# CDPS-CS4

## Control System


μCS

# Operation Manual

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## TRADEMARK ACKNOWLEDGMENTS

## SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.

Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

## REVISION HISTORY

| VERSION NO. | DATE (DD/MM/YY) | SUMMARY OF CHANGE |
|---|---|---|
| VR0 | 20/07/15 | Preliminary release |
| | | |
| | | |

# CONTENTS

## 1. INTRODUCTION

By entering into a new era of smart world, the trend of controlling everything with one finger is nowadays foreseen. Control System allows your dream come true by providing not only direct but also indirect control interfaces for all your devices. Direct control like IR, Relay and DC controls allow users to maintain the traditional connection control over the device whereas, indirect control like IR Learning, RS-232, Telnet/WebGUI controls allow users with computing system or APP to control over the devices. Overall, the management of all the controls can be operated easily through IR remote control, RS-232, Telnet or Ethernet protocols.

## 2. APPLICATIONS

- Smart Home Installation
- Even hall/Showroom control

## 3. PACKAGE CONTENTS

- 1×Control System
- 1× IR Learner Cable
- 4× IR Blaster Cables
- 4×3.5mm to 3.5mm IR Cables
- 4×Terminal Block Jacks
- 1×Remote Control
- 1×5V/2.6A Power Adaptor
- 1×Left and Right Rack Ears
- 1×Operation Manual

## 4. SYSTEM REQUIREMENTS

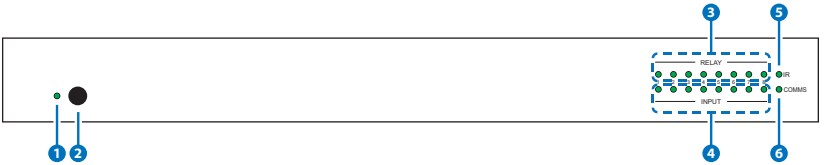
Input source equipment such as light, TV, power switch and ….etc. and PC/Laptop.

## 5. FEATURES

- Supports IR Learning function allows IR signal to be accepted by computing system
- Supports eight inputs with voltage of 0~15V
- Supports 1 IR Learning, 8 IR outputs, 8 trigger inputs, 8 Relay outputs, 2 COM ports, and 4 Ethernet ports
- Supports Baud rate from 4800bps to 115200bps
- Supports 10/100 Ethernet network connection

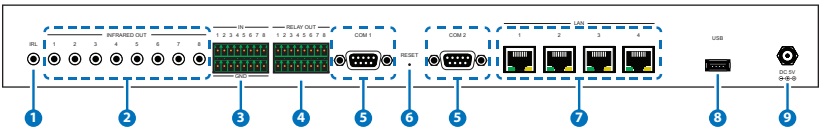
## 6. OPERATION CONTROLS AND FUNCTIONS

### 6.1 Front Panel



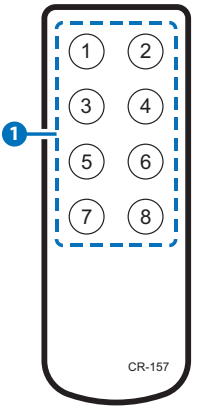

1. **POWER LED:** This LED will illuminate when the device is switched on.
2. **IR WINDOW:** Receives IR signal frquency from the remote control and can trigger macro even 1~8.
3. **RELAY LED:** These LEDs represent the relay output connections status.
4. **INPUT LED:** These LEDs will illuminate when trigger the input connection obtain active high DC of 5~15V which is also when signals has been triggered.
5. **IR LED:** This LED will illuminate when the device is receiving or sending IR signal, under IR Learning process the LED will illuminate also.
6. **COMMS LED:** This LED will illuminate when the COM port is sending or receiving data, under Macro run command executing the LED will be flashing according to the numbers of command send.

## 6.2 Rear Panel



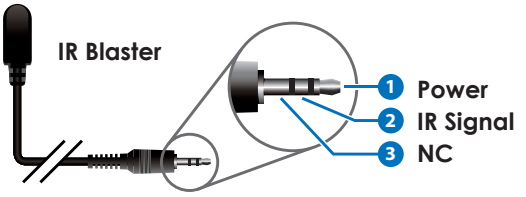

1. **IRL:** Connect with IR Receiver included in the package for IR signal learning. Send the IR signal that is to be learned by press on the remote control in direct line-of-sight towards the Receiver and record the IR data into digital format from WebGUI. For software details please refers to section 6.9.3.
2. **INFRARED OUT 1~8:** Connect with IR Blaster for IR signal transmitting. Place the IR Blaster in direct line-of-sight of the equipment to be controlled.
3. **IN 1~8:** Connect with sensor device's signal lines such as window security alarm, door switch, and etc… for trigger signal sending back to Control System.
4. **RELAY OUT 1~8:** Connect with control device's power line cable such as DC power supply to activate the control devices.
5. **COM 1~2:** Connect with RS-232 devices for command sending and controllig the devices.
6. **RESET:** To reset IP back to factory default, press and hold the button with pin for 10 seconds and both IR and comm LED will illuminate.
7. **LAN 1~4:** Connect with PC/Laptop or intra-net hub and also the LAN connection of the control devices for Telnet/WebGUI control over the devices.
8. **USB:** This slot is reserved for factory firmware update only.
9. **DC 5V:** Plug the 5V DC power supply into the unit and connect the adaptor to an AC outlet.

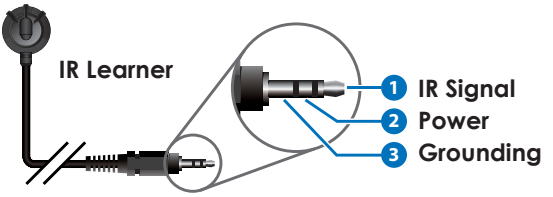
## 6.3 Remote Control




1 **1~8:** Press these buttons to trigger input signal of input 1~8 for control system to activate the corresponding command or setting.

## 6.4 IR Cable Pin Assignment



## 6.5 RS-232 DTE Pin Assignment

| DATA TERMINAL EQUIPMENT | |
|---|---|
| **Pin** | **Assignment** |
| 1 | NC |
| 2 | RxD |
| 3 | TxD |
| 4 | NC |
| 5 | GND |
| 6 | NC |
| 7 | NC |
| 8 | NC |
| 9 | NC |

Baud Rate: 4800~115200bps
Data bit: 7~8 bits
Parity: None, Odd, Even
Flow Control: None
Stop Bit: 1~2 Bits

## 6.6 RS-232 and Telnet Commands

| COMMAND | DESCRIPTION | PARAMETER |
|---|---|---|
| **IPCONFIG** | *Display the current IP configure* | NONE |
| **SIPADDR XXX.XXX. XXX.XXX** | *Set Ethernet IP address* | XXX=0~255 |
| **SNETMASK XXX. XXX. XXX.XXX** | *Set Ethernet net mask* | XXX=0~255 |
| **SGATEWAY XXX. XXX. XXX.XXX** | *Set Ethernet gateway* | XXX=0~255 |
| **SIPMODE** | *Set Ethernet IP mode* | N=STATIC/DHCP |
| **VER** | *Show unit firmware version* | NONE |
| **REBOOT** | *System reboot* | NONE |

| COMMAND | DESCRIPTION | PARAMETER |
|---|---|---|
| **FADEFAULT** | *All configure set to factory default** | NONE |
| **ETH_FADEFAULT** | *All Ethernet configure set to factory* | NONE |
| **HELP (?)** | *Show command list* | NONE |
| **HELP N** | *Show description of command* | N=COMMAND NAME |
| **RELAY N N1** | *Relay control* | N[PORT]=1~2<br>N1[MODE]=CLOSE/OPEN |
| **IREMIT N N1 N2** | *Send IR contenet* | N[PORT]=1~8,<br>N1[MODE]=(0)CYP, N2=IR EMIT DATA (STRING) |
| **COMSEND COM N N1** | *Send command to COM port* | N[PORT]=1~2<br>N1=COMMAND DATA (1~512 CHARS) |
| **COMCONF N N1 N2 N3 N4** | *Driver RS-232 config show COM port settings* | N[PORT]=1~2<br>N1[BAUDRATE]=4800, 9600, 19200, 38400, 57600, 115200<br>N2[DATA LEN]= 7, 8<br>N3[PARITY]=(0)NONE (1), ODD (2)EVEN<br>N4[STOP BIT]=1,2 |
| **MACRO STOP N** | *Stop Macro control* | N[PORT]=1~15 |
| **MACRO RUN N** | *Run Macro control* | N[PORT]=1~15 |

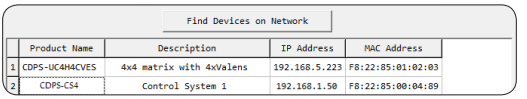
***Note:***

1. *Any commands will not be executed unless followed by a carriage return. Commands are case-sensitive.*
2. *Please ensure that all commands and settings have been saved before performing this command with Asterisk (*) as the procedure may restore all settings back to default.*

## 6.7 Software Application

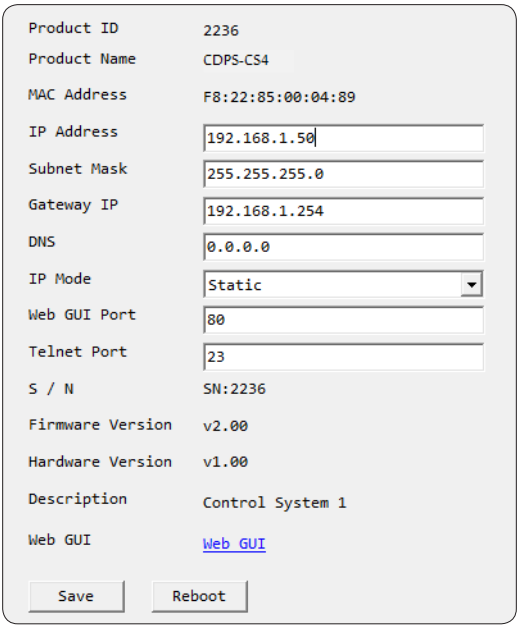
Please download the software from www.cypress.com.tw with file name CDPS V2.000 and save it in a directory where you may use it later.

Connect the Control System with an active network system and open the CDPS V2.000 application from the directory in a PC/Laptop. Click on Find Devices on Network and a list of the devices connected within the network system will show up.




| | Product Name | Description | IP Address | MAC Address |
|---|---|---|---|---|
| 1 | CDPS-UC4H4CVES | 4x4 matrix with 4xValens | 192.168.5.223 | F8:22:85:01:02:03 |
| 2 | CDPS-CS4 | Control System 1 | 192.168.1.50 | F8:22:85:00:04:89 |

Double click on the product name and an InfoFrom will appear to show the products' detail.




Then user may use the IP Address to find the control device through Telnet, WebGUI or even RS-232/Hyper Terminal tools.

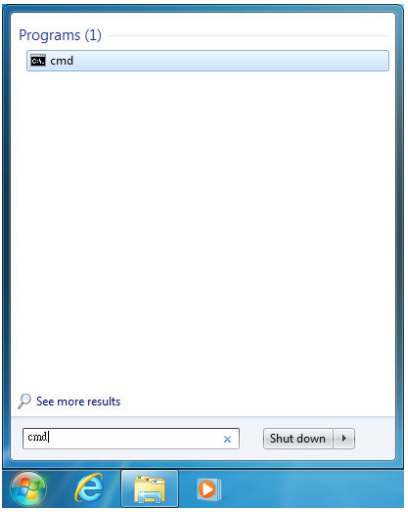
## 6.8 Telnet Control

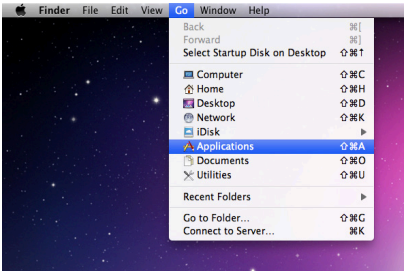
To access the Telnet control in Windows 7, click on the 'Start' menu and type "cmd" in the Search field then press enter.

Under Windows XP go to the 'Start' menu and click on "Run", type "cmd" with then press enter.

Under Mac OS X, go to Go→Applications→Utilities→Terminal

See below for reference.




Once in the command line interface (CLI) type "telnet", then the IP address of the unit and "23", then hit enter.

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Administrator>telnet 192.168.5.80 23
```

This will bring us into the unit which we wish to control. Type "help" to list the available commands.

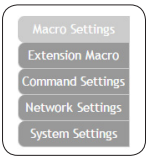
```
Welcome to TELNET.
>?
HELP            : SHOW DESCRIPT OF COMMAND
                  USE <HELP N, N=COMMAND NAME> TO SHOW DESCRIPT OF COMMAND
?               : SHOW DESCRIPT OF COMMAND
                  USE <? N, N=COMMAND NAME> TO SHOW DESCRIPT OF COMMAND
IPCONFIG        : DISPLAY THE CURRENT IPCONFIG
SIPADDR         : SET ETHERNET IP ADDRESS
SNETMASK        : SET ETHERNET NETMASK
SGATEWAY        : SET ETHERNET GATEWAY
SIPMODE         : SET ETHERNET IP MODE
VER             : SHOW UNIT FIRMWARE VERSION
FADEFAULT       : ALL CONFIGURE SET TO FACTORY DEFAULT
ETH_FADEFAULT   : ALL ETHERNET CONFIGURE SET TO FACTORY DEFAULT
REBOOT          : SYSTEM REBOOT
IREMIT          : SEND IR CONTENET
IRLEARN         : LEARNING IR CODE
TRIGGER         : TRIGGER SETTING
RELAY           : RELAY CONTROL
COMCONF         : DRIVER RS232 CONFIG
COMSEND         : SEND DATA VIA COM PORT
MACRO           : MACRO CONTROL
```

***Note:*** *Commands will not be executed unless followed by a carriage return. Commands are case-sensitive. If the IP is changed then the IP Address required for Telnet access will also change accordingly.*

## 6.9 WebGUI Control

On a PC/Laptop that is connected to an active network system, open a web browser and type device's IP address (default setting IP: 192.168.1.50 ) on the web address entry bar.

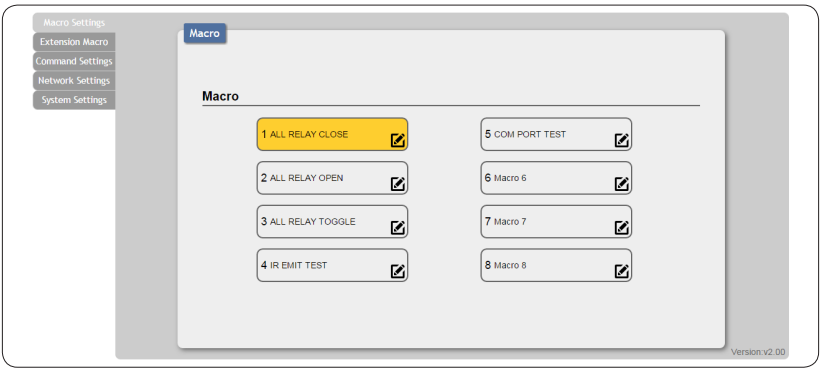
A security page will appear to ask for User and Password, please key in "admin" for both and click Submit to enter. The browser will display device's Macro Setting, Extension Macro, Command, Network & System Settings control pages for users to control.


### 6.9.1 Macro Settings

Click on 'Macro Settings' to execute or rename macro. There are 5 Macros inserted as default setting for testing the control system's functionality. Click on Macro 1~5 to demonstrate the functions:

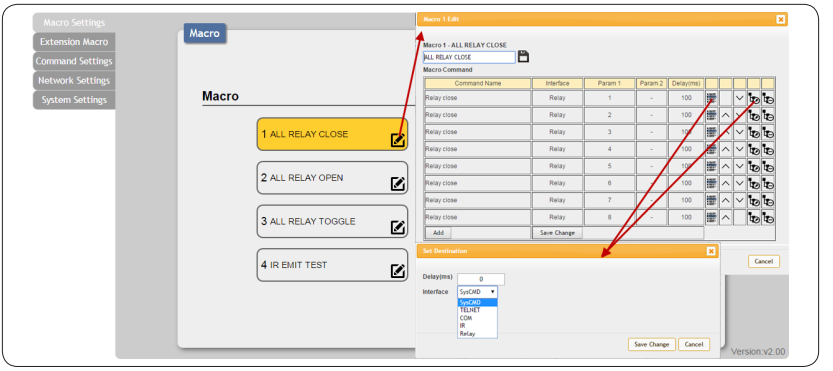
- Macro 1: Close relay from 1~8 sequentially every 100ms
- Macro 2: Open relay from 1~8 sequentially every 100ms
- Macro 3: Toggles relay from 1~8 sequentially every 100ms
- Macro 4: Send IR signal from 1~8 sequentially every 100ms with LED illuminant on front panel.
- Macro 5: Send out command "Hello World" from COM port 1~2 sequentially every 100ms.

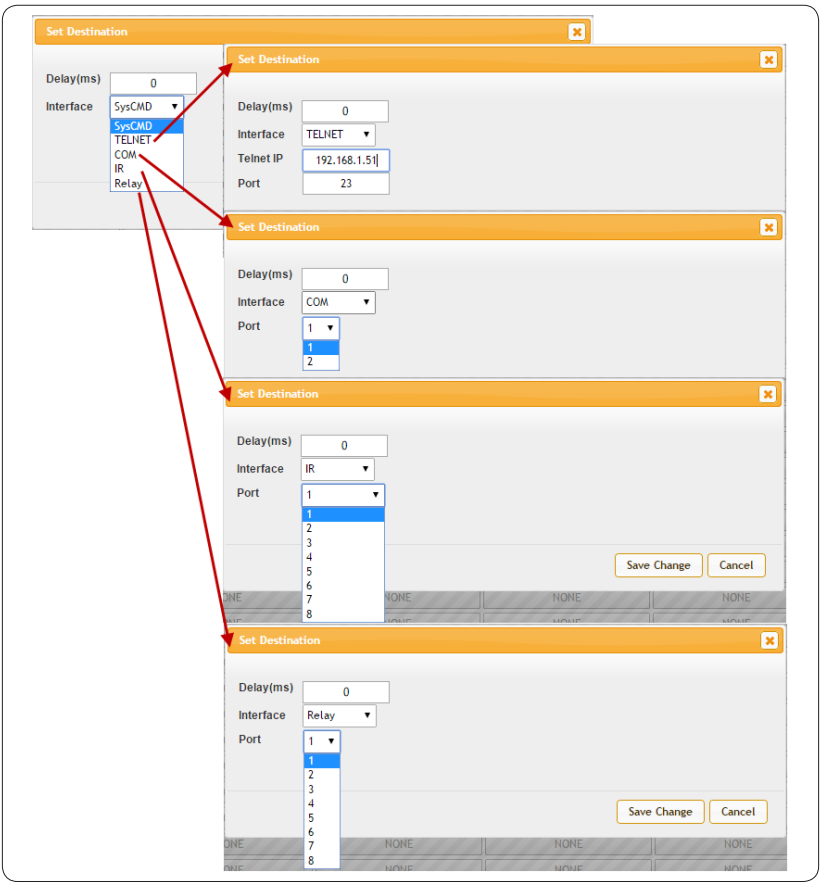


Click on the mark to edit the command settings. Up/down arrows are to move the command up or down and button is to delete the command.

Click on Insert button/Add to insert commands. Command can be set to control the Control System/SysCMD, other devices connected within the same Telnet system/Internet area, RS-232 COM ports, IR and Relay devices connected through the Relay outputs of Control System with delay time. It is suggested the delay time is >100ms once the setting is confimed, double click on Save Change.

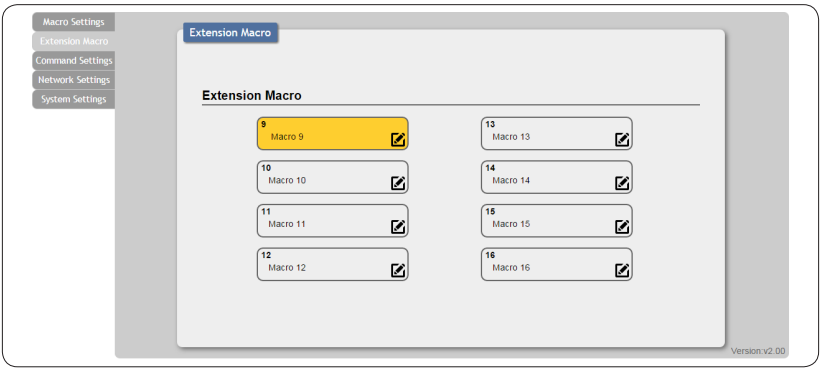
Command set to control the devices within the same telent system or internet area require to set its IP and Port number and it is strongly recommand to set the delay time >500ms in order to secure a successful command sending. Command set to control the Relay devices require to set the Port number. Click on Save Change to confirm the setting.




Set Destination
Delay(ms)
0
Interface
SysCMD
SysCMD
TELNET
COM
IR
Relay
Set Destination
Delay(ms)
0
Interface
TELNET
Telnet IP
192.168.1.51
Port
23
Set Destination
Delay(ms)
0
Interface
COM
Port
1
1
2
Set Destination
Delay(ms)
0
Interface
IR
Port
1
1
2
3
4
5
6
7
8
Save Change
Cancel
Set Destination
Delay(ms)
0
Interface
Relay
Port
1
1
2
3
4
5
6
7
8
Save Change
Cancel

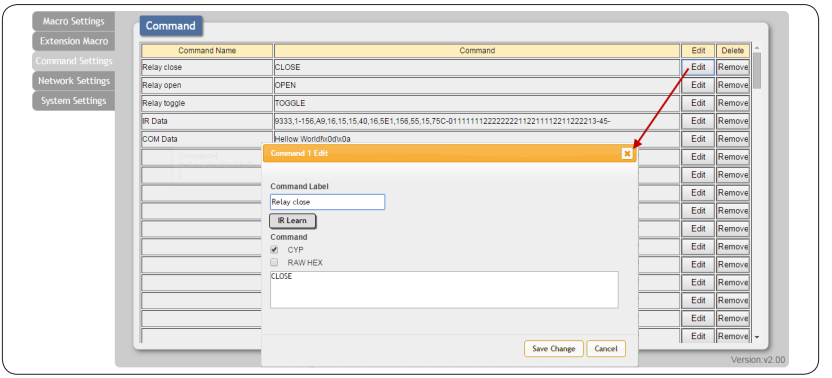
### 6.9.2 Extension Macro

Click on 'Extension Macro' to execute/edit more Macro action up to 8 more.




### 6.9.3 Command Settings

Click on 'Command Settings' to edit or delete commands up to 128 sets. Insert the command directly in the bottom colum of Command Edit and name the command on the top colum then click on Save Changes to store the command.




For IR command Learning, press IR Learn first then press the remote control in direct line-of-sight to the IR Reciever connected from the IRL port within 5 seconds. A comand string will show in the bottom colum. Click on Save Changes to store the command.

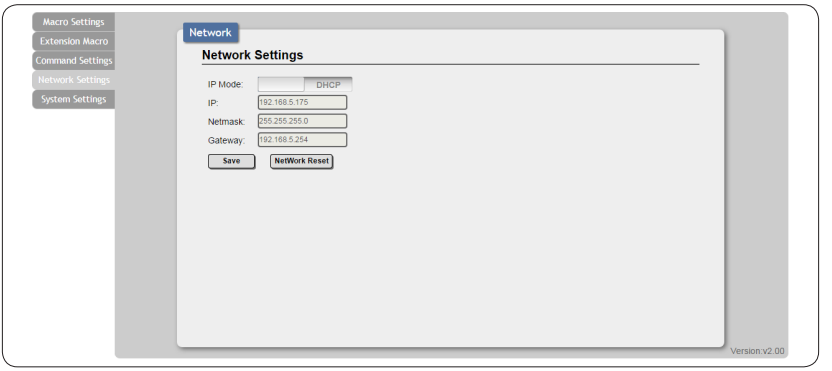
For IR command saving, insert the command on the bottom colum and click on CYP/RAW HEX which indicate the IR command type and click on Save changes to store the command. Under uncertainty

of the IR command type click on RAW HEX to ensure a successful command saving.

Command under 128 characters including space can be build up to 128 commands, command over 128 characters and under 512 characters including space can be build up to 32 command in addition with 96 commands of 128 characters under. Click on Save Change to save the command inserted.

### 6.9.4 Network Settings

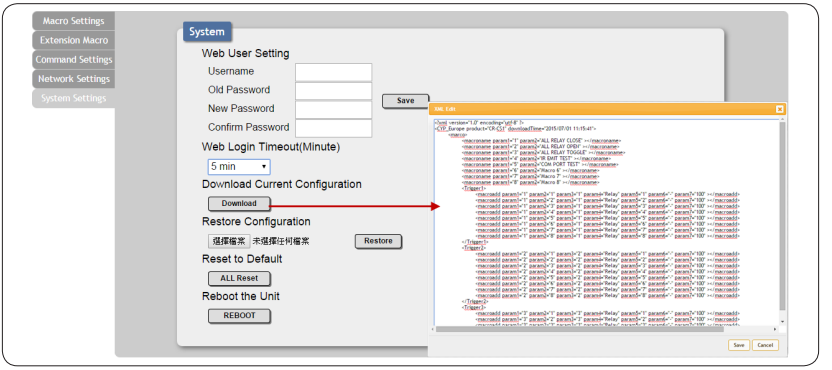
Click on 'Network Settings' to set the device's IP configuration. Once the changes are saved the system will reset the IP address on device automatically and user will need to re-enter the IP address to continue the WebGUI control.



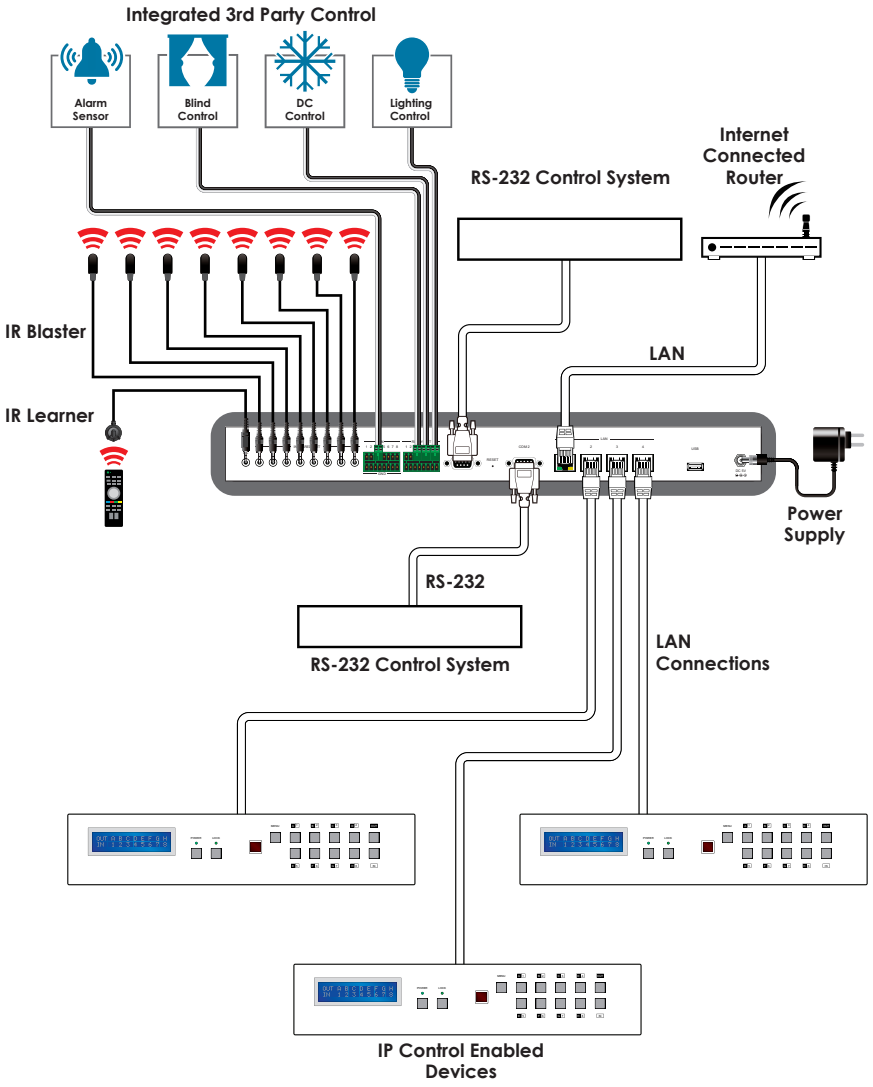
### 6.9.5 System Settings

Click on 'System Settings' to reset the WebGUI login password and save or download the Macro settings. Reset to Default allows IP and login ID & password to be reset back to factory default.

***Note:*** *Please ensure that all commands and settings have been saved before performing Reset as this procedure may restore all settings back to factory default.*



# 7. CONNECTION DIAGRAM



## 8. SPECIFICATIONS

| | |
|---|---|
| **Input Ports** | 8×Triggers (Ternimal Block), 4×LAN (RJ-45), 1×IR Learner |
| **Output Ports** | 8×Replays (Ternimal Block), 8×IR Blasters, 2×COM (9-pin D-sub) |
| **IR Out Frequency** | 30~50 kHz |
| **IR Learner Frequency** | 30~55 kHz |
| **Baud Rate** | 4800~115200 bps |
| **Power Supply** | 5 V/2.6 A DC (US/EU standards, CE/FCC/UL certified) |
| **ESD Protection** | Human body model:<br>±8 kV (air-gap discharge)<br>±4 kV (contact discharge) |
| **Dimensions** | 432 mm (W)×174 mm (D)×44 mm (H)/ Jack Excluded<br>432 mm (W)×181 mm (D)×49 mm (H)/ Jack Included |
| **Weight** | 2186 g |
| **Chassis Material** | Metal |
| **Color** | Black |
| **Operating Temperature** | 0˚C~40˚C/32˚F~104˚F |
| **Storage Temperature** | −20˚C~60˚C/−4˚F~140˚F |
| **Relative Humidity** | 20~90% RH (non-condensing) |
| **Power Consumption** | 7.7 W |

## 9. ACRONYMS

| ACRONYM | COMPLETE TERM |
|---|---|
| **CLI** | Command Line Interface |
| **GUI** | Graphical User Interface |
| **IP** | Internet Protocol |
| **IR** | Infrared |
| **IRL** | Infrared Learning |
| **LAN** | Local Area Network |

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