:** Up to 4 actions can be added to one button. Pressing the button will execute the events and move to next action. When the last action is executed, it will loop back to the first action.



PANEL/KEY SETTING (CONTINUED)

2. **Blue Keys:** Keys 9-32 are all virtual keys used in the loop function. When using the loop function, you must set the ID; the ID can be 1 to 99. Pressing **Add** will add the button to the action list.

3. **Yellow Keys:** Keys 33-36 are all virtual keys. Key 33 and 34 are for I/O control, which this model does not support. Key 35 is a delay button; you can set three time slots. Key 36 is a start action, and if you add events to this action when the AV Controller's power is on, it will execute the events in this action. See the picture below:

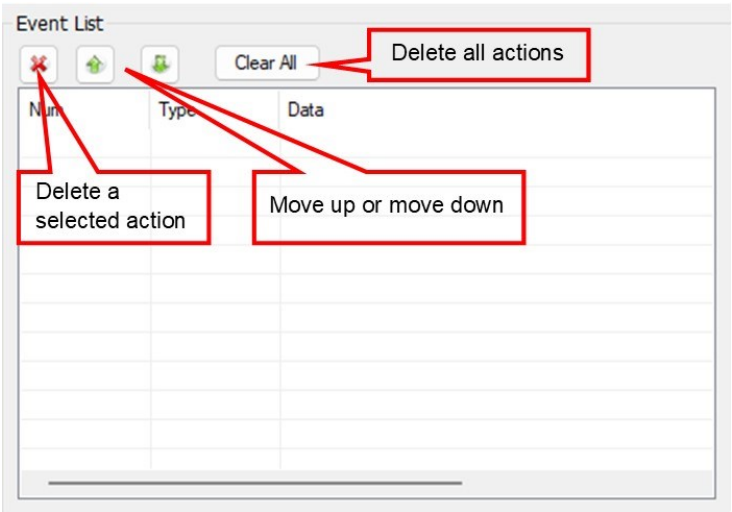


The timer starts when the unit is powered on. When **Time 1** is selected, the AV Controller will execute the events in **Time 1**. Then recount from **Time 2** and then **Time 3**.

Example: Set **Time 1** to 5 minutes and **Time 2** to 3 minutes. Add **Event 1** to **Time 1** and **Event 2** to **Time 2**. When the unit starts, it will execute **Event 1** after 5 minutes and then **Event 2** after 8 minutes.

ACTION LIST

The **Action List** shows all the set actions. The user must add an available action to the list. The **Action List** is as shown in the picture below:

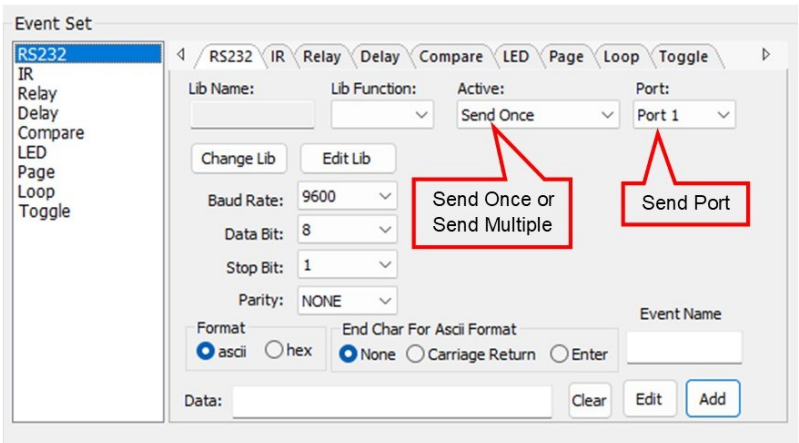


EVENT SETTING

Event Setting includes RS232, IR, Relay, Delay, Compare, LED, Page, Loop, and Toggle settings. Before setting events, the user must first add an action. The following introduction will show you the setting of each event:

- **RS232 Setting**

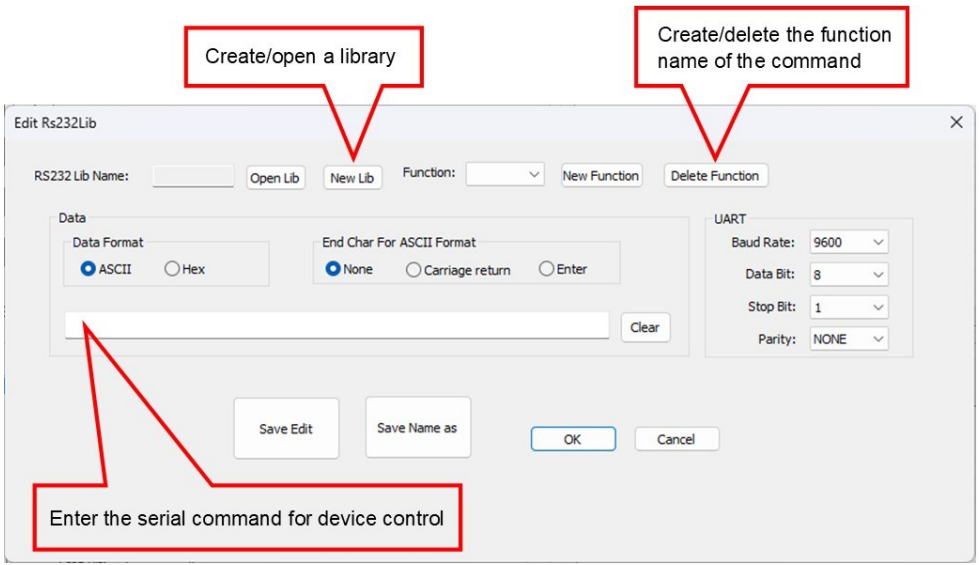
This item sets the parameters of the AV Controller's serial ports. Click **RS232**; it will show as below:



EVENT SETTING (CONTINUED)

- **RS232 Setting (continued)**

1. The data of RS232 can be directly entered or selected from the library. Click **Change Lib** to select a library file and open it. Click **Edit Lib** to create or edit a library file as below:

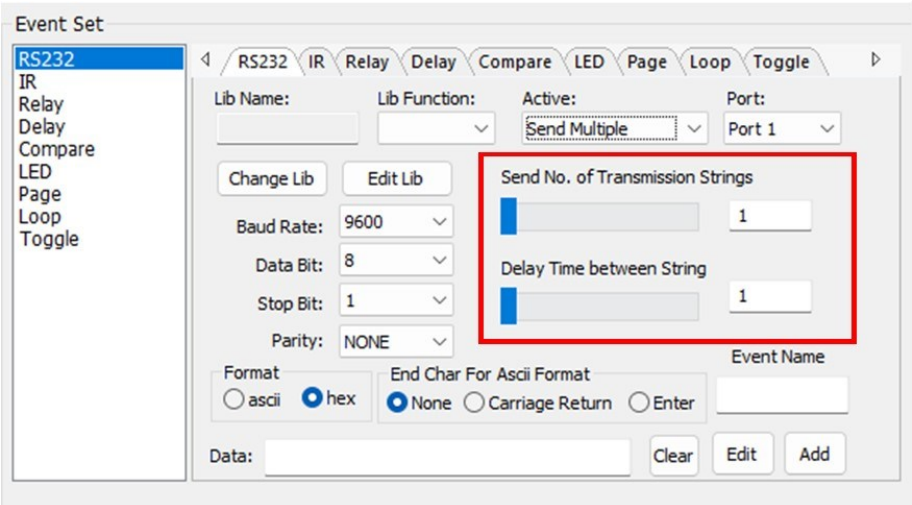


Note: When finished editing, remember to save the editing, and then press OK.

EVENT SETTING (CONTINUED)

- **RS232 Setting (continued)**

2. There are two send types: **Send Once** and **Send Multiple**. When selecting **Send Multiple**, the user can set the send times and the delay between times. See the picture below:

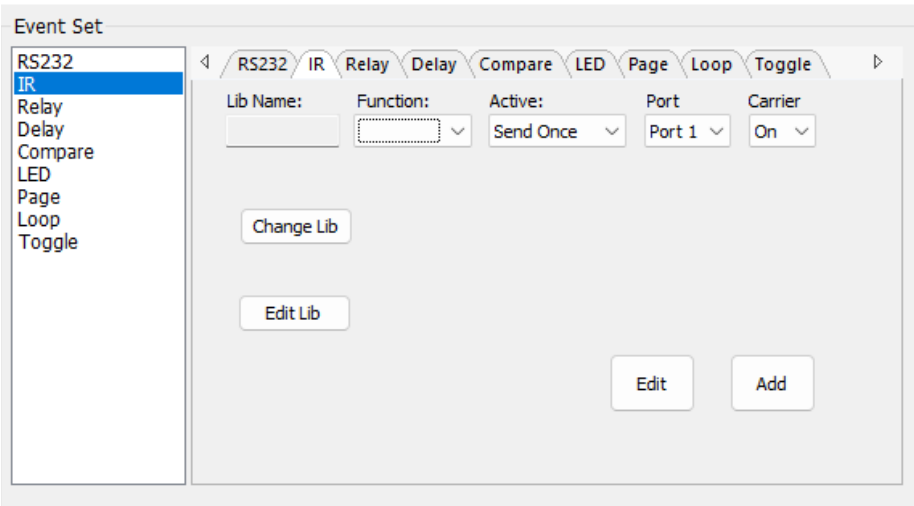


3. The send port must be selected as the same as model setting, otherwise the event cannot be added.
4. User can set the event name if desired.

EVENT SETTING (CONTINUED)

- **IR Setting**

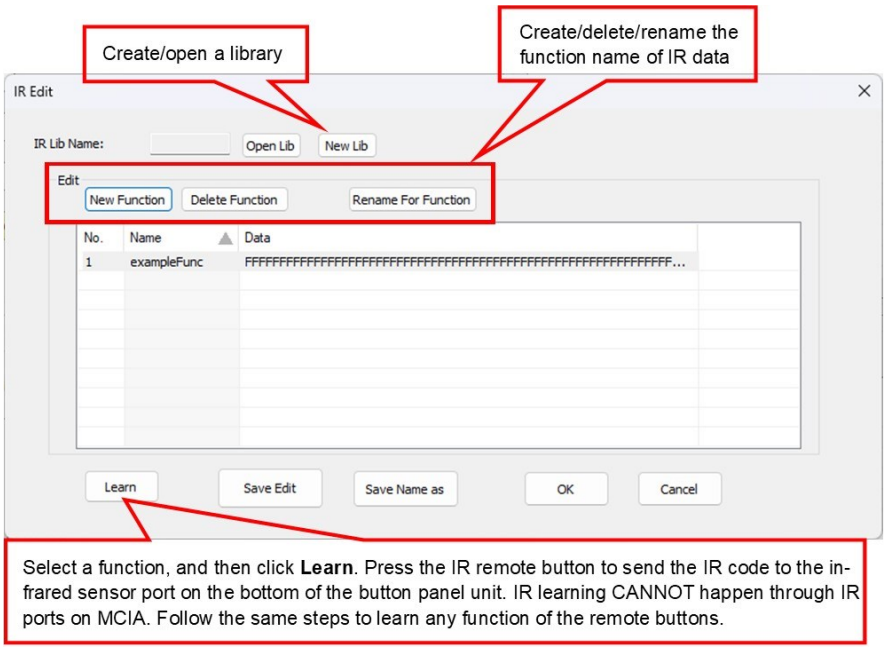
This item sets the parameters of the AV Controller's IR ports. Click **IR**; it will show as below:



EVENT SETTING (CONTINUED)

- **IR Setting (continued)**

1. The data of IR must be selected from the library. Click **Change Lib** to select a library file and open it. Click **Edit Lib** to create or edit a library file as below:

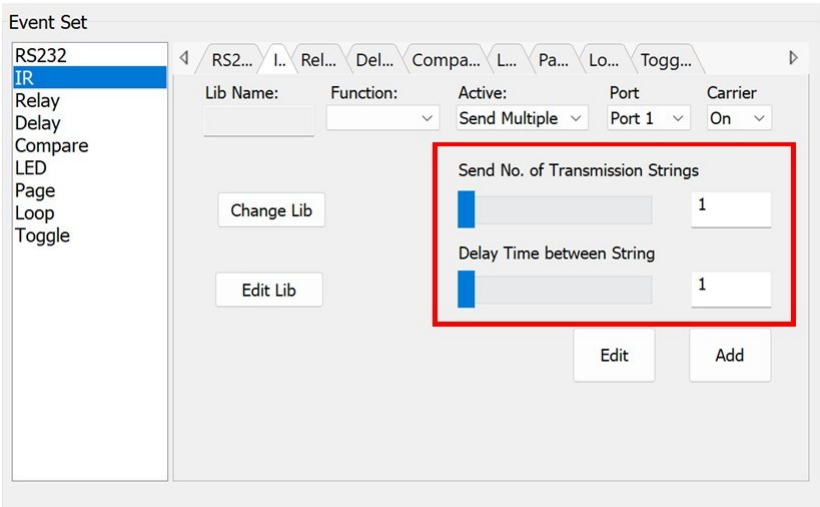


EVENT SETTING (CONTINUED)

- **IR Setting (continued)**

Note: When finished editing, remember to save the editing, and then press **OK**.

2. There are two send types: **Send Once** and **Send Multiple**. When selecting **Send Multiple**, the user can set the send times and the delay between times. See the picture below:

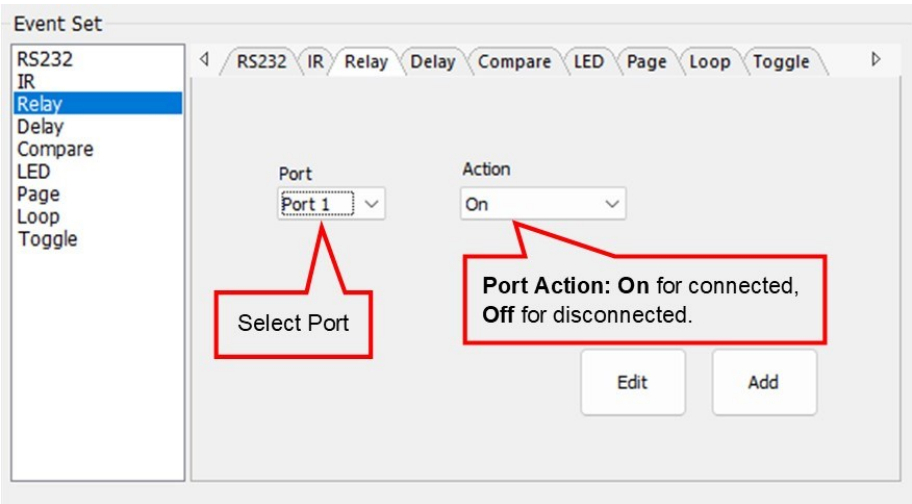


3. The selected send port must be the same as the model setting; otherwise, the user cannot add the event.
4. The IR can set the carrier on/off to turn on/turn off the IR sending.

EVENT SETTING (CONTINUED)

- **Relay/12V Trigger Setting**

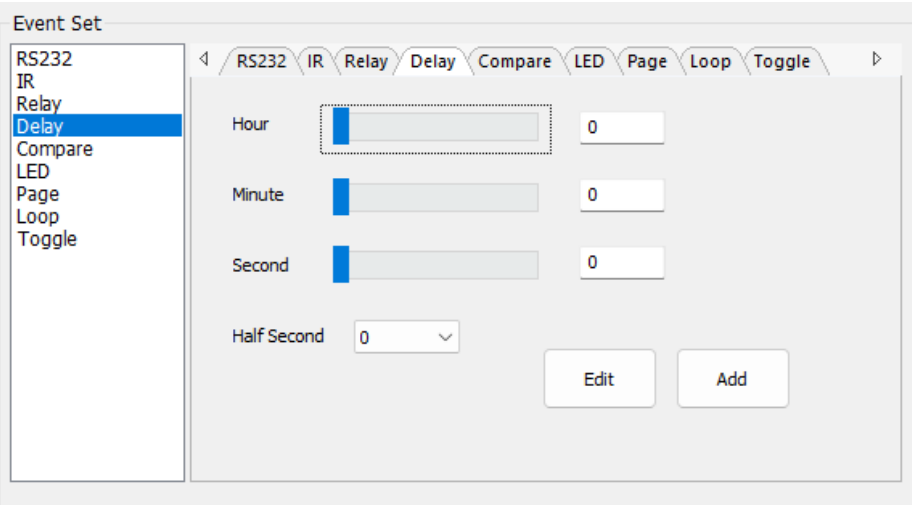
This item is for the relay ports setting. When using MCIA, this feature is used for the 12V Trigger.
The setting is as shown in the picture below:



EVENT SETTING (CONTINUED)

- **Delay Setting**

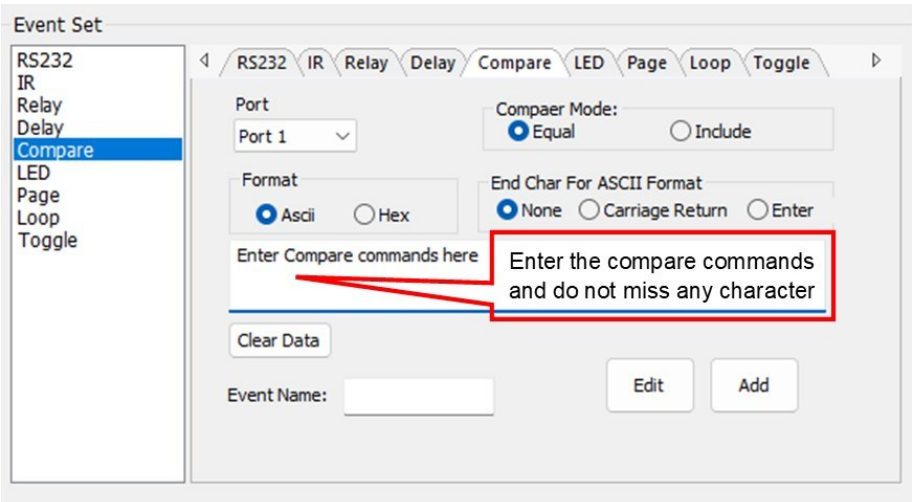
This item is to set a delay time, the user can add a delay between two events, so when one event is finished, it will delay a certain time and then start another event. The delay setting is as shown in the picture below:



EVENT SETTING (CONTINUED)

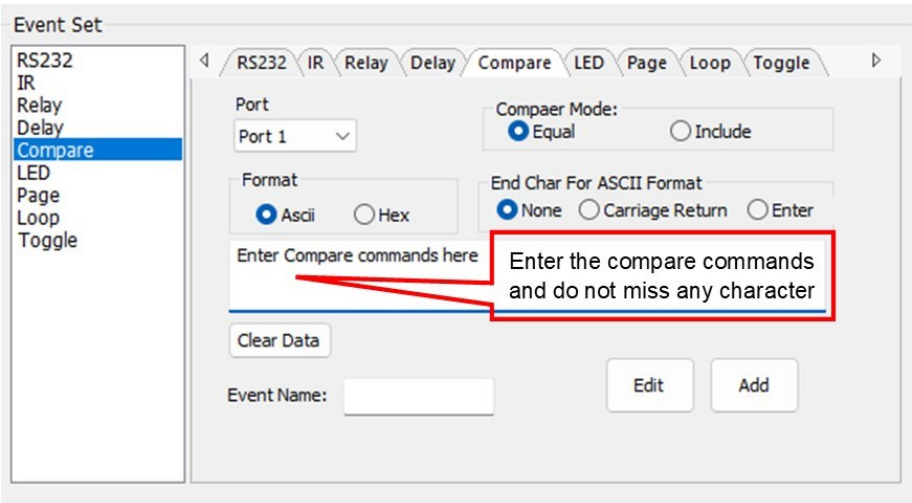
- **Compare Setting**

This item is used to compare the feedback of RS232 commands. When the AV Controller sends an RS232 command to the controlled device, the device will send back feedback. If we add the correct feedback in the data, the AV Controller will compare it with the feedback from the controlled device to verify whether the command works. The compare setting is as shown in the picture below:



EVENT SETTING (CONTINUED)

- **Compare Setting (continued)**

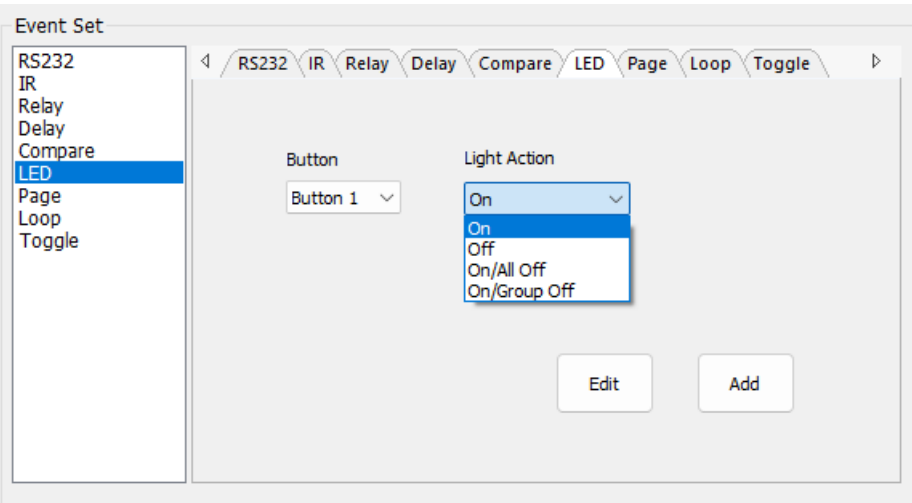


1. Select the send port to be the same as model setting; otherwise, the user can not add the event. Port 1 cannot be used for Compare, as there is no receive pin in this port.
2. If desired, the user can set the event name; it is an optional, unnecessary function.
3. The events in one event list have priority from top to bottom so that the Compare function can be used with three or more events. We can add a Compare to other events when sending a serial command. If the Compare is incorrect, the event after Compare will not be executed.

EVENT SETTING (CONTINUED)

- **LED Setting**

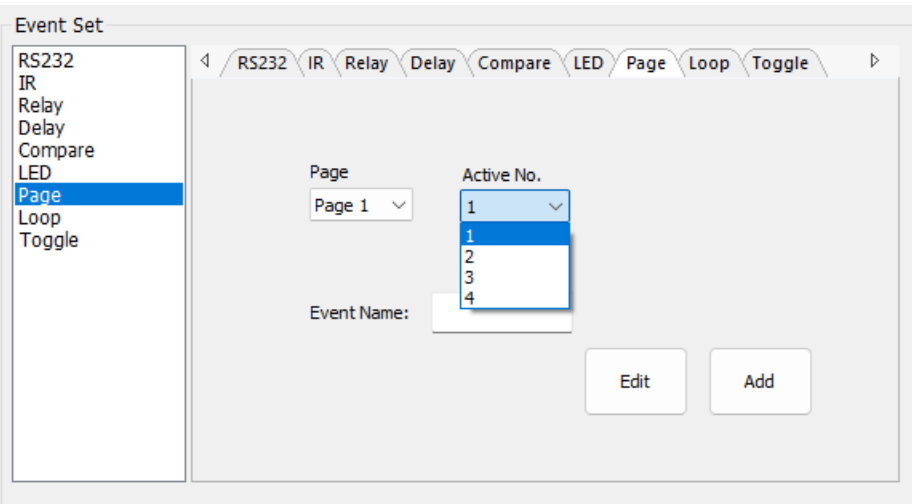
This item is used to set the button LEDs in the AV Controller to turn on/off. The setting is as shown below:



EVENT SETTING (CONTINUED)

- **Page Setting**

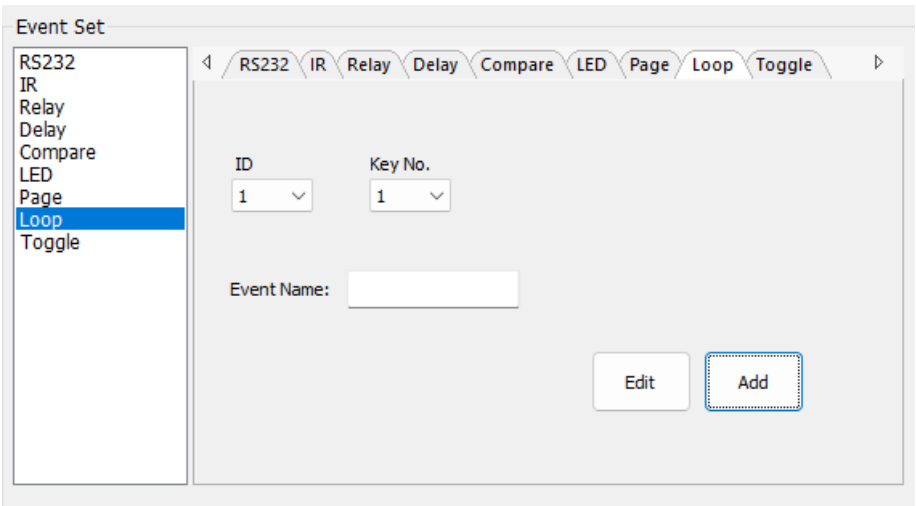
Users can set the white buttons to **Page** type, which includes four actions. To change different actions, it will need other white buttons to activate the page action number.



EVENT SETTING (CONTINUED)

- **Loop Setting**

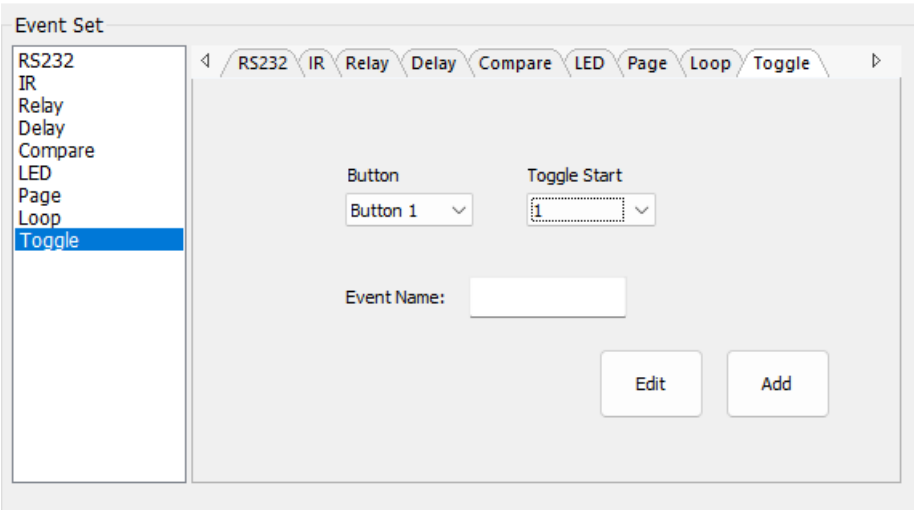
This item is used for executing commands on other units when connecting multiple controllers. When use the loop function, the ID of each programmable control panel must be set.



EVENT SETTING (CONTINUED)

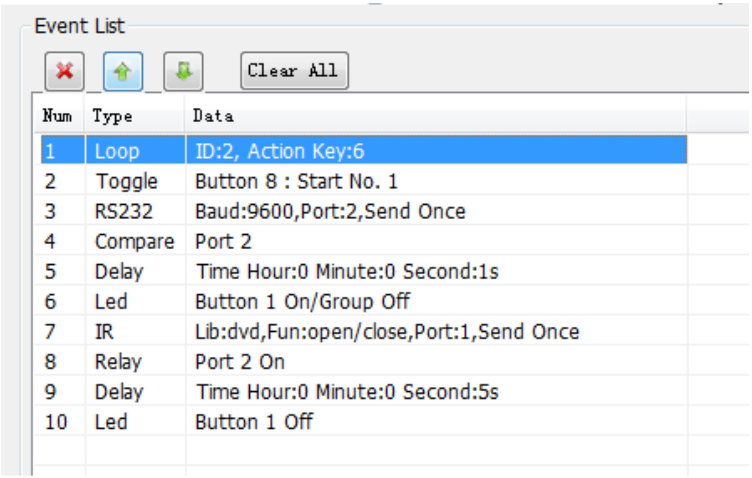
- **Toggle Setting**

The toggle setting is as the picture below:



EVENT LIST

The **Event List** shows all events of the selected action. The executing priority abides by the serial number; see the picture below. If the execution of an event is done incorrectly, all the events behind it will not be executed.



SPECIFICATIONS

Program Port	USB or RS232
Output Port	(3) RS232, (1) RS485, (3) IR, (2) Relay
Serial Control Port	RS232
Baud Rate And Protocol	9600 baud, 8 data bits, 1 stop bit, no parity
Software	C2G-Control
Frequency Response	20Hz ~20KHz
Operation Temperature	-10 ~ +55C
Storage Temperature	-25 ~ +70C
Relative Humility	10%-90%
Power Supply	Input: 100VAC~240VAC, 50/60 Hz;
Max Power Consumption	1W
Dimension (W*H*D)	114mm x 70mm x 28mm
Net Weight	150g

IMPORTANT SAFETY INFORMATION

Do not plug the unit in any outlet that does not have enough current to allow the device to function. Refer to the specifications in this manual for power level of the unit.

Liquid: If this unit or it's corresponding power adapter has had liquid spilled on or in it, do not attempt to use the unit. Do not attempt to use this product in an outdoor environment as elements such as rain, snow, hail, etc. can damage the product.

In case of a storm, it is recommended that you unplug this device from the outlet.

Avoid placing this product next to objects that produce heat such as portable heaters, space heaters, or heating ducts.

THERE ARE NO USER SERVICEABLE PARTS. Do not attempt to open this product and expose the internal circuitry. If you feel that the product is defective, unplug the unit and refer to the warranty information section of this manual.

C2G WARRANTY

At C2G we want you to be totally confident in your purchase. That is why we offer a warranty on this device. If you experience problems due to workmanship or material defect for the duration of this warranty, we will repair or replace this device.

To request a Return Merchandise Authorization (RMA) number, contact customer service at 800-293-4970 or www.c2g.com.

NOTES

FCC Statement

Note: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Statement - §15.105(b):

"This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution - §15.21:

"Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment."

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