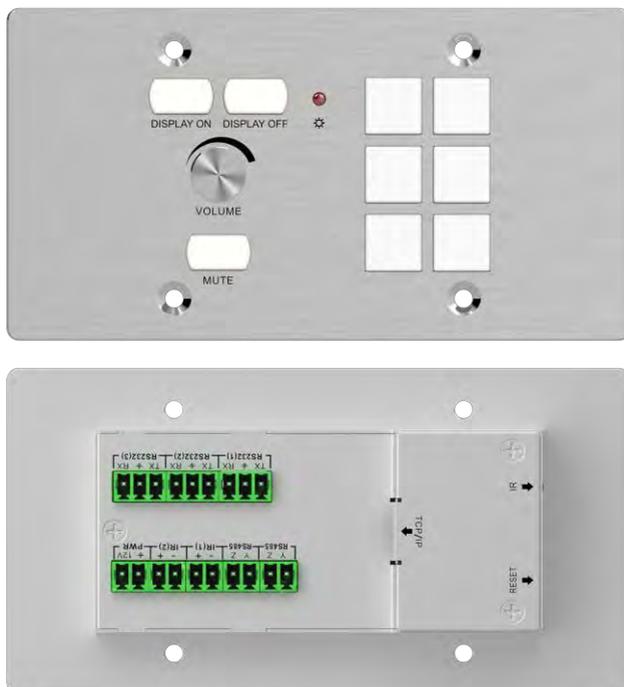


# User Manual

## CP9IP-EU

### Wallplate Control Panel

8 programmable buttons plus 1 audio mute button, 3 built-in programmable RS232, 2 RS485 and 2 IR connectors.



**All Rights Reserved**

Version: CP9IP-EU\_2018V1.0

### **Preface**

Read this user manual carefully before using the product. Pictures are shown in this manual for reference only, different models and specifications are subject to real product.

This manual is only for operation instruction, please contact the local distributor for maintenance assistance. The functions described in this version were updated till January, 2018. In the constant effort to improve the product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.

### **FCC Statement**

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. It 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 commercial installation.

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

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

### SAFETY PRECAUTIONS

To ensure the best performance from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

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# 1. Introduction

## 1.1 Introduction to CP9IP-EU

The CP9IP-EU is a wallplate control panel with 8 programmable buttons plus 1 audio mute button. It features 3 built-in programmable RS232, 2 RS485 and 2 IR connectors.

The programmable control panel can fully control the compatible device via TCP/IP, RS232, RS485 and IR, such as matrix switcher, scaler switcher, projectors, screens, etc. Use the device for presentations in showrooms, classrooms, and boardrooms.

## 1.2 Features

- Features 8 programmable buttons plus 1 audio mute button, 3 built-in programmable RS232, 2 RS485 and 2 IR connectors.
- Each button can be programmed to send RS232, RS485, IR or TCP/IP commands simultaneously to control third party devices.
- The unit can be easily configured using the supporting control panel via the ENTERNET port.
- The volume control buttons are specially designed for various applications.
- Crystal and backlit buttons with easy user-friendly customizable changeable labels.
- The backlit brightness is controllable.

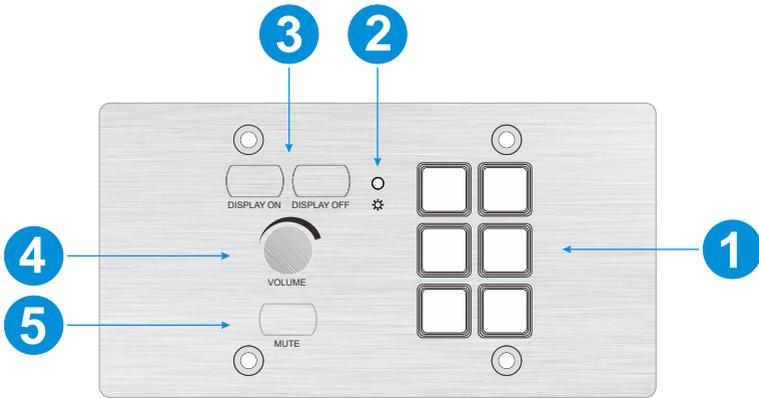
## 1.3 Package List

- 1 x CP9IP-EU-IP
- 5 x 2-pin pluggable terminal blocks
- 6 x Button caps
- 1 x User manual
- 1 x Power adapter (12VDC 1A)
- 3 x 3-pin pluggable terminal blocks
- 1 x Button label

**Note:** Please confirm if the product and the accessories are all included, if not, please contact with the dealers.

## 2. Panel Description

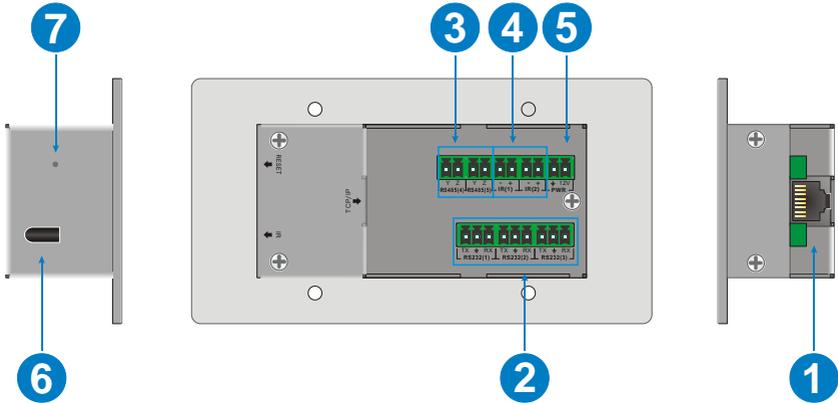
### 2.1 Front Panel



No.	Name	Description
1	Button	<p>6 crystal and luminescent buttons, programmable functions can be customized via the Control Software.</p> <p>Each label within a button can be easily changed. Simply select the label you need and change it as shown below:</p>
2	Power LED	The LED illuminates red when power is applied.
3	DISPLAY ON	The button can be customized to turn on the third-party device.
	DISPLAY OFF	The button can be customized to turn off the third-party device.
4	VOLUME	The rotary knob can be customized as Volume Up and Volume Down buttons for specific application.
5	MUTE	The button can be customized as Toggle Mute and Unmute buttons for specific application.

## Wallplate Control Panel

### 2.2 Rear Panel

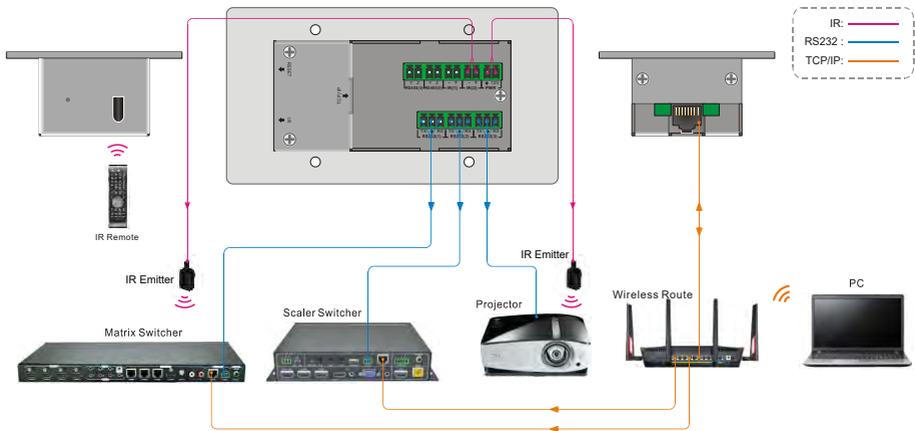


No.	Name	Description
1	ETHERNET	<p>RJ45 connector for connecting PC to run the Control Software to customize the programmable functions for all buttons.</p> <p>After buttons programming, the RJ45 connector should be connected to the third-party device which needs to be controlled via TCP/IP.</p> <p><b>Note:</b> <i>The wallplate control panel and third-party devices can connected to the LAN to facilitate remote control and simplify system connection.</i></p>
2	RS232 (1) ~ RS232 (3)	3-pin RS232 terminal blocks for connecting the third-party devices which need to be controlled via RS232.
3	RS485 (4) ~ RS485 (5)	2-pin RS485 terminal blocks for connecting the third-party devices which need to be controlled via RS485.
4	IR (1) ~ IR (2)	2-pin IR terminal blocks for connecting with IR emitters to control the third-party devices via IR.
5	PWR(12V)	2-pin terminal block for connecting 12V DC power adaptor.
6	IR Sensor	Built-in IR receiver for receiving IR code from IR remote to build the IR database.
7	RESET	Press and hold this button for 3 seconds until the power LED goes out. Then the LED will light up while the device is restored to factory defaults successfully.

### 3. System Connection

The CP9IP-EU can active different ports at the same time. It means that every button can send RS232, RS485, TCP/IP and IR control signal synchronously.

The demo system diagram as below:



- 1) Connect the CP9IP-EU to a **LAN** port of Wireless Route.
- 2) Connect a control PC to the Wireless Route.
- 3) Connect the third-party devices (such as matrix switcher and scaler switcher) to the **LAN** port of Wireless Route.
- 4) Connect the third-party devices (such as matrix switcher, scaler switcher and projector) to **RS232 (1)**, **RS232 (2)** and **RS232 (3)** ports.
- 5) The third-party devices which support RS485 communication can be connected to **RS485 (4)** and **RS485 (5)** ports.
- 6) Connect the IR Emitters to **IR (1)** and **IR (2)** ports.
- 7) Plug in 12V DC power supply adapter.

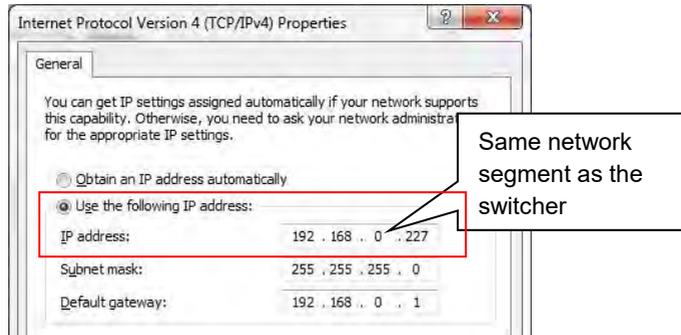
**Note:** The control PC can be directly connected to the **TCP/IP** port of CP9IP-EU to customized button functions. After buttons programming, disconnect the PC, and then connect the third-party device to the **TCP/IP** port.

### 4. Control Software

#### 4.1 Basic Setting

The Control Software is used to easily set functions for every button.

- 1) According to the system diagram to establish system connection.
- 2) The default IP of WP9EU-IP is 192.168.0.178 (modifiable), the network segment of control PC must be set the same as the WP9EU-IP's.



#### 3) Installation/uninstallation of Control Software:

- Installation: Copy the software package to the control PC.
- Uninstallation: Delete all the software files in corresponding file path.

## Wallplate Control Panel

4) Double-click the below icon to run this software:

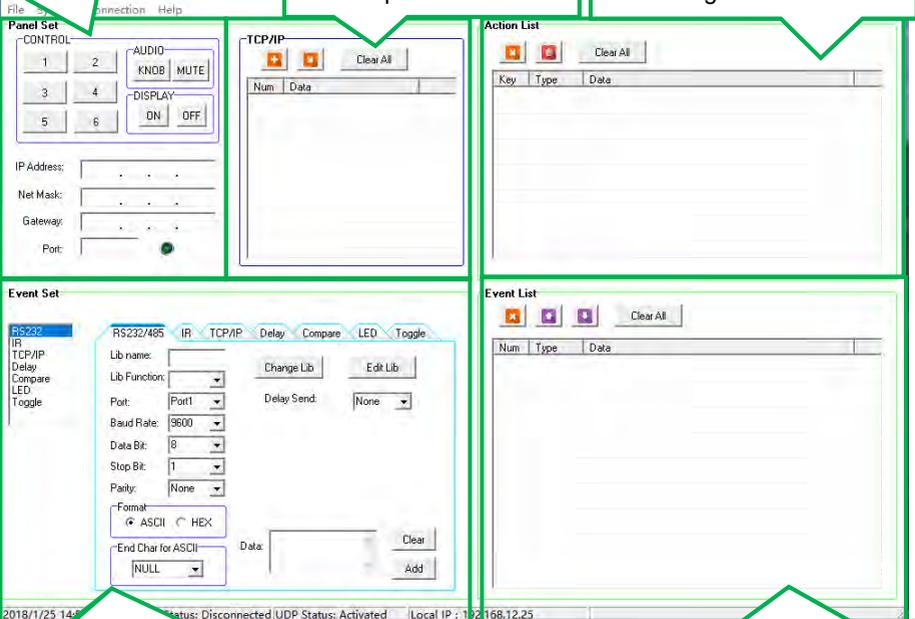


The below main window has five parts: Panel Set, TCP/IP, Action List, Event Set and Event List.

Panel Set: Click any key to set its action.

Show IP addresses of all connected wallplate control panels in LAN.

Show all key actions, and any action can be chosen for setting events.



The screenshot shows the main window of the Wallplate Control Panel software. The interface is divided into several sections:

- Panel Set:** A grid of 6 buttons (1-6) and two sets of controls: AUDIO (KNOB, MUTE) and DISPLAY (DN, OFF). Below are fields for IP Address, Net Mask, Gateway, and Port.
- TCP/IP:** A table with columns 'Num' and 'Data' and a 'Clear All' button.
- Action List:** A table with columns 'Key', 'Type', and 'Data' and a 'Clear All' button.
- Event Set:** A section for configuring events, including a list of keys (RS232, IR, TCP/IP, Delay, Compare, LED, Toggle) and a configuration area with fields for Lib name, Lib Function, Port, Baud Rate, Data Bit, Stop Bit, Parity, Format (ASCII/HEX), End Char for ASCII, and Data.
- Event List:** A table with columns 'Num', 'Type', and 'Data' and a 'Clear All' button.

At the bottom, a status bar shows: 2018/1/25 14:55, Status: Disconnected, UDP Status: Activated, Local IP: 172.168.12.25

Set events for the selected key action.

Show all events for the selected key action.

## Wallplate Control Panel

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### Menu Options of Control Software:

The header of the main window features four titles including File, System, Connection and Help.

- Click “File” → “Open” to invoke an available configuration file.
- Click “File” → “Save” to save the current configuration data into the installation directory.
- Click “File” → “Save as” to export all configuration information and save as a file.
  
- Click “System” → “Version” to query the current software version.
- Click “System” → “Message” to query the Link Status, Machine Type, Software Version, IP Information, MAC address.
- Click “System” → “Software Update” → Open upgrade Web page (<http://192.168.0.178:4001/>) on IE → Type User ID (admin) and Password (123456) → upload update file → Click “Upload” → Click “Reset MCU”.
- Click “System” → “Factory Defaults” to restore factory defaults.
  
- Click “Connection” → “TCP/IP” → “Reconnect” to refresh all connected WP9EU-IP.
- Click “Connection” → “Read from Device” → to load the MCU data of the selected WP9EU-IP to control software.
- Click “Connection” → “Write to Device” → to download the current configuration data of control software to the selected WP9EU-IP.

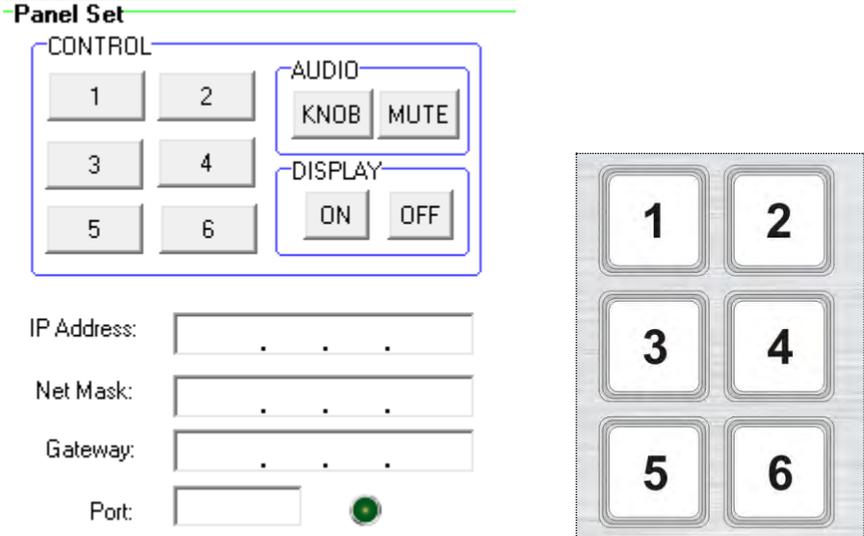
### Button Setting Procedure:

The nine programmable buttons should be set by the following steps:

- 1) Click any button to set key actions, refer to **4.2 Panel Set**.
- 2) Select any key action, refer to **4.3 Action List**.
- 3) Set the button functions for the selected key action, refer to **4.4 Event Setting** and **4.5 Event List**.

## 4.2 Panel Set

The below Panel Set part shows 9 customizable buttons can be programmed via the control software.

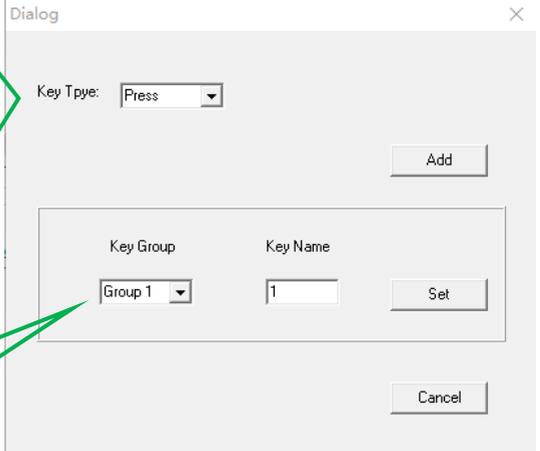


Buttons 1-6, KNOB, MUTE, ON, OFF, correspond to the buttons on WP9EU-IP. For example, click the button 1 to set its key action as below:

### Key Type:

- Press: Execute events when press button.
- Release: Execute events when release button.
- Toggle: The button can be regard as composite key, press and press again to execute different events.

Built key group for LED setting.



### 4.3 Action List

All key actions will be shown on the below action list.

#### Action List

The screenshot shows the Action List interface. At the top, there are three buttons: a delete button (orange square with a white 'x'), a trash can icon, and a 'Clear All' button. Below these buttons is a table with three columns: 'Key', 'Type', and 'Data'. The table contains three rows of data. Callouts with green boxes and arrows point to the buttons and table rows, providing instructions on their functions.

Key	Type	Data
1	Key1	Press
2	Key2	Press
3	Key3	Toggle

Empty all actions.

Delete the selected action.

Delete all invalid actions which have no events.

### 4.4 Event setting

The Event Set part supports RS232, RS485, IR, TCP/IP, Delay, Compare, LED and Toggle setting. Before set events, at least one key action must be added first. The following introduction is about how to set events for each action.

#### 4.4.1 RS232 Setting

This item is used for setting the events of the selected key action to control the third-party device through RS232 (1~3) and RS485 (4~5) ports.

#### -Event Set

RS232/485 IR TCP/IP Delay Compare LED Toggle

Lib name:

Lib Function:

Port:

Baud Rate:

Data Bit:

Stop Bit:

Parity:

Change Lib Edit Lib

Delay Send:

Format

ASCII  HEX

End Char for ASCII

Data:

Clear Add

#### Operation procedure:

- 1) Select a key action in action list.
- 2) Set the “Lib Name” and “Lib Function” as needed.
- 3) Select the RS232/485 port.
- 4) Confirm and set the baud rate, data bit, stop bit and parity.
- 5) Type RS232 command in data box, and then press “add” to save.

## Wallplate Control Panel

- 6) The RS232 data also can be selected from library. Click “Change Lib” to select an available library file, or click “Edit Lib” to create a new library file as below:

The screenshot shows a configuration dialog for RS232. At the top, there is a field for 'RS232 Lib Name' with the value '123'. To its right are buttons for 'Open Lib', 'New Lib', and a 'Function' dropdown menu set to 'Open'. Further right are buttons for 'New Function' and 'Delete Function'. Below this is a 'Data' section with a 'Format' dropdown (set to 'ASCII'), an 'End Char for ASCII Format' dropdown (set to 'NULL'), and a text input field containing 'Power ON'. To the right of the 'Data' section is a 'Set' section with three dropdown menus: 'Baud Rate' (9600), 'Data Bit' (8), and 'Stop Bit' (1). At the bottom of the dialog are buttons for 'Save', 'Save as', 'OK', and 'Cancel'. Three green callout boxes with arrows point to specific elements: one points to the 'Open Lib' button, another points to the 'Change Lib' and 'Edit Lib' buttons, and a third points to the 'Power ON' text input field.

Open/create a library

Create/delete the function name of the command.

Type RS232 command for device control.

**Note:** Once set up, please press “Save” to save the setting or press “Save as” to save the setting as a file, and then press “OK”.

- 7) The number of transmission strings and the delay time between strings can be set.

### Event Set

The screenshot shows the 'Event Set' configuration panel. On the left is a vertical list of event types: 'RS232', 'IR', 'TCP/IP', 'Delay', 'Compare', 'LED', and 'Toggle'. The 'RS232' option is selected and highlighted in blue. The main panel has several tabs: 'RS232/485', 'IR', 'TCP/IP', 'Delay', 'Compare', 'LED', and 'Toggle'. The 'RS232/485' tab is active. It contains several input fields: 'Lib name:', 'Lib Function:', 'Port:' (set to 'Port1'), 'Baud Rate:' (set to '9600'), 'Data Bit:' (set to '8'), 'Stop Bit:' (set to '1'), and 'Parity:' (set to 'None'). There are also buttons for 'Change Lib' and 'Edit Lib'. Below these are radio buttons for 'Format' (set to 'ASCII') and a dropdown for 'End Char for ASCII' (set to 'NULL'). To the right, there is a 'Delay Send:' dropdown set to 'Set'. A green-bordered box highlights two sliders: 'Send no.of transmission strings' and 'Delay time between string', both set to '1'. At the bottom, there is a 'Data:' input field with up/down arrows, and buttons for 'Clear' and 'Add'.

### 4.4.2 IR Setting

This item is used for setting the events of the selected key action to control the third-party device through IR (1~2) ports.

#### Event Set

RS232	RS232/485	IR	TCP/IP	Delay	Compare	LED	Toggle
IR							
TCP/IP							
Delay							
Compare							
LED							
Toggle							

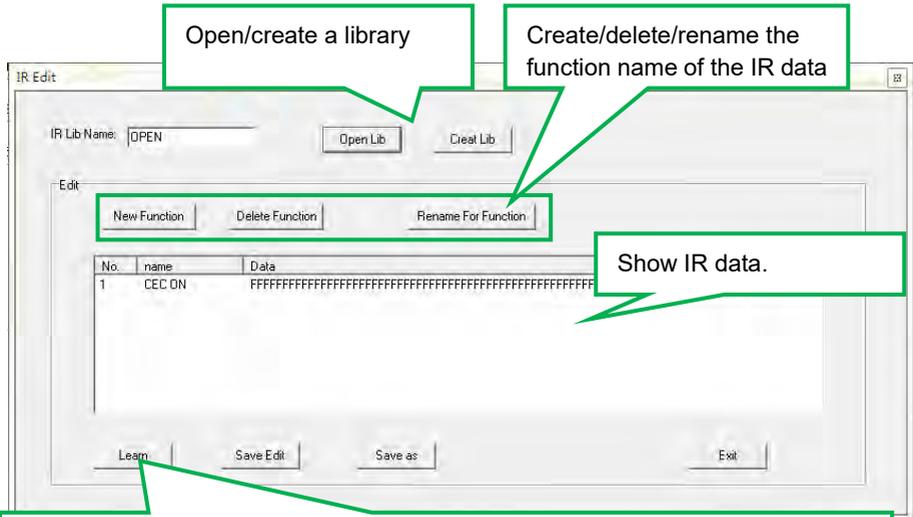
  

Lib name:	<input type="text" value="Open"/>	Delay Send:	<input type="text" value="None"/>
Lib Function:	<input type="text" value="CEC ON"/>		
Port:	<input type="text" value="Port1"/>		
Carrier:	<input type="text" value="On"/>		
<input type="button" value="Change Lib"/>		<input type="button" value="Edit Lib"/>	
<input type="button" value="Add"/>			

## Wallplate Control Panel

### Operation procedure:

- 1) Select the key action in action list.
- 2) Set the “Lib name” and “Lib Function” as needed.
- 3) Select the IR port.
- 4) Set the IR carrier mode: On/Off.
- 5) Click “Change Lib” to select an available library file or click “Edit Lib” to create or edit a library file as below:



### IR leaning procedure:

- 1) Click “Learn” to enter IR learning mode.
- 2) Put the IR Remote close to the IR sensor of wallplate control panel.
- 3) Press any button on the IR Remote to send the IR code to the IR sensor, and the IR edit box will refresh the IR data.
- 4) Follow the above steps can learn other function of the remote buttons.

**Note:** The IR learning mode will be exit automatically while if no operation within 3 seconds.

**Note:** Once set up, please press “Save Edit” to save the setting or “Save as” to save as a file, and then press “OK”.

## Wallplate Control Panel

- 8) The number of transmission strings and the delay time between strings can be set.

### Event Set

The screenshot shows the 'Event Set' configuration window. On the left is a list of event types: RS232, IR, TCP/IP, Delay, Compare, LED, and Toggle. The 'IR' option is selected. The main panel has tabs for RS232/485, IR, TCP/IP, Delay, Compare, LED, and Toggle. The 'IR' tab is active. The configuration fields are as follows:

- Lib name: Open
- Delay Send: Set
- Lib Function: (empty dropdown)
- Port: Port1
- Carrier: On
- Send no.of transmission strings: 1 (slider and input field)
- Delay time between string: 1 (slider and input field)

At the bottom are three buttons: Change Lib, Edit Lib, and Add.

### 4.4.3 TCP/IP Setting

This item is used for setting the events of the selected key action to control the third-party device through TCP/IP port.

-Event Set

- RS232
- IR
- TCP/IP**
- Delay
- Compare
- LED
- Toggle

Type the IP address of third-party device.

RS232/485 IR TCP/IP Compare LED Toggle

IP:

Port:

Format:  ASCII  HEX

End Char for ASCII:

Data:

Clear

Add

Type the control command.

### 4.4.4 Delay Setting

This item is used for setting the delay time between two events. If set the delay time to be 3 seconds, it means that the first event starts executing at 12:00:00, followed by the second event executing at 12:00:00:03.

The delay time setting showed as below:

Event Set

- RS232
- IR
- TCP/IP
- Delay
- Compare
- LED
- Toggle

Hour: 0~23  
Minute: 0~59  
Second: 0~59

Hour: 1  
Minute: 11  
Second: 18

Reset Add

### 4.4.5 Compare Setting

This item is used for comparing the RS232 feedback commands. When trigger button to send RS232 command to the third-party device, the device will send back a feedback command. If we add the correct command in the data box, the WP9EU-IP will compare it with the received feedback command to verify the availability of sending command. The compare setting showed as below:

#### Event Set

The screenshot shows the 'Compare' configuration screen in the Wallplate Control Panel. The 'Compare' tab is selected. The 'Port' is set to 'Port1'. The 'Format' is set to 'ASCII' (radio button selected). The 'End Char for ASCII' is set to 'NULL'. The 'Data' field is empty. There are 'Clear' and 'Add' buttons. A callout box points to the 'Data' field with the text: 'Enter the correct commands, please don't miss any character.'

#### Operation procedure:

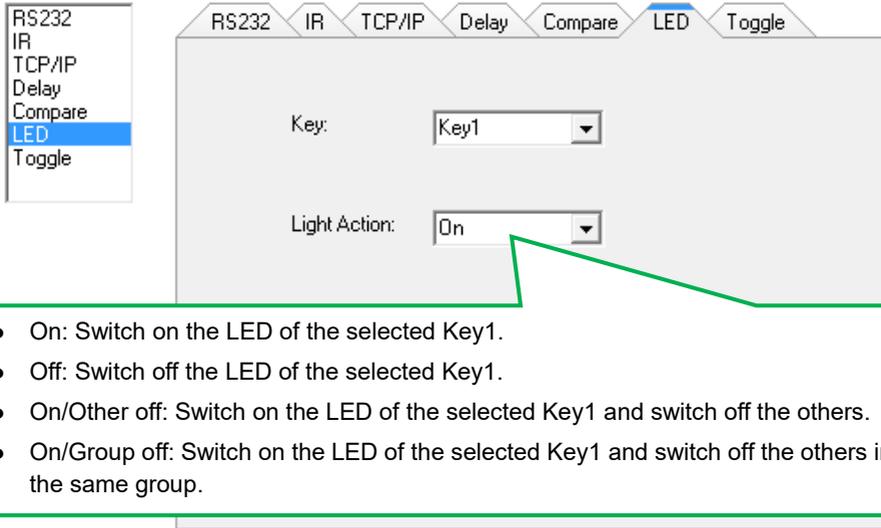
- 1) Select the key action in action list.
- 2) Select the RS232 port.
- 3) Set the command format ASCII or Hex, and then set the terminator for ASCII.
- 4) Type the correct RS232 command in data box, and then press "add" to save the command.
- 5) Add an event that the LED lights up to indicate the comparison result.
- 6) The executing priority of events in event list is from top to bottom, so that the comparing function can be used for the key action which with three or more events.

### 4.4.6 LED Setting

This item is used for setting the LEDs status of programmable buttons to indicate the results of executing event.

#### Event Set

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The screenshot displays the 'LED' configuration interface. The top navigation bar includes tabs for RS232, IR, TCP/IP, Delay, Compare, LED (selected), and Toggle. On the left, a dropdown menu lists event types: RS232, IR, TCP/IP, Delay, Compare, LED (highlighted), and Toggle. The main configuration area contains two dropdown menus: 'Key:' set to 'Key1' and 'Light Action:' set to 'On'. A callout box points to the 'Light Action:' dropdown, listing the following options:

- On: Switch on the LED of the selected Key1.
- Off: Switch off the LED of the selected Key1.
- On/Other off: Switch on the LED of the selected Key1 and switch off the others.
- On/Group off: Switch on the LED of the selected Key1 and switch off the others in the same group.



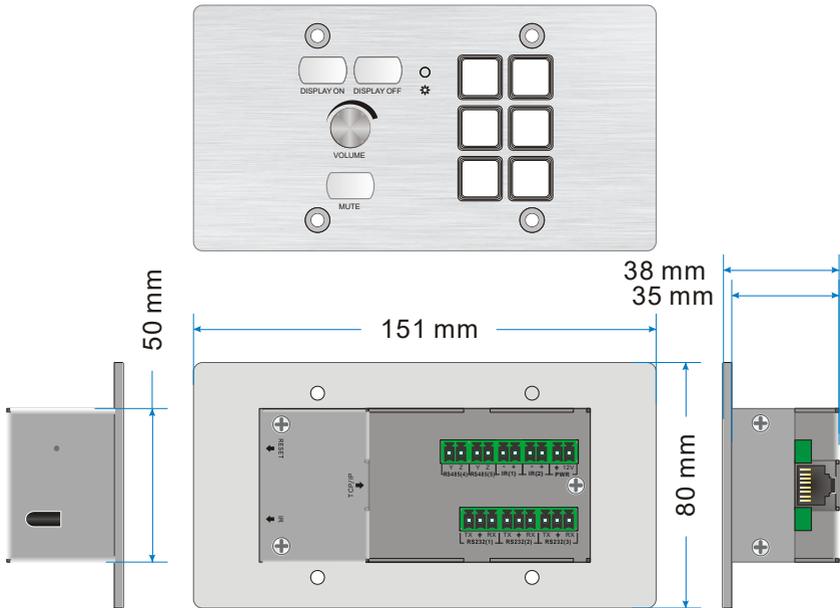




## 5. Specification

Control Port	(1) TCP/IP, (3) RS232, (2) RS485 and (2) IR out
Control Port Connector	(1) RJ45 (3) 3-pin pluggable terminal blocks (4) 2 pin pluggable terminal blocks
Control Buttons	(6) Programmable buttons (2) Programmable display control buttons (1) Programmable volume knob (1) Programmable MUTE button
Other	(1) Built-in IR sensor
Baud Rate	Supports 2400, 4800, 9600, 19200, 38400, 56000, 57600, 115200.
Software	WP9EU-IP
Power Consumption	1W (Max)
Operation Temperature	-10 ~ +55°C
Storage Temperature	-25~ +70°C
Relative Humidity	10% ~ 90%
Power Supply	Input: 100VAC~240VAC, 50/60 Hz; Output: 12VDC 1A
Net Weight	About 300g
Dimension (W*H*D)	151mm x 80mm x 38mm

## 6. Panel Drawing



### 7. Troubleshooting & Maintenance

- 1) When WP9EU-IP cannot work, please check and make sure the power cord connection is well, power connector cannot be mixed or connect wrong. Then restart, if still not work, the WP9EU-IP may be broken. Please send it to the dealer for repairing.
- 2) When connect unsuccessfully, please make sure the network segment of control PC and the WP9EU-IP is same.
- 3) When the LED of a button cannot be lighted, please check if there is a compare event in this button. If yes, delete the compare and try again. If still not work, the LED may be broken. Please send the unit to dealer for repairing.
- 4) When serial commands sending without function executed, please check the baud rate and make sure is correct, and the serial connection is well.
- 5) If the controlling queue is confused when use loop function, please reboot the WP9EU-IP.

If your problem still remaining after following the above troubleshooting steps, please contact your local dealer or distributor for further assistance.

## 8. Customer Service

The return of a product to our Customer Service implies the full agreement of the terms and conditions hereinafter. These terms and conditions may be changed without prior notice.

### 1) Warranty

The limited warranty period of the product is fixed three years.

### 2) Scope

These terms and conditions of Customer Service apply to the customer service provided for the products or any other items sold by authorized distributor only.

### 3) Warranty Exclusions:

- Warranty expiration.
- Factory applied serial number has been altered or removed from the product.
- Damage, deterioration or malfunction caused by:
  - ✓ Normal wear and tear.
  - ✓ Use of supplies or parts not meeting our specifications.
  - ✓ No certificate or invoice as the proof of warranty.
  - ✓ The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
  - ✓ Damage caused by force majeure.
  - ✓ Servicing not authorized by distributor.
  - ✓ Any other causes which does not relate to a product defect.
- Shipping fees, installation or labor charges for installation or setup of the product.

### 4) Documentation:

Customer Service will accept defective product(s) in the scope of warranty coverage at the sole condition that the defeat has been clearly defined, and upon reception of the documents or copy of invoice, indicating the date of purchase, the type of product, the serial number, and the name of distributor.

**Remarks:** For further assistance or solutions, please contact your local distributor.