Important Safety Instructions

Important Safety Instructions

1. Please read the safety precautions carefully before installing and using the equipment.

2. Please keep this safety instructions for future reference.

3. Please strictly adhere to the WARNINGs in the user's guide.

4. Please follow all the operation instructions in the user's guide.

5. Equipment cleaning: Make sure to turn off the power supply and disconnect the units before cleaning. Clean only with a dry soft cloth.

6. To prevent from any hazard use only accessories recommended by the manufacturer.

7. To prevent from any hazard do not expose the equipment to moisture or humidity.

8. Do not place the equipment on any uneven or unstable stand; original product package or appropriate package should be used to avoid damage caused by strong impacts during transportation.

9. Adequate ventilation is good for the maintenance of the equipment.

10. Power supply cords:
   America, Japan: AC 110V~120V 60Hz
   Asia, Europe: AC 220V~240V 50Hz

11. Grounding: 3-wire grounding plug.

12. To maintain the normal operation of the system, system extension cables should be discreetly routed to avoid being walked on or pinched by heavy items.

13. The quantity of connected units in one system should not exceed prescribed quantity. For service, please contact the nearest **TAIDEN** Service Center.

14. Do not remove the cover of the equipment at will; no hard conductor or liquid substance should be left inside the products.

15. For service, please contact the nearest **TAIDEN** Service Center. Do not disassemble the equipment by non-authorized personnel.

16. All **TAIDEN** products are guaranteed for 3 years excluding the following cases: (please delete: "caused by personal reasons")

   A. Damage or malfunction caused by human negligence;

   B. Damage or malfunction caused by improper operating by operator;

   C. Parts damage or loss caused by disassembling the product by non-authorized personnel.

17. Use ONLY specified connection cable to connect the system equipment.

18. Turn off the power supply and unplug the equipment from the power supply in case the equipment is not in use for a long time.

19. Upon receipt of the product, please fill out the Warranty Card enclosed and post it to TAIDEN Service Center nearby in your region.

⚡ **CAUTION**
RISK OF ELECTRIC SHOCK
DO NOT OPEN
!

TO REDUCE THE RISK OF ELECTRIC SHOCK,DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

CAUTION: To reduce the risk of electric shock, DO NOT open covers, no useable serviceable parts inside. Refer servicing to qualified service personnel only.

This label appears on the rear of the unit due to space limitations

The lightning flash with an arrowhead symbol, with an equilateral triangle, is intended to alert the user to the presence of uninsulated 'dangerous voltage' within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation mark within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: To prevent fire or shock hazard, DO NOT expose units to rain or moisture.

Attention: Installation should be performed by qualified service personnel only in accordance with the National Electrical or applicable local codes.

Power Disconnect: Units with or without ON – OFF switch have power supplied to the unit whenever the power cord is inserted into the power source; however, the unit is operational only when the ON – OFF switch is in the ON position. The power cord is the main power disconnect for all units.

Lithium battery safety precautions

✧ To change battery please power off and take off the battery immediately.

✧ Keep the battery away from heat sources to prevent fire or explosion.

✧ Do not use a battery that is leaking, deformed, discoloured or overheats.

✧ Take extra precautions to keep a leaking battery from fire.

✧ Do not use a battery that emits odour or smoke.

✧ Do not solder, disassemble, puncture or deform the battery, otherwise, it may damage the protection circuit of the battery and cause fire, leakage or explosion.

✧ Do not short-circuit the positive and negative electrode with wire or other metal objects, otherwise it may cause fire, explosion, leakage or heat generation.

✧ Do not store or transport the battery with metal objects (such as necklace or hair grip), otherwise it may cause fire, explosion, leakage or heat generation.

✧ Do not heat the battery or throw it into fire, otherwise it may damage the safety valve or the protection circuit of the battery and may cause fire or explosion.

✧ Do not put the battery in the water or moisten the electrode of the battery, otherwise it may corrode the battery and cause fire, explosion, leakage or heat generation.

✧ Be careful to put the battery into the charging case with correct electrode position, otherwise it may cause fire, explosion, leakage or heat generation.

✧ Do not leave the battery near the fire or under an environment over 60 ℃ (such as in the car from direct sunlight), otherwise it may damage the protection circuit of the battery and cause fire, explosion, leakage or heat generation.

✧ Please charge the battery with the dedicated base plate, using other charging unit may cause fire, explosion, leakage or heat generation.

✧ Please use the battery in assigned unit, otherwise it may cause fire, explosion, leakage or heat generation.

✧ Do not drop or shock the battery, otherwise it may damage the protection circuit of the battery and cause fire, explosion, leakage or heat generation.

✧ If battery contents get into eyes it may cause blurred vision. DO NOT rub. Rinse with clear water immediately and consult a doctor.

✧ If the battery leaks onto skin or clothing, wash the area immediately with clean water to avoid skin injury and fabric damage.

✧ It will result in low battery and may damage the battery if the battery is not used for a long time. Please take off the battery, and fully charge the battery for every three months.

Remark:

■ All rights reserved for translation, reprint or reproduction

■ Contents may change without prior announcement

■ All technical specifications are guideline data and no guaranteed features

■ We are not responsible for any damage caused by improper use of this manual

■ This product is conform to the rules of the European directive 2004/108/EC

■ If any detailed information needed, please contact your local agent or **TAIDEN** service center in your region. Any feedback, advice and suggestion about the products is appreciated.

■ **TAIDEN** is the registered trademark of TAIDEN Co., Ltd.

Installation & User Guide

About this manual

This manual is a comprehensive guide to the installation and operation of **TAIDEN** HCS-6100 series Central Control System. It includes the detailed description of the function and interface of the HCS-6100 system components, system connection and installation, system set-up and operation.

The manual is divided into the following chapters:

Chapter 1: Introduction

Introduction to the HCS-6100 system, as well as introducing the user into structure, functions, features and relative software.

Chapter 2: Widescreen Touch Panel

Detailed description of functions, connection, configuration and operation of the widescreen touch panel and the application of its accessories.

Chapter 3: Intelligent Central Control System Main Unit

Detailed description of functions, installation, connection and operation of the intelligent central control system main unit.

Chapter 4: Network peripherals

Detailed description of functions and connection of the network peripherals including wireless transceiver, wireless router, power controller, lighting controller and intelligent switch.

Chapter 5: Fault diagnosis

Trouble-shooting guide for simple faults.

Chapter 6: Technical Data

Mechanical and electrical details of the complete HCS-6100 equipment.

Installation & User Guide

This manual is applicable to:

- **Widescreen Touch Panel**

HCS-6107TP
7" widescreen touch panel (wireless 1-way control)
HCS-6107TPX
7" widescreen touch panel (wireless 2-way control and wired Ethernet control)
HCS-6110TP
10.2" widescreen touch panel (wired Ethernet control)
HCS-6110TPX
10.2" widescreen touch panel (wireless 2-way control and wired Ethernet control)
HCS-6112TP
12.1" widescreen touch panel (wired Ethernet control)
HCS-6112TPX
12.1" widescreen touch panel (wireless 2-way control and wired Ethernet control)
HCS-6115TP
15.4" widescreen touch panel (wired Ethernet control)
HCS-6115TPX
15.4" widescreen touch panel (wireless 2-way control and wired Ethernet control)

- **Intelligent Central Control System Main Unit**

HCS-6000MCP2　Central control system main unit

- **Wireless transceiver**

HCS-6100RFS　Wireless transceiver (1-way, 2.4 G)
HCS-6100RFX　Wireless transceiver (2-way, 2.4 G)
HCS-6100RF/ROUTER　Wireless Router

- **IR transmission stick**

CBL2PL/03　　　IR transmission stick
CBL3PL/03　　　IR transmission stick

- **Intelligent Controller**

HCS-6000LM　　4CH lighting controller
HCS-6000PM　　8CH power controller

- **Intelligent Wall-mounted Keypad**

HCS-6000SW/02　　2-key wall-mounted keypad
HCS-6000SW/04　　4-key wall-mounted keypad
HCS-6000SW/08　　8-key wall-mounted keypad
HCS-6000SW/12　　12-key wall-mounted keypad

- **Rechargeable Lithium-Ion Battery**

HCS-6107BAT
Rechargeable Lithium-Ion battery (for 7" widescreen touch panel)
HCS-6110BAT
Rechargeable Lithium-Ion battery (for 10"/12"/15" widescreen touch panel)

- **Portable base plate** (for HCS-6107TP/TPX only)

HCS-6107BKT
Portable base plate of HCS-6107TP series tunch panel

- **Power Adapter** (for tunch panel)

HCS-ADP15V　　　Power Adapter (for tunch panel)

- **8-series Distributor**

HCS-0108COM　8-series distributor

Chapter 1. Introduction

1.1 Summary

TAIDEN intelligent central control system achieves

- wired Ethernet
  and/or
- wireless 1-way/2-way communication

via a wireless/wired color widescreen touch panel (depending on the touch panel type), controlling all devices in the conference venue including

- power on/off
- light adjustment
- screen up/down
- curtain open/close
- diverse multimedia devices (e.g. DVD, media matrix, projector, etc.).

The operator can control the complicated conference and environment devices easily through intuitive visualized interface.
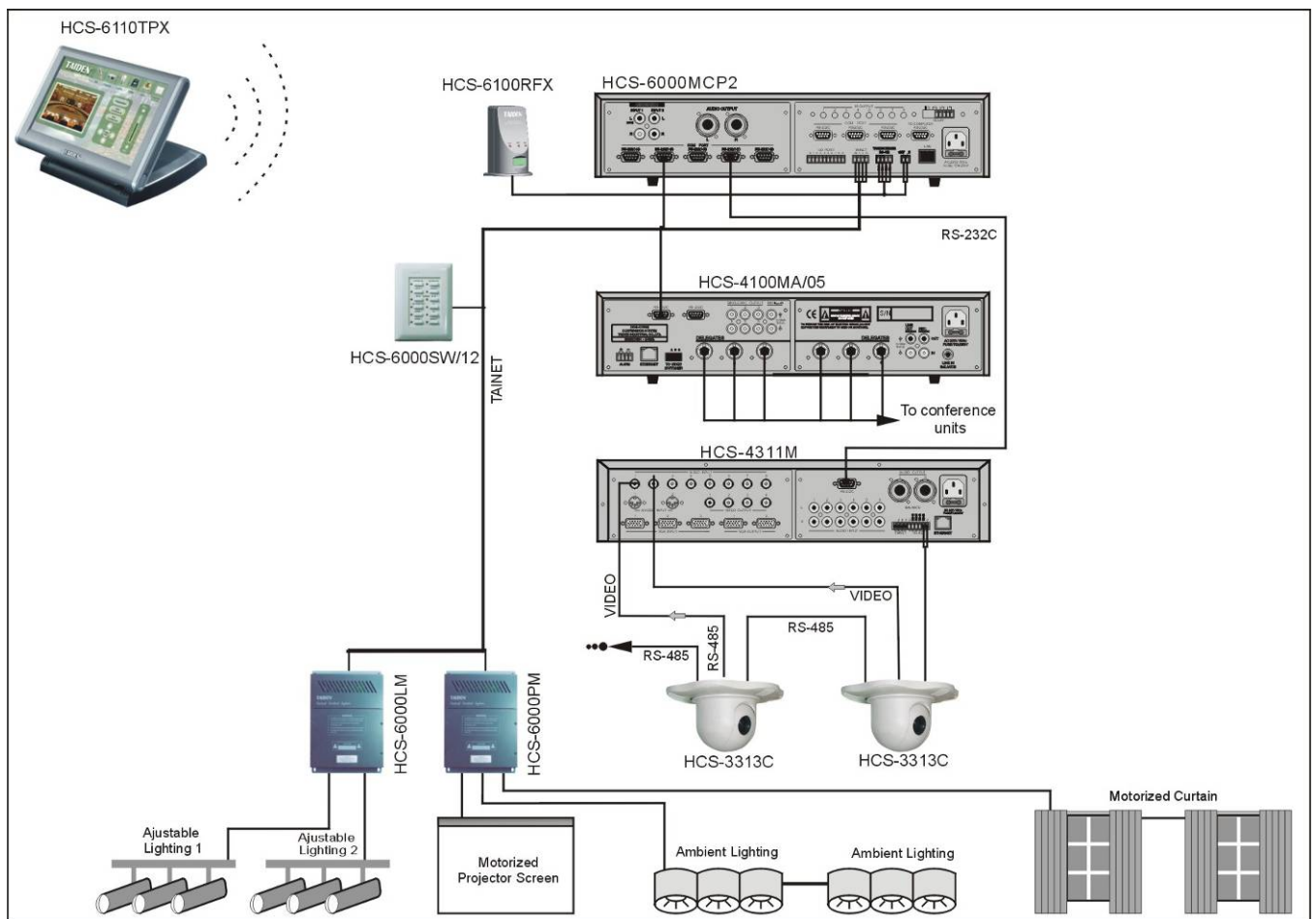
Figure 1.1　System overview

The system is composed of one or more of the following:

■ **Widescreen Touch Panel**

HCS-6107TP
7" widescreen touch panel (wireless 1-way control)
HCS-6107TPX
7" widescreen touch panel (wireless 2-way control and wired Ethernet control)
HCS-6110TP
10.2" widescreen touch panel (wired Ethernet control)
HCS-6110TPX
10.2" widescreen touch panel (wireless 2-way control and wired Ethernet control)
HCS-6112TP
12.1" widescreen touch panel (wired Ethernet control)
HCS-6112TPX
12.1" widescreen touch panel (wireless 2-way control and wired Ethernet control)
HCS-6115TP
15.4" widescreen touch panel (wired Ethernet control)
HCS-6115TPX
15.4" widescreen touch panel (wireless 2-way control and wired Ethernet control)

■ **Intelligent Central Control System Main Unit**

HCS-6000MCP2   Central control system main unit

■ **Wireless transceiver**

HCS-6100RFS   Wireless transceiver (1-way, 2.4 G)
HCS-6100RFX   Wireless transceiver (2-way, 2.4 G)
HCS-6100RF/ROUTER   Wireless Router

■ **IR transmission stick**

CBL2PL/03   IR transmission stick
CBL3PL/03   IR transmission stick

■ **Intelligent Controller**

HCS-6000LM   4CH lighting controller
HCS-6000PM   8CH power controller

■ **Intelligent Wall-mounted Keypad**

HCS-6000SW/02   2-key wall-mounted keypad
HCS-6000SW/04   4-key wall-mounted keypad
HCS-6000SW/08   8-key wall-mounted keypad
HCS-6000SW/12   12-key wall-mounted keypad

■ **Rechargeable Lithium-Ion Battery**

HCS-6107BAT
Rechargeable Lithium-Ion battery (for 7" widescreen touch panel)
HCS-6110BAT
Rechargeable Lithium-Ion battery (for 10"/12"/15" widescreen touch panel)

■ **Portable base plate** (for HCS-6107TP/TPX only)

HCS-6107BKT
Portable base plate of HCS-6107TP series tunch panel

■ **Power Adapter** (for tunch panel)

HCS-ADP15V   Power Adapter (for tunch panel)

■ **8-series Distributor**

HCS-0108COM   8-series Distributor

1.2 Functions and features

1.2.1 Widescreen touch panel

- 16:9 widescreen high resolution color display
- High brightness, high contrast ratio and wide viewing angles
- Latest graphic user interface
- Supports wireless control （2.4 GHz）(depending on the touch panel type)
- Comes with wired Ethernet port, supporting computer control and website control (depending on the touch panel type)
- Mini USB port and Type A USB port
- Supports SD card (up to 4 GB)
- Programmable touch buttons
- AV interface, Multimedia video that supports various formats and PIP (picture in picture) function
- Built-in speaker
- Movable base, with built in Lithium-Ion battery for more than 8 hours of continuous operation（for HCS-6107TP/TPX only）
- Portable battery pack（for HCS-6110, HCS-6112 and HCS-6115 series only）
- Optional color: black and gray

1.2.2 Intelligent central control system main unit

- Open programmable control platform, user-friendly Chinese/English operation interface
- Exclusive dynamic configurable RS-232C/485 ports, supporting all kinds of control protocols, seamlessly integrated with Digital Conference System, constitute perfect intelligent conference solutions
- Built-in IR learning, no learning apparatus needed, easy to use
- Audio mixer with volume control (2 channel stereo inputs with independent volume control, 1 channel stereo output)
- 8 IR output ports used for remote control of the VCR, DVD, CD, MD and projectors
- 8 digital I/O control ports and 4 low relay control ports for controlling currently connected devices such as projector lift (up/down), curtains (open/close), projector (pitching), lightings (on/off), and so on
- 8 RS-232C ports (RS-232 (1) ~ (3) are 1-way ports, RS-232 (4) ~ (8) are 2-way ports) can control video matrix or plasma display
- Front panel LCD, LED display function and real time display
- Bilingual (Chinese/English) software for system configuration
- User-defined scene save and recall facilities
- Computer interface RS-232 connection to the computer for executing configuration, supervisory controlling and uploading program from the computer to the central control system main unit
- 1 RJ-45 as Ethernet interface, connection to computer software or wired touch panel, executing commands via remote control
- Cooperates with wireless 2-way touch panel and wireless transceiver, executing commands via wireless remote control

1.3 PC software

Click "HCS-6000W.exe" in your CD-ROM to install intelligent central control system PC software on your computer.

This series PC software is designed for **TAIDEN** intelligent central control system main unit and touch panel, used for customer programming the logic functions of HCS-6000MCP2 intelligent central control system main unit and the user interface of HCS-6100 series touch panel. Includes:

■ **CS-TP vision designer**

Designed for programming customer made interface of HCS-6100 series touch panel.

■ **CS-IR manager**

Interacts with HCS-6000MCP2 intelligent central control system main unit for IR code learning and management. (Refer to 3.7.2)

■ **CS-logic programmer**

Programming the logic of HCS-6000MCP2 intelligent central control system main unit to execute central control functions to various devices. (Refer to 3.7.1)

■ **CS-monitor manager**

Monitors and manages HCS-6000MCP2 intelligent central control system main unit. (Refer to 3.6)

Please refer to the online help file of corresponding software for detailed operation.

Path on computer:

"Start" → "Programe" → "**TAIDEN** HCS-6000" → "HCS-6000W 2.0.0.0" → "Help".

Note:

☞ Programming the logic of HCS-6000MCP2 intelligent central control system main unit and the interface of the HCS-6100 series touch panel should only be done by professional engineers who have been trained or with similar experience.

Chapter 2. Widescreen touch panel

2.1 Summary

HCS-6100TP series widescreen touch panel is the main operation platform for user in **TAIDEN** central control system. All control facilities of **TAIDEN** central control system can be carried out via the function buttons of the touch panel.

HCS-6100TP series touch panel feature:

♦ 16:9

♦ high resolution

♦ high contrast

♦ high brightness

♦ large viewing angle

♦ true color TFT-LCD screen

♦ AV interface

♦ supporting various format of multimedia video and PIP function

♦ audio function and USB interface

♦ supporting SD card (maximum 4 GB)

♦ wireless (2.4 GHz) and wired Ethernet remote controlling (depending on the touch panel type).

Types:

HCS-6107TP

7" widescreen touch panel (wireless 1-way control)

HCS-6107TPX

7" widescreen touch panel (wireless 2-way control and wired Ethernet control)

HCS-6110TP

10.2" widescreen touch panel (wired Ethernet control)

HCS-6110TPX

10.2" widescreen touch panel (wireless 2-way control and wired Ethernet control)

HCS-6112TP

12.1" widescreen touch panel (wired Ethernet control)

HCS-6112TPX

12.1" widescreen touch panel (wireless 2-way control and wired Ethernet control)

HCS-6115TP

15.4" widescreen touch panel (wired Ethernet control)

HCS-6115TPX

15.4" widescreen touch panel (wireless 2-way control and wired Ethernet control)

2.2 Controls and Indicators
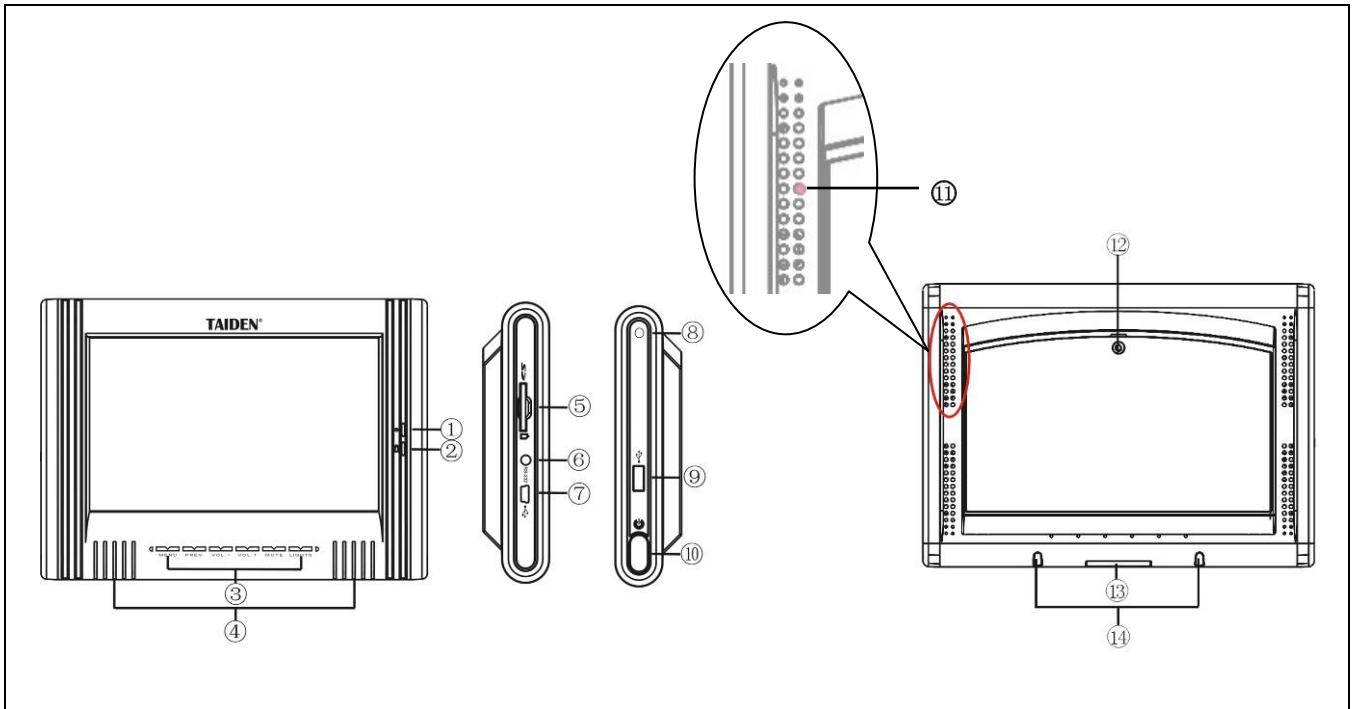
(a) 7" Widescreen Touch Panel
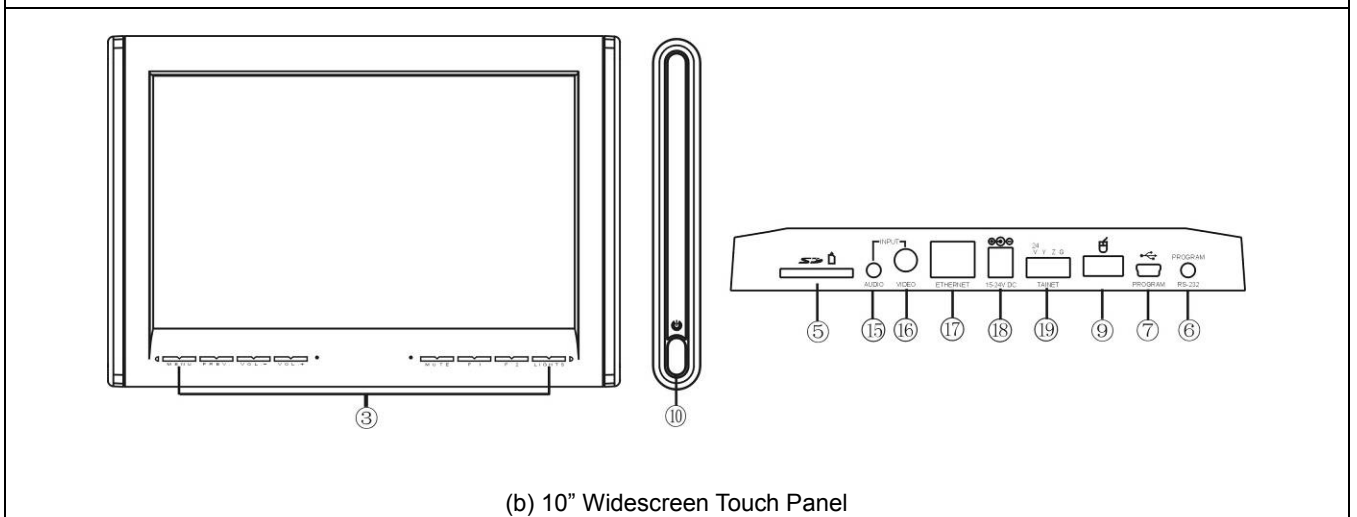
(b) 10" Widescreen Touch Panel
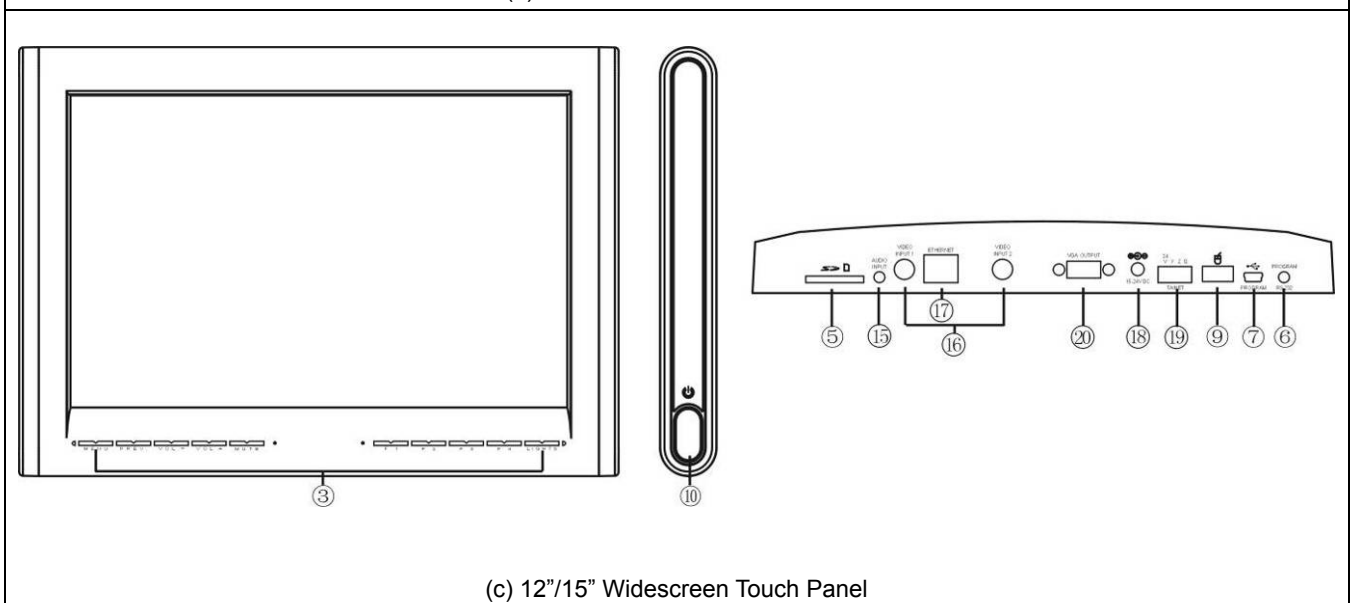
(c) 12"/15" Widescreen Touch Panel

Figure 2.1   Widescreen Touch Panel

Figure 2.1:

1. Standby indicating light (for HCS-6107TP/TPX only)

   This indicating light will light up when the touch panel goes to standby state.

2. Charging indicating light (for HCS-6107TP/TPX only)

   This indicating light will light up when charging and light off after charging.

3. Touch sensitive button (programmable)

4. Built-in speaker

5. SD card slot

   For SD card, supporting maximum 4G SD card.

6. RS-232C interface (reserved)

7. Mini USB interface

   For uploading program and upgrading user interface.

8. Touch pen slot (for HCS-6107TP/TPX only)

9. USB interface

   For type A USB devices, such as external mouse.

10. Power/Function button

    a) Touch panel in "power-on" status: switches to "power-off" status when pressed.

    b) Touch panel in "operation status": switches to "set up interface" when pressed and hold for 5 seconds or switches to "exit/standby" state when pressed for a short time.

    c) "Calibration" status: exit without saving when pressed.

11. Reset button (for HCS-6107TP/TPX only)

    It is placed in the eighth hole at the second line on the left back of the panel, and can be touched by touch pen.

12. Rechargeable Lithium-lon battery (for HCS-6107TP/TPX only)

13. Connective contacts to portable base plate

14. Fix slot

15. Audio input

16. Composite video input

17. Ethernet interface

    Touch panel is connected to central control system main unit via Ethernet interface (direct-connected or via SWITCH, HUB), achieving wired control functions.

18. Power slot

    15V ~ 24V DC input for power supply

19. TAINET

    Reserved

20. VGA output (for HCS-6112TP and HCS-6115TP series only)

Warning:

☞ Never strike or drop the touch panel nor click the screen by sharp objects.

☞ Neither use the touch panel in rain, nor expose the touch panel to a humid environment.

2.3 Connection

2.3.1 To HCS-6000M main unit

2.3.1.1 Wireless connection

Connect data interface and power supply slot of wireless transceiver to the corresponding interface on the main unit (see figure 2.2).

The 1-way wireless touch panel can send commands to central control system main unit. The 2-way touch panel can both send and receive commands from the central control system main unit.
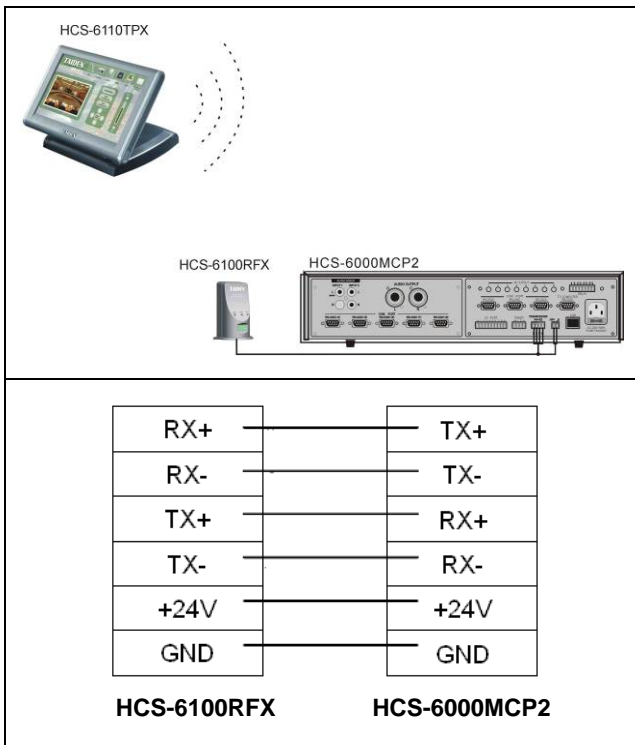

Figure 2.2   Wireless connection to HCS-6000MCP2 main unit

Note:

☞   To achieve wireless 2-way communication, wireless 2-way touch panel and wireless 2-way transceiver should be used synchronously.

2.3.1.2 Wired connection

2-way communication can be achieved easily by connecting the Ethernet interface of the 2-way touch panel to the Ethernet interface of the main unit via a network cable or just connect them into the same LAN.

(a). Connection via network cable

(b). Connection via HUB
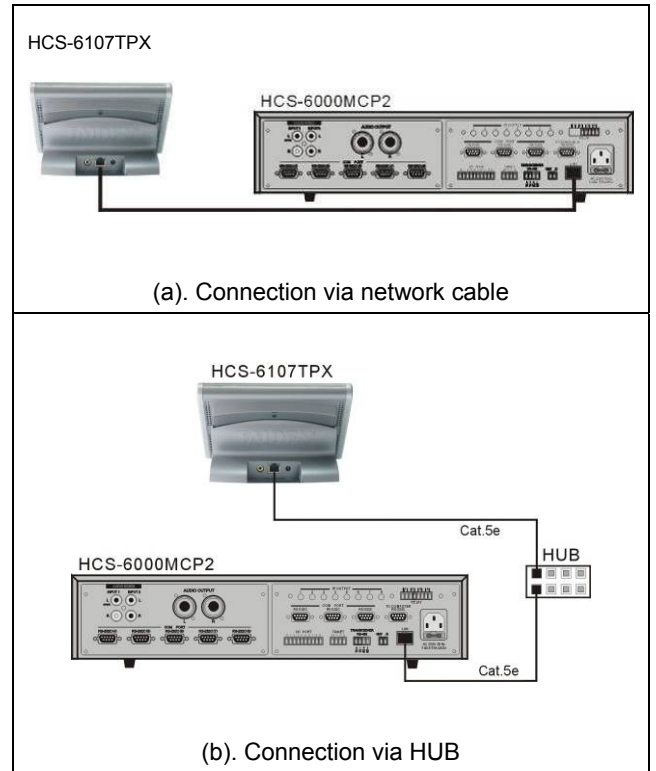
Figure 2.3   Wired connection to HCS-6000M main unit

2.3.2 To computer

The touch panel can be connected to a PC by USB interface to upload user's program, pictures, sound files etc.
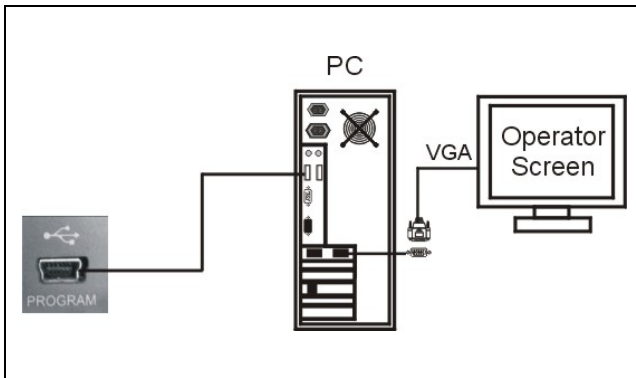
Figure 2.4   Connection to computer

2.3.3 To external video source

This series touch panel supports external video PIP function. External video signal (such as DVD video, camera video, etc.) can be input to the touch panel via RCA connector and displayed in a window or full-screen to fulfill monitor function when controlling. HCS-6112TP/TPX and HCS-6115TP/TPX can support 2 channel videos input and display 2 channel videos separately.
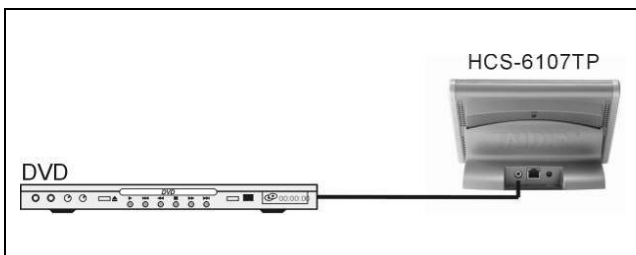
Figure 2.5   Connection to external video source

2.4 Operation

2.4.1 System startup

After installation of the battery or connection of the power supply to the touch panel, press power button at the right side of the touch panel to start touch panel. The start-up logo will be displayed as shown in the following figure:

After start up, initialization and program loading procedures are executed, as illustrated in above figure. Hereafter, user's previously defined and programmed interface is displayed as shown as example in the following figure:

Please refer to "Touch panel vision designer user's manual" for detailed operation instructions.

2.4.2 Download user interface program

Please refer to "HCS-61xxTP user program uploading instructions" for detailed operation instructions.

2.4.3 Touch panel set-up

Under user defined interface, press and hold power button for about 5 seconds will go to touch panel configuration interface such as shown as example in the figure below, displaying the "Connection" status:

All status of the touch panel can be setup through touch button on the screen. The operation of all menu items will be introduced one by one in the next sections.

2.4.3.1 Connection

At each time "Connection" button at the left side of the window is pressed, the above figure is displayed

Two connective modes to central control system main unit are supported :
- "Ethernet"
- "wireless"

a). Wired Ethernet connection

Local IP address means: IP address of the touch panel
Remote IP address means: IP address of the main unit.

- use numeric keypad buttons to setup
- use " 🔵 " to delete a digit
- use "OK" to save setting

b). Wireless connection

- **RF ID**

RF ID is an ID assigned for identifying a touch panel. RF ID should coincide with the ID used in the main unit program. If two or more touch panels are used in one project, every single touch panel has a different ID. The maximum number of touch panels allowed is 8. In this case, the RF ID numbers range from 0 to 7.

To decrease or increase ID: click " 🔵 ", " 🔵 " button; to decrease or increase ID rapidly and continuously (= auto repeat): press and hold " 🔵 ", " 🔵 " button.

- **Channel setting**

Channel setting selects wireless frequencies. 10 frequencies are available in the system, ranging from 0 to 9.

As the touch panel is communicating with the wireless transceiver, channel setting must coincide with the channel of the wireless transceiver. The wireless transceiver channel is setup by the toggle switch at the bottom side of the transceiver.

Operation:

1. To decrease or increase channel number: click " 🔵 ", " 🔵 " button; to decrease or increase ID rapidly and continuously (= auto repeat): press and hold " 🔵 ", " 🔵 " button;
2. Press "OK" to confirm current channel.

- For HCS-6107TP wireless 1-way touch panel, the interface is displayed as shown in the following figure. The wireless transceiver and the touch panel must be set on the same channels, in this case will transceiver and touch panel work together.

- For wireless 2-way touch panel, the interface is displayed as shown in the following figure. If the channel of the touch panel or the wireless transceiver has been changed, the binding between the transceiver and the touch panel must be executed again (see below paragraph "Binding process"). Only in this case will transceiver and touch panel work together again.

Binding process:

1. If the channel of the touch panel was changed, the wireless transceiver must be set on the same channel, to coincide with the channel of the touch panel;
2. Restart the wireless transceiver;
3. Set wireless transceiver to "binding" state, by menu operation on main unit (see section 3.5.5: Main menu - "IP_Setup" - "WIRELESS"- "Binding");
4. Click "bind" button on the window of the touch panel in 10 seconds.

If the binding process has been successfully executed, wireless communication will work unless the channel of the touch panel or the channel of the wireless transceiver is changed.

Note:

☞ The wireless touch panel and corresponding wireless transceiver have already binding together as factory setting. The binding will be cancelled when changing the channel of the touch panel or wireless transceiver. Our recommendation: do not change the factory setting of the channel of the touch panel or wireless transceiver unless more than one central control system is working separately in the same area at the same time. It can work at different frequency point by re-set channel number. Or when one channel cannot work normally due to disturbance, you can change it to another channel.

2.4.3.2 System Volume

➢ to decrease or increase system volume from 0~15: click " ", " " button. 0 stands for mute.
➢ to decrease or increase system volume rapidly and continuously (= auto repeat): press and hold " ", " " button.

2.4.3.3 Luminance

➢ to change the luminance of the touch panel: select "Luminance" button and adjust by pressing " " or " " button.
➢ to decrease or increase brightness rapidly and continuously (= auto repeat): press and hold " " or " " button.

2.4.3.4 Power management

➢ to enter power management window: press "Power Manager".
➢ to adjust standby time and power down time: press " ◀ " or " ▶ " button.
➢ to adjust time rapidly and continuously (= auto repeat): press and hold " ◀ " or " ▶ " button.

Standby time:

The touch panel switches to "standby" mode once the time selected in the Standby window elapsed. The screen will be turned off.

➢ to return to normal working mode:

- click the touch screen

  or

- press the power button at the right side of the touch panel

  or

- click the touch sensitive button under user defined interface

Power off time:

The touch panel switches to "power off" mode automatically once the time selected in the Power down window elapsed.

➢ to restart the touch panel: press the power button at the right side of the touch panel.

Time range for both standby and power off is between 1 to 90 minutes.
Standby time cannot be larger than power off time.

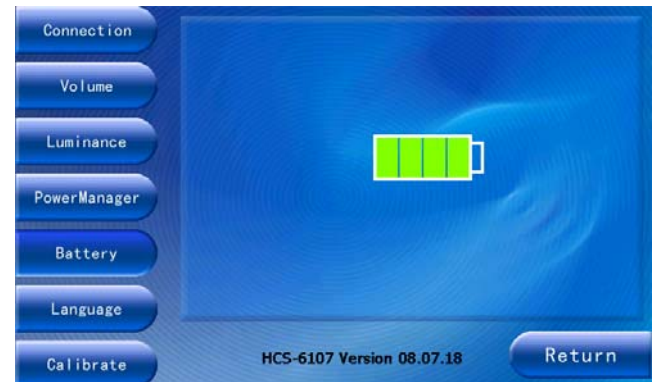➢ to turn off touch panel immediately, click "Power off" button.

> **Note:**
> ☞ It will take 20 seconds to restart the touch panel but take no time to return to working state from standby state.

2.4.3.5 Battery capacity

Click "Battery" to view the state of charge of the battery.

When battery icon shows status "empty", please charge the battery.

2.4.3.6 Language

Click "Language" button on the left side of the window. The language window displays 2 buttons: "中文" and "English".
To select your language press the appropriate button.
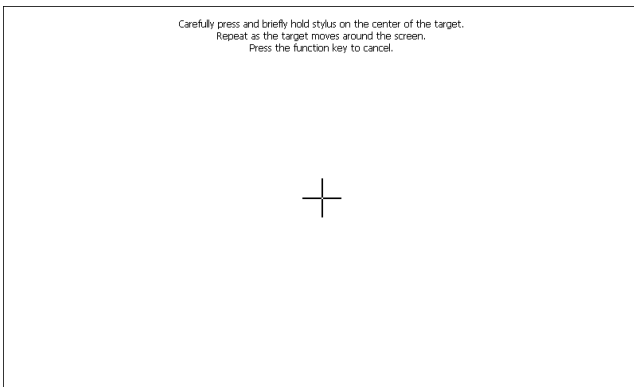
2.4.3.7 Screen calibration

If the touch buttons do not react properly when pressed, the panel should be calibrated again.
Press "Calibration" button to enter the calibration window of the touch panel.

Please click the crosshairs to achieve calibration, repeat as the cursor moves around the screen.

After clicking 5 cursors, The following figure will be displayed.

➢ click any place of the touch screen to save current setting and return to configuration interface

  or

➢ press power/function button to exit without saving the calibration and return to configuration interface.
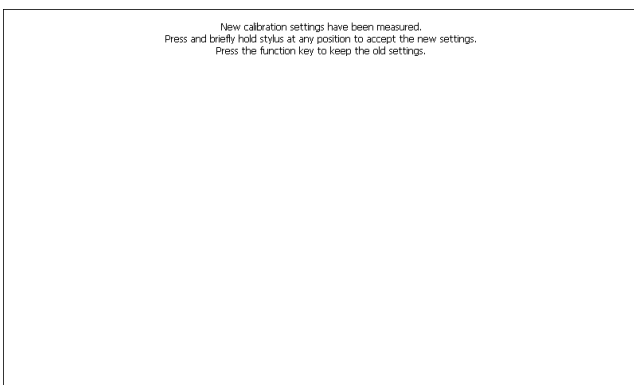
2.4.4 Power-off

You can power off the touch panel by setting power off time from "Power Management" or click "Power off" directly or by user defined power off function.

2.5 Using SD card

2.5.1 System update

Before system updating, please make sure that the updating file name be HCS6107.bin (for 7 or 10 inches touch panel) or HCS6112.bin (for 12 or 15 inches touch panel) and the updating file be saved under root directory of SD card.

Plug SD card under switch off state, and press touch panel power on button for about 6 second to go to update interface. "Updating! Please don't power off!" will be displayed on the screen as the following figure.

At this time, release power on button and wait for updating. The process of updating will take about 1 minute, please be patient.

Do not pull out SD card or power off touch panel when updating. After updating, touch panel will restart automatically.

Requirements to SD card:
① Capability: 128 MB, 256 MB, 512 MB, 1 GB, 2 GB
② Format: FAT16

2.5.2 Download user project file

Plug SD card under switch off state, when power on touch panel, it will check root directory of SD card to find user project file "project.hex". If the file is founded, touch panel will load this file. If not, touch panel will load project file from its memory.

Plug SD card under switch on state, "Reboot" will be displayed on touch panel as the following figure:
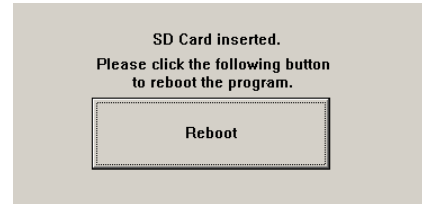

At this time, click "Reboot" button to reboot touch panel as the following figure. Before reboot finished, please do not pull out SD card!
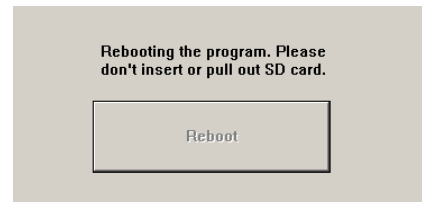
Due to memory space limitation, when the user project file is larger than 24 MB, please save user project file (project.hex) into root directory of SD card and load it as above description.

Note:
☞ SD card can be pulled out only when the screen page is fully loaded. Please do not pull out SD card when reading, or it may cause system halt as the following figure. If it happens, please reboot the touch panel.
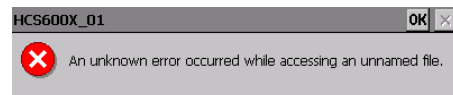
2.6 Accessory

2.6.1 Battery

HCS-6107BAT Lithium-Ion battery is used to give power supply to HCS-6107TP/TPX touch panel. This kind of battery provides high capacity rechargeable lithium cell with 11.1 V and 2400 mAh capacity. Charging time is 2.5~3 hours. It can work continuously for 6 hours when the touch panel is turned on.

Figure 2.6   HCS-6107BAT rechargeable Lithium-Ion battery

HCS-6110BAT Lithium-Ion battery is used to give power supply to HCS-6110, HCS-6112 and HCS-6115 series touch panel. This kind of battery provides high capacity rechargeable lithium cell with 16 V/19 V and 48.8 Wh capacity. Charging time is 3.5~4 hours.

Figure 2.7   HCS-6110BAT rechargeable Lithium-Ion battery

2.6.2 Portable base plate (for HCS-6107TP/TPX only)

Portable base plate HCS-6107BKT is a dedicated base plate for HCS-6107TP/TPX touch panel, used for charging HCS-6107BAT or feeding power to HCS-6107TP/TPX and providing wired connection to main unit and video input interface.

Figure 2.8   HCS-6107BKT base plate

Figure 2.6:
1. Buckles
    ♦   Match with slots of the touch panel to fix onto the base plate.
2. Connective contacts to HCS-6107TP/TPX touch panel
3. Composite video input interface
    ♦   PIP function can be fulfilled if external video signal is input via the RCA connector.
4. Ethernet interface
5. Power supply slot
    ♦   15 ~ 24 V DC input to the touch panel or the battery.

2.6.3 Power Adapter

Figure 2.9   HCS-ADP15V power adapter

Insert Ø 5.5 mm plug of HCS-ADP15V adapter into power socket on touch panel to supply power or charge HCS-6107BAT.

Insert Ø 5.5 mm plug of HCS-ADP15V adapter into power socket on HCS-6110BAT to charge HCS-6110BAT.

Chapter 3. Intelligent central control system main unit

3.1 Summary

HCS-6000MCP2 series main unit is the heart of HCS-6100 intelligent central control system. It integrates audio mixer in a 2U frame and provides diverse openly programmable remote control facilities, with strong control logic and friendly operation interface. Exclusive dynamic configurable RS-232C/485 control ports support all kinds of protocols. Users can access all control functions by computer. Used with a wireless touch panel, the system becomes a comprehensive wireless control system.

The connection protocol of **TAIDEN**'s digital conference system and the intelligent central control system seamlessly match together to form the perfect intelligent conference system solution.

HCS-6000MCP2 main unit can be widely used in a vast range, such as conference hall, classroom, video conference, remote teaching, intelligent home system etc.

Type:

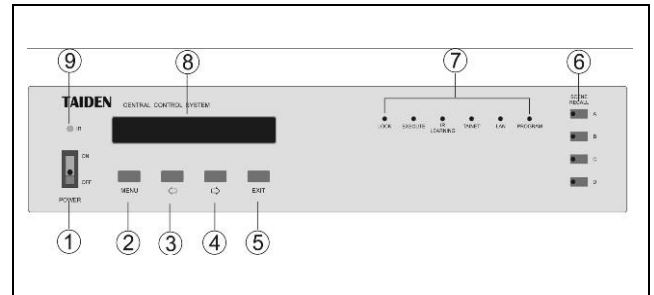HCS-6000MCP2   Central Control System Main Unit

3.2 Controls and indicators

Figure 3.1   HCS-6000MCP2 main unit front view

Figure 3.1:

1. **Mains button and indicator** (red)
2. **"MENU"** button
    a) If in current state, press "MENU" go to main menu;
    b) If in menu state, press "MENU" go to sub menu;
    c) Select/Deselect in network configuration.
3. **"⇦" (Left)** button
4. **"⇨" (Right)** button
5. **"Exit"** button
6. **"SCENE RECALL"** button
    If scenes have been stored, press the "SCENE RECALL" keys (A ~ D) on the front panel to recall the stored scene (No. 1 ~ 4 corresponds to the scenes A ~ D respectively).
7. **LED indicators of front panel**
    ✧ **"PROGRAM"** indicator:
    Indicator lights up if a program/file is uploaded from the PC via the RS-232C interface.
    ✧ **"LAN"** indicator:
    Indicator flashes if date are received or transmitted at LAN port.
    ✧ **"TAINET"** indicator:
    Indicator flashes if data are received or transmitted at TAINET port.
    Examples:
    *   HCS-6100RFX wireless transceiver transmitting the control signals from touch panel.
    * TAINET network devices such as power controller, lighting controller etc. transmitting control signals.
    ✧ **"IR LEARNING"** indicator:
    When IR learning starts, the "IR LEARNING"

indicator lights up (for details refer to "Configuration and operation - IR learning").

✧ **"EXECUTE"** indicator:

Indicator flashes if HCS-6000MCP2 transmits or executes instructions.

✧ **"LOCK"** indicator:

HCS-6000MCP2 main unit can lock the front panel buttons to avoid illegal operation. Locking/unlocking can be carried out by touch panel, wall-mounted switch and by the control software in PC. When touch panel or wall-mounted switches are operated to control the main unit, the front panel of the main unit is locked and the "LOCK" indicator lights up and no operation can be done on the front panel.

8. **Display– 256×32 LCD**:

Displays the status of the main unit and the menu of system configuration.
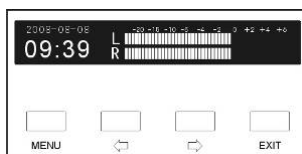
a) Menu state

Press "MENU" to enter the setup menu in current state and the main menu is shown as following (for details refer to "Configuration and operation")
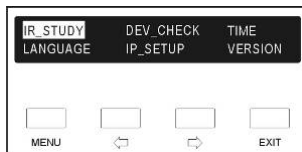
b) Current state

This is the initialized state of the LCD after system startup, displaying dynamic digital clock and the output volume level.

9. **IR receiving window**:

Receives the IR signals from remote control during IR learning; make sure the remote control aims at the window (for details refer to "Configuration and operation - IR learning").
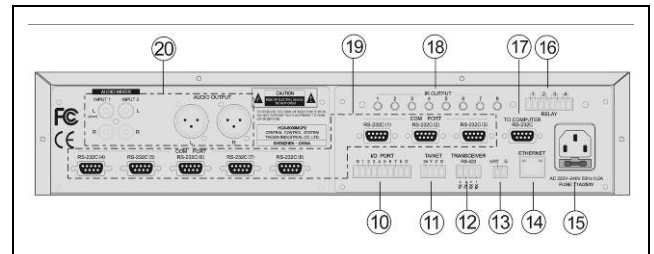

Figure 3.2   HCS-6000MCP2 main unit rear view

Figure 3.2:

10. **I/O PORT**:

8 programmable digital I/O ports (Logic "0": 0 V; logic "1": +5 V) for the control of environment devices such as curtains, projection screen etc. and various environment monitoring devices.

11. **TAINET bus interface**:

1 **TAIDEN** bus interface to connect with **TAIDEN** power controller and lighting controller etc. (max. capacity of 128 devices)

Refer to the related device instructions before use; set the proper network ID code for each device.

12. **Wireless transceiver interface**:

For connecting wireless transceiver and for interaction with wireless touch panel to achieve wireless control.

13. **Wireless transceiver power supply interface**:

Power supply for wireless transceiver.

14. **Ethernet port**:

Connecting to PC software or wired touch panel, for remote controlling.

15. **Power supply**

16. **RELAY 1~4 port**:

4 low relay ports. Each low relay port supports 0.3 A / 125 V -AC, 1 A / 30 V -DC. Used to control environment devices such as projection screen, curtain, projector, and lighting etc. When the load is motor, light or solenoid etc, strictly observe the nominal load values allowed.

17. **RS-232C (TO COMPUTER) port**:

To connect the HCS-6000MCP2 main unit to the RS-232C of a PC, using the compulsory software of **TAIDEN** intelligent central control system.

The communication protocol is as following:

■ Interface: DB9 socket

■ Electric specification: Compliant to RS-232C standard

■ Cable: Dedicated multicore shielded cable for data transmission

- ■ Cable length: Less than 10 m
- ■ Baud rate: 19200 bps
- ■ Bit length: 8 bits
- ■ Stop bit:: 1 bit
- ■ Parity check: None

Pin	Signal
1	Empty
2	RXD（Receive data）
3	TXD（Send data）
4	Empty
5	GND（logic ground）
6	Empty
7	Empty
8	Empty
9	Empty

18. **IR OUTPUT 1~8 port**:

8 independent programmable IR control ports, outputting 8 way IR control signals respectively (the carrier wave is 38 KHz) to control multiple same or different devices, such as DVD, VCR, CD, MD and CD-R etc.

The IR port is a 3.5 mm jack; it should interact with IR transmission stick to perform IR control: plug the stick's one end into the port, and put the other end near the IR receiving window of the controlled device. Make sure that the distance to the receiving window is less than 20 cm.

19. **RS-232C（COM PORT）port**:

8 RS-232C ports:

RS-232 (1) ~ (3) are 1-way ports;

RS-232 (4) ~ (8) are 2-way ports.

For remote control of various peripheral devices connected to the RS-232C port, such as the projector or plasma display with RS-232C terminal. HCS-6000MCP2 especially has improved control functions for the RS-232C port. The setting of serial port is dynamic and supports various control protocols.

20. **Audio mixer with volume control**

✧ 2 channel stereo inputs with independent volume control

✧ 1 channel stereo symmetrical audio output via XLR

3.3 Installation

HCS-6000MCP2 main unit can be fixed in a standard 19-inch cabinet. The main unit is equipped with a pair of fixing brackets ①. First unscrew the lateral screws ② from the housing. Then fasten the brackets with these screws and put the main unit in the cabinet. Finally fix the four holes ③ up with screws.
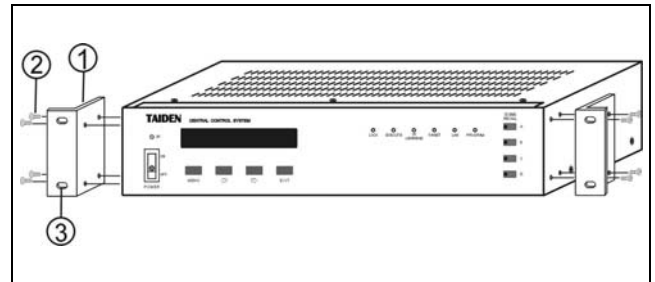

Figure 3.3   Installation of main unit

In addition, 1U metal stripes are included as decoration to be installed between the main units in the cabinet. It is also good for the ventilation and cooling off. Fix up the four holes ③ with screws.
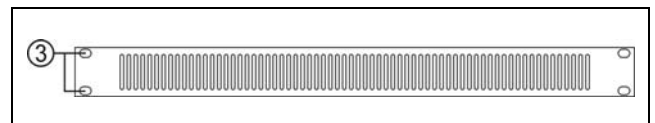

Figure 3.4   Decoration of cabinet
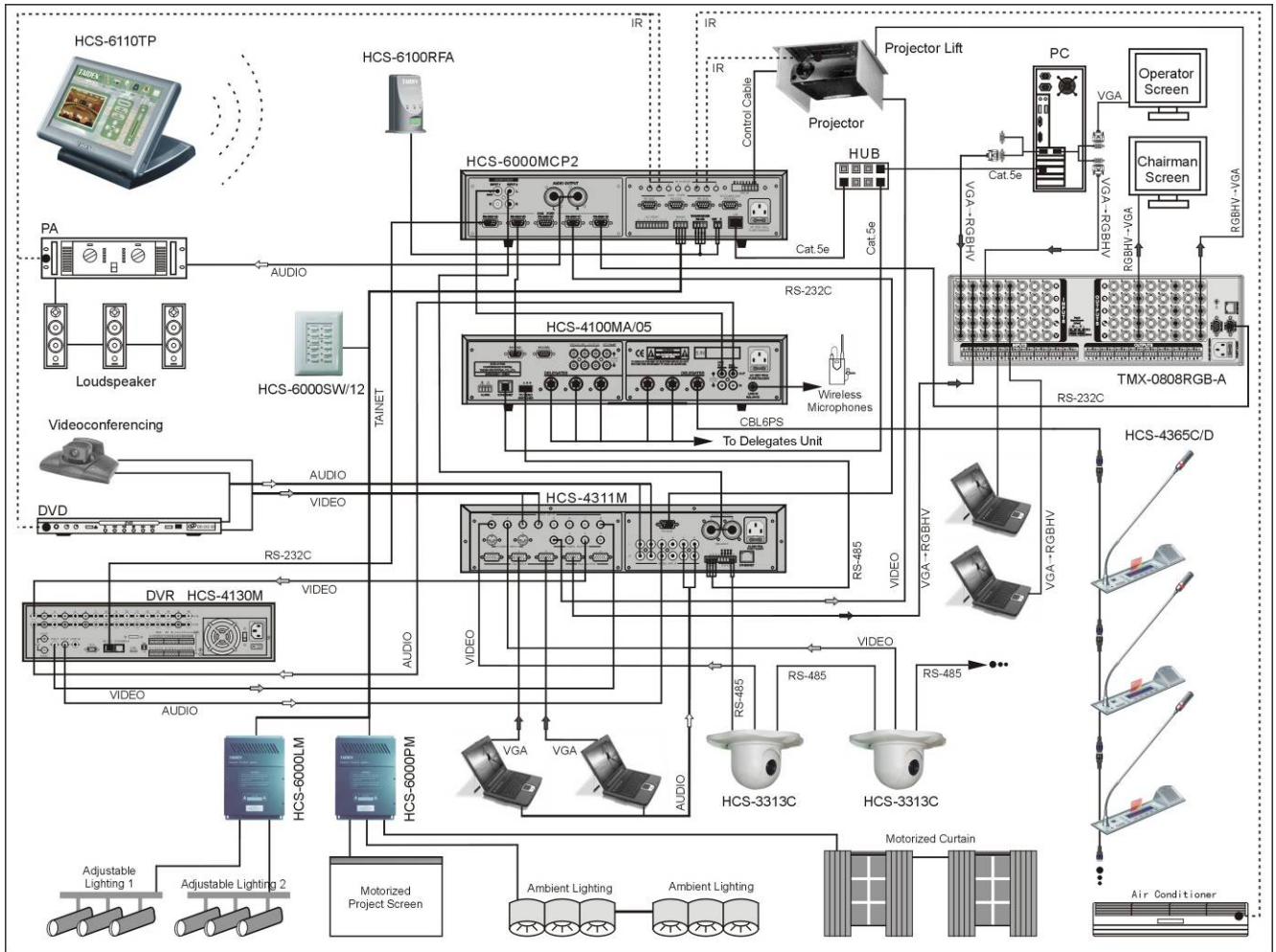
3.4 Connection example

Figure 3.5   HCS-6000MCP2 system connection

HCS-6000MCP2 is a classical main unit for intelligent central control system. The following functions can be realized with the system configuration above mentioned:

1. Conference main unit (HCS-4100MA/05) has voting, discussion and auto-tracking facilities
2. Built-in volume control in the central control system main unit, volume can be controlled by wireless touch panel remotely
3. Projector, DVD, PA and air-conditioner can be controlled via IR jacks
4. Opening and closing of the hatchway is controlled by low relay ports (terminal block)
5. Environment lights, curtains can be controlled by power controller via TAINET ports (terminal block)
6. The brightness of venue lighting can be controlled by lighting controller via TAINET ports (terminal block)
7. Various functions (e.g. light control, pre-stored scenes, etc.) of the wall-mounted keypads can be reached via TAINET ports (terminal block) based on the user's pre-definition
8. Speed dome camera can be controlled by wireless touch panel
9. Turn on/off conference units by wireless touch panel
10. DVR control by RS-232
11. RGB matrix switcher control by RS-232

3.5 Configuration and operation

All status of the main unit can be setup via an interactive menu on LCD and 4 operation buttons. The operation of all menu items will be introduced one by one in the next sections.

> **Note**:
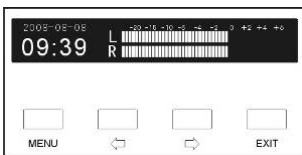> ☞ To come back to English version, please hold the "EXIT" button and switch on the main unit.

A) Starting initialization:

When switched on, HCS-6000MCP2 main unit starts initialization.

Initializing, please wait…
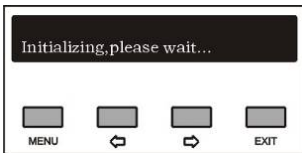
After that, the LCD display shows:

• Date
• clock
• volume

2008-05-05
09:39

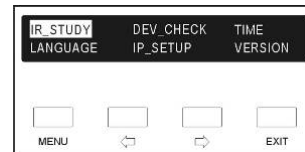### B) Accessing "Main" menu:

Press "MENU" button go to main menu, including 6 menu items:
"IR_Study"
"Device_check"
"Time"
"Language"
"IP_Setup"
"Version"

IR_STUDY   DEV_CHECK   TIME
LANGUAGE   IP_SETUP   VERSION

• Switch to desired menu item with "⇦/⇨" button, selected item is highlighted;
• Press "MENU" button to go into corresponding submenu;
• Use "EXIT" button to exit current menu and return to upper level menu.

Pressing "EXIT" button under main menu will return to central control system main unit start-up interface.

> **Note:**
> ☞ All menu setup except "TIME" and "IP_SETUP" use "MENU" button to exit saving changes, and use "EXIT" to exit discarding changes.

3.5.1 IR learning

Before controlling IR devices, such as projector, DVD player, PA and air condition, their IR code needs to be learned by the central control system.

There are two methods to do IR learning.

Method 1: (detailed operation please refer to the user's manual of CS-IR manager)

- Setup the type, IR transmission port and key's name and amount through "CS-IR manager";
- Do IR learning according to "CS-IR manager" software menu operation;
- Create the IR code library of the device and save as a file. The IR code library can be referred to by "CS-logic programmer";
- Programming the logic of the main unit with "CS-logic programmer" and upload the compiled project file to the main unit.

Method 2:

- Setup the type, IR transmission port and key's name and amount through "CS-IR manager" (detailed operation please refer to the user's manual of CS-IR manager);
- Programming the logic of the main unit with "CS-logic programmer" and upload the compiled project file to the main unit.
- Do IR learning through menu operation of the main unit front panel.
  - → go to main menu
  - → select "IR_STUDY" (the item is highlighted)
  - → press "MENU" button to enter IR learning "IR Learning" indicator lights up.

Operation:

a) Select IR remote control device:

```
1/8.Device:"DVD-Test",Port:1




MENU      ⇦        ⇨       EXIT
```
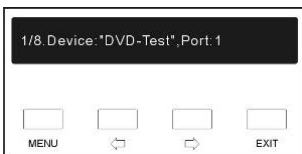
After selecting "IR_Study", user interface shows the above figure. The displayed data mean:

- 8 IR devices available in the project
- this is the 1st device
- the type/name of the device is "DVD"
- its IR port is 'Port 1'.

Following:

- Press "⇦/⇨" button to skip the device and browse other devices;
- Press "EXIT" button to exit IR learning;
- Or press "MENU" button to perform IR learning (change all or parts of the IR codes of the device), and enter the next step b).

Note:

☞ The amount, type and button are user defined and should coincide with the exact devices used in your project. The maximum device amount is 8 and the buttons for each device are unlimited.

---

b) Select IR remote control key:

```
3/20.Key:"Play",67




MENU      ⇦        ⇨       EXIT
```
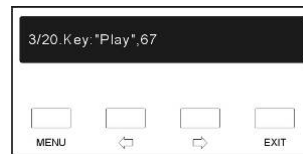
After selecting IR remote control device, the remote control key information of the current device is displayed according to above figure. The displayed data mean:

- this IR device uses 20 remote control keys
- the current is the 3rd key
- its name is "Play"
- the length of the IR code is 67 (the valid pulse number)

Following:

- Press "⇦/⇨" button to skip the current key and browse other keys;
- Press "EXIT" button to exit IR learning;
- Or press "MENU" button to perform IR learning and enter the next step c).

Note:

☞ Generally, the keys of a remote control have identical IR code length. However, if the length of a key's IR code learnt is different from other keys, it's presumed that the learning fails and needs relearning.

☞ Especially, among the IR control keys of the projector, the length of common IR codes is different from the mouse IR codes.

---

c) IR remote control key study:

After selecting the remote control key to study, a prompt of reminding you to press the corresponding key will be displayed and counted down for 10 seconds.

Following:

1). Aim the device's remote controller at the IR learning window on the front panel of main unit. The distance should not exceed 20 cm;

2). Press the corresponding key within 10 seconds;

3). If the learning is successful, an indicating tone will be given from central control system main unit and return to select IR remote control key interface;

4). Repeat step 2~3 and study all other keys for the current device;

5). Repeat step 1~3 and achieve all study process for all devices.

If IR learning has carried out successfully the above procedures, LCD prompts the dialog box as shown in the figure below to exit IR_STUDY with or without saving the settings, according to actual needs:

Following:

• Press "MENU" button to save the result and exit;
  <u>or</u>
• Press "EXIT" button to quit without saving the result.

After quitting IR learning and returning to the main menu, "IR Learning" indicator is switched off.

Note:
☞ The main unit neither accepts nor handles any control signal.

Warning:
☞ While saving the IR code do not power-down the system, otherwise the IR code is corrupted and the logic program must be downloaded again from the computer.

3.5.2 Device checking
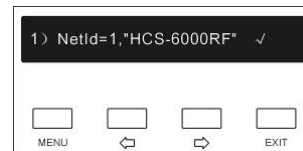
There are two sub-menus in "DEV_CHECK":
"DEV_LIST"
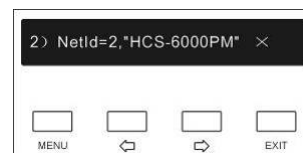"DEV_SEARCH"

■ "DEV_LIST"

"DEV_LIST" lists the information of network device and touch panel configured in logic program. Once the device list selected, the LCD displays the figure as following:

Displayed data mean:

• wireless transceiver with NetId 1 configured in logic program
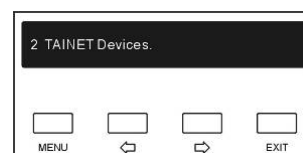• actual searching of the device is correct

Press the "⇦/⇨" button to continue.

Displayed data mean:

• HCS-6000PM power controller with NetId 2 configured in logic program
• but actual searching of the device fails.

Once the list passed through, the number of devices configured in logic program is shown:

Press the "⇦/⇨" button again to show the wireless touch panel configured in the project.
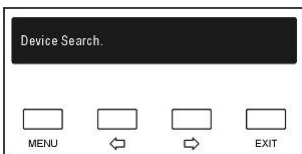The LCD displays the figure as following:

```
1）NetId=1,"HCS-6000TP"

  [MENU]   [⇦]    [⇨]    [EXIT]
```
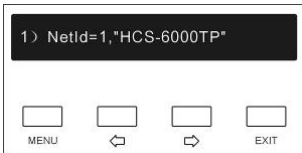
Displayed data mean:

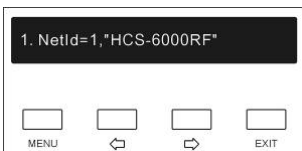- One wireless touch panel with RFId 1 configured in the project.

■ **"DEV_SEARCH"**

"DEV_SEARCH" searches and reports the devices actually connected to the TAINET network interface.

When the "DEV_SEARCH" is selected, press "MENU" button to start the searching, LCD shows as follow:

```
Device Search.

  [MENU]   [⇦]    [⇨]    [EXIT]
```

If the TAINET device is found, LCD displays the figure as following:

```
1. NetId=1,"HCS-6000RF"

  [MENU]   [⇦]    [⇨]    [EXIT]
```
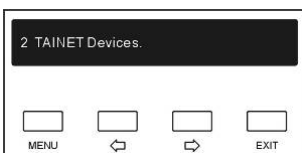
Displayed data mean:

- first device found with Netld = 1
- name of the first device is "HCS-6000RF"

Following:

- Press "EXIT" button to exit device searching and return to main menu;
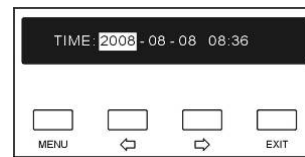- Press other button to continue searching.

If the searching is finished, the LCD shows the statistical data as follow:

```
2 TAINET Devices.

  [MENU]   [⇦]    [⇨]    [EXIT]
```

Press any button to exit "DEV_SEARCH" and return to main menu.

3.5.3 Time and date

The "TIME" menu is shown below:

```
TIME: 2008 - 08 - 08  08:36

  [MENU]   [⇦]    [⇨]    [EXIT]
```

Shows current system time: "2008-08-08 08:36".

It can be modified by following steps:

1). Use "⇦/⇨" button to select the item of date (year/month/day) or time (hour/minute) to be changed;
2). Press "MENU" button to select the item and go to compilation status;
3). Use "⇦/⇨" button to modify the item. Press and hold "⇦/⇨" button for a longer time to change the number quickly (= auto repeat);
4). After modification, press "EXIT" button to save and exit;
5). Repeat step 1 ~ 3 to modify the rest; finally, press "EXIT" to exit time menu.

3.5.4 Language

LCD menu has Chinese/English language options. The "LANGUAGE" menu is shown below:

```
LANGUAGE:  ⊙中文    ○ENGLISH

  [MENU]   [⇦]    [⇨]    [EXIT]
```
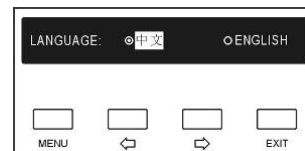
- Press "⇦/⇨" key to select the language;
- Press "MENU" button to confirm and exit.
- Press "EXIT" button to cancel selecting and exit.

The Chinese interface is as following figure:

```
红外学习    设备检测    时间设置
语言设置    网络设置    版本信息

  [MENU]   [⇦]    [⇨]    [EXIT]
```
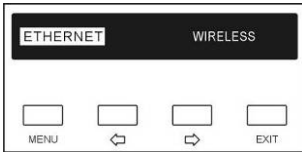
3.5.5 IP_SETUP

Two sub-menus are available in "IP_SETUP":
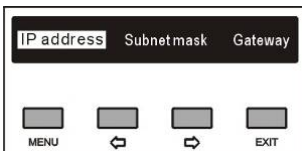"ETHERNET"
"WIRELESS".

■ **"ETHERNET"**

"ETHERNET" includes three submenus:
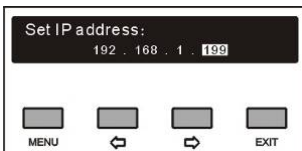"IP Address"
"Subnet Mask"
"Gateway"

a). Setup unique IP address for the main unit

To setup unique IP address for the main unit, select "IP address".
The LCD display is as following:

- Use "⇦/⇨" button to switch between the four numbers;
- Use "MENU" button to edit selected number;
- Use "⇦/⇨" button to decrease/increase the number. Press and hold "⇦/⇨" button for a longer time to change the number quickly (= auto repeat).
- Use "EXIT" to return to high level menu.

b). Setup Subnetmask and Gateway for the main unit

To setup "Subnetmask", "Gateway" use the same procedure as described in IP address.

Note:
☞ "IP address", "Subnetmask" and "Gateway" of the system software should accord with the main unit, else connection error will occur.
☞ All menu setup except "TIME" and "IP_SETUP" use "MENU" button to exit saving changes, and use "EXIT" to exit discarding changes

■ **"WIRELESS"**

The "Binding" function in "Wireless" is binding the wireless touch panel again to the wireless transceiver, if the working channel of the wireless transceiver was changed.

Note: this function should be operated within 10 seconds after entering binding state (refer to section 2.4.3.1).
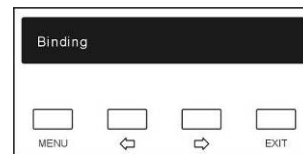
3.5.6 VERSION

Two sub-menus are available in "VERSION":

"System version"

"User version"
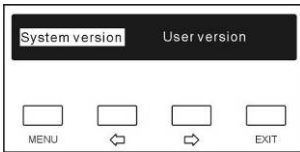
■ **"System version"**

"System version" shows the version information of the system software (firmware program):

- version number
- creating time

The display is shown below:

The firmware program can be updated via COM port.

■ **"User version"**

"User version" shows the version information of the user programming software (project logic configuration file);

The display is shown below:

As the example shows, the project name is "**TAIDEN** CENTRAL CONTROL SYSTEM"; the version no. is "3.00", and the last update time is 08/08/2008.

3.7 Application examples of related software

3.7.1 CS-Logic programmer

All control interfaces and modes of HCS-6000MCP2 intelligent central control system are provided with open set-up environment; user can program each control port and set various control protocols to communicate with various controlled devices.

HCS-6000MCP2 software is a visualized develop environment for the user. The specific programming software "CS-Logic Programmer" (available on the documentation CD-ROM) provides a flexible programming method to program the control interface of HCS-6000MCP2 in graphics mode and uses specific control protocols and instructions for device control.

(Refer to "CS-Logic programmer" instructions for details)

After HCS-6000MCP2 programming, the compiled program is to be uploaded to HCS-6000MCP2. (Refer to section 3.6.2 - "File transfer")

3.7.2 CS-IR manager

"CS-IR Manager" is a specific IR code management software (available on the documentation CD-ROM); it can be used for cooperating with HCS-6000MCP2 programming software or for independent use.

TAIDEN "CS-IR Manager" is provided with the related management facilities of IR codes, including IR learning, storage, management and generating valid IR code library for the specific electric equipment. The IR code library can be saved as a file.

The IR code library can be referred to by the HCS-6000MCP2 programming software, through software menu operation of "User device library – IR device".

Chapter 4. Network peripheral devices

4.1 Wireless transceiver

4.1.1 Function introduction

HCS-6100RFS/RFX wireless transceiver cooperates with wireless touch panel to achieve 1-way/2-way wireless controlling. Wireless transceiver receives the RF signal from the wireless touch panel and transmits the received data to the central control main unit via the TAINET network; at the same time, the 2-way transceiver feeds back status of the main unit to the touch panel and achieves 2-way controlling. HCS-6100RFS/RFX wireless transceiver works at ISM frequency band 2.4 GHz, which can be freely used worldwide.

4.1.2 Interface and indicator
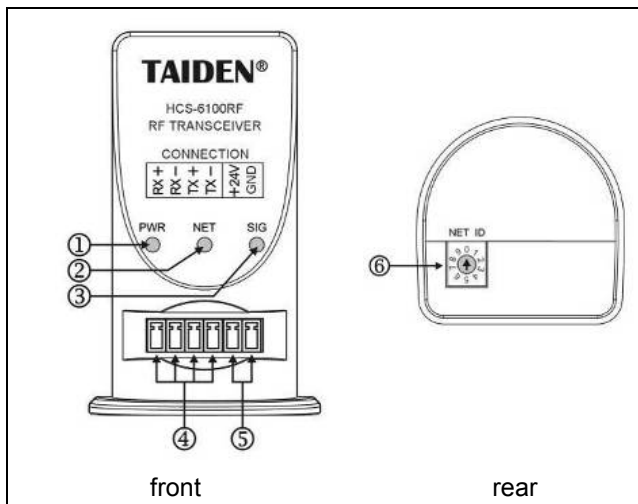
Figure 4.1   HCS-6100RFS/RFX wireless transceiver

4.1.3 Connection explanation

Figure 4.2   wireless transceiver connection to main unit

Figure 4.1:

1. Power indicator

   Illuminated when power supply connected

2. Network indicator

3. RF signal indicator

4. Data interface

   Connecting wireless transceiver to central control system main unit

5. Power supply interface

   Supplies power to wireless transceiver

6. RF channel selector

   Wireless frequency setup of wireless transceiver

4.2 Wireless Router

4.2.1 Function introduction

HCS-6100RF/ROUTER wireless router is used for extending the reception distance of the wireless transceiver.

If the touch panel temporarily works and hangs up, the distance between the touch panel and the transceiver is too large. Install a wireless router between the touch panel and the wireless transceiver to have interruption-free operation.

4.2.2 Interface and indicator

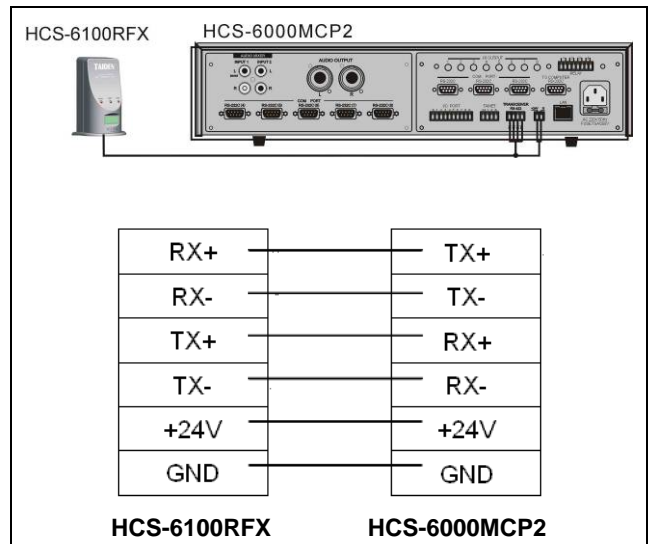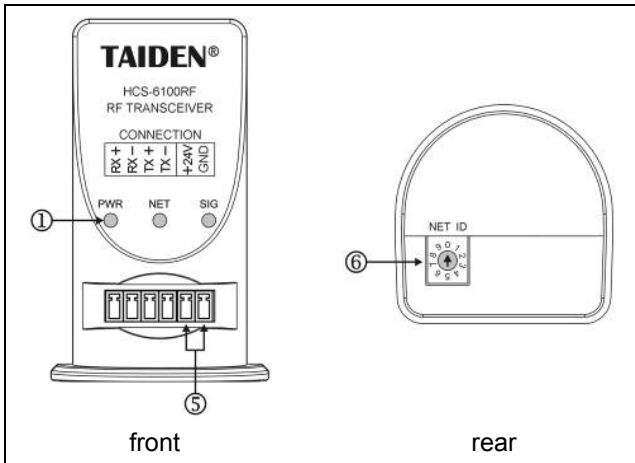
Figure 4.3   HCS-6100RF/ROUTER wireless router

Figure 4.3:

1. Power indicator

   Illuminated when power supply connected.

5. Power supply interface

   Supplies power to HCS-6100RF/ROUTER.

6. RF channel selector

   For HCS-6100RF/ROUTER wireless frequency setup. The router function will work only when this frequency coincidences both with the frequencies of the wireless transceiver and touch panel.

4.2.3 Connection explanation

• DC + 5 ~ + 24 V from external source

   or

• From the main unit by connecting the corresponding interface.

4.3   IR transmission stick

CBL2PL/03 and CBL3PL/03 IR transmission sticks are suitable IR transmission devices with 3-meter-long cable. Matches central control system main unit to achieve IR remote controlling for projector, DVD, PA, air condition etc.

To operate, first plug the connector of the IR transmission stick into the IR OUTPUT socket on the main unit. Following, place the IR transmission terminator directly in front of the IR reception window of the controlled device. The distance should not exceed 20 cm.

After IR learning procedure (5.3.1), the corresponding IR device can be controlled by operating the IR remote controller directly in front of the IR receiving window on the front panel.
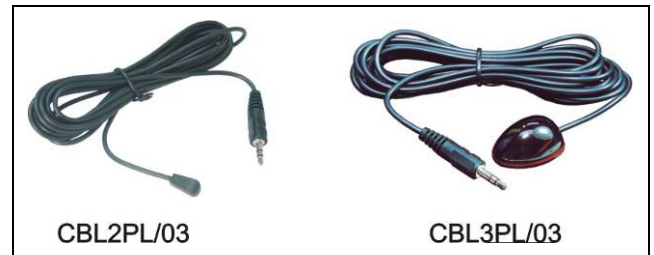

Figure 4.4   HCS-6100 IR transmission stick

4.4 Lighting controller

4.4.1 Function introduction

The 4-way incandescent arc lamp lighting modules are used to control the luminance of incandescent lamps (4-way independent control or integrated control as option).

Connection to the main unit is made by using the TAINET port at the rear side. Each device must have a unique ID number if operated in the same network.

4.4.2 Internal wiring & debugging switch illustration

Output switch:

- switch=ON → output of the corresponding line = ON
- switch=OFF→output of the corresponding line = OFF

Software screening switch with output switch = ON:

- screening switch = OFF→ output lighting of the corresponding line is controlled by software.
- screening switch = ON → output lighting of the line is at its maximum and is independent of the software.
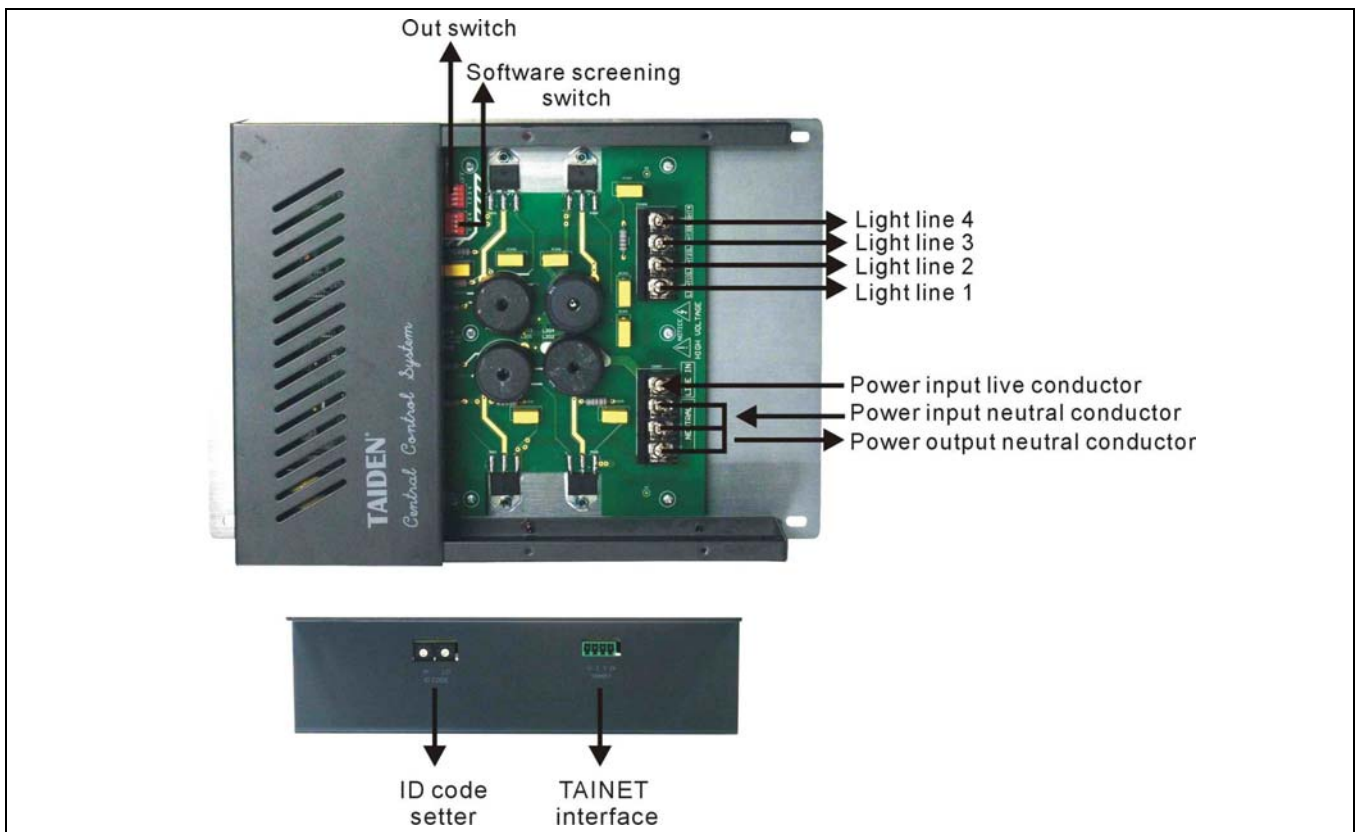

Figure 4.5   HCS-6000LM lighting controller

4.4.3 Connection explanation

If HCS-6000LM lighting controller is connected to the main unit via the 4-pin (24, Y, Z, G) network interface, be sure that each pin is connected to the relevant pin on the main unit; if multiple HCS-6000LM are operated, connect as shown in following figure:
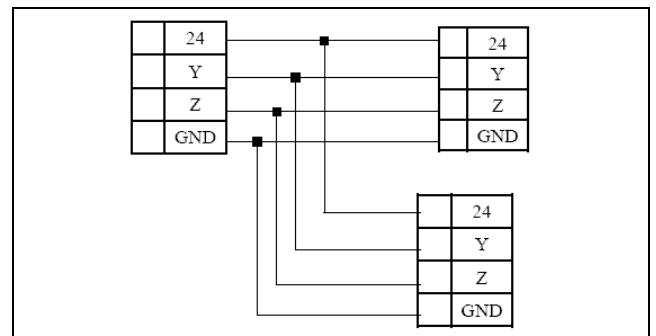
Figure 4.6   TAINET devices connect to main unit

4.5 Power controller

4.5.1 Function introduction

HCS-6000PM is a high current power controller cooperated with HCS-6000M main unit to control power supply for lightings, electrical curtain, electrical screen and projector etc. It features 8 high current relays for a maximum load current of 30 A each.

4.5.2 Internal wiring illustration

The following load can be connected to HCS-6000PM power controller:
(1) 8 independent switch controls;
(2) 4 electrical curtain switches;
(3) Other composition within the controllable scope (e.g. 1 electrical curtain + 6 independent switches or 2 electrical curtains + 4 independent switches)
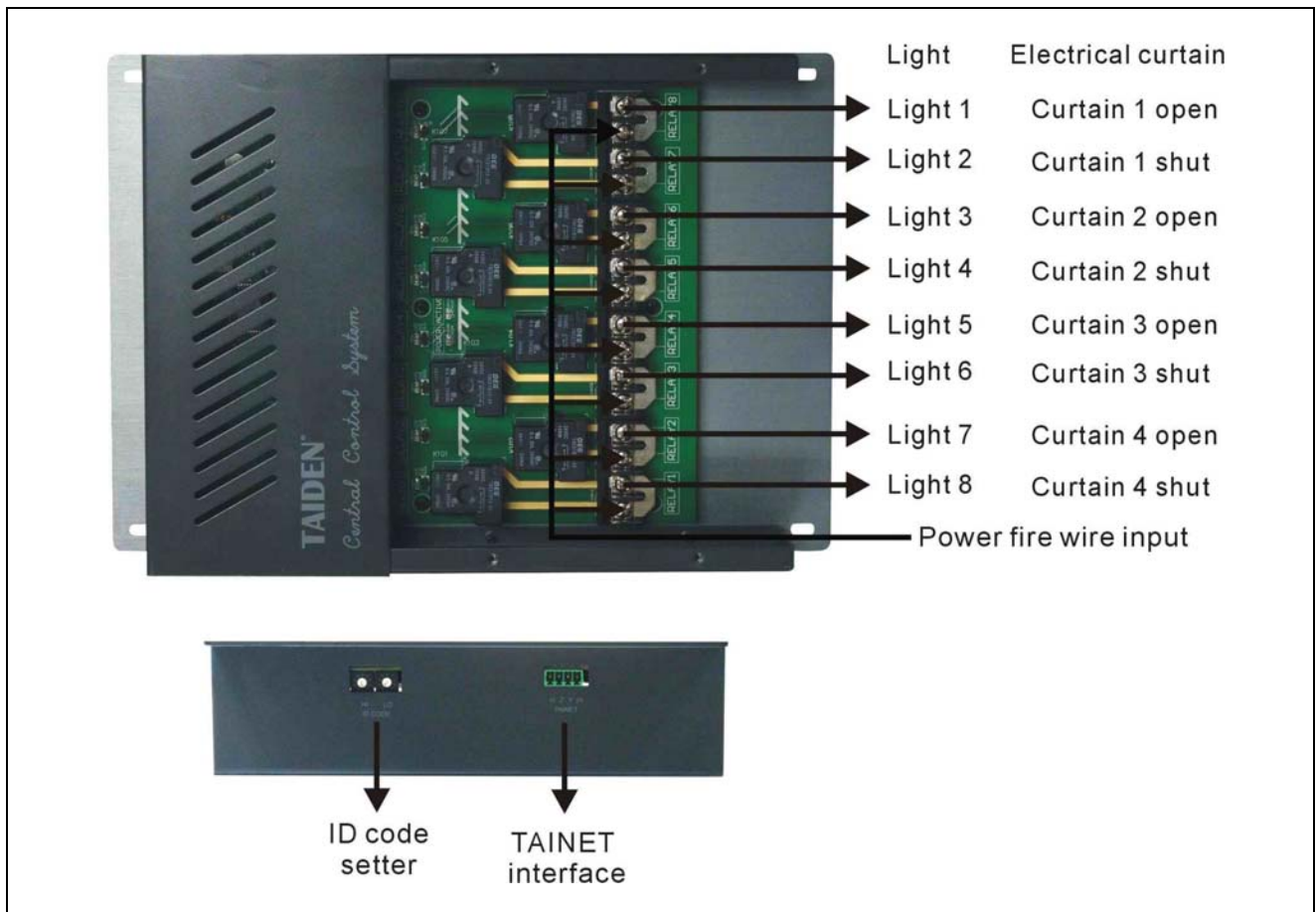
Figure 4.7   HCS-6000PM power controller

4.5.3 Connection explanation

If HCS-6000PM power controller is connected to the main unit via the 4-pin (24, Y, Z, G) network interface, be sure that each pin is connected to the relevant pin on the main unit; if multiple HCS-6000PM are operated, connect as shown in figure 4.6.

4.6 Intelligent Wall-mounted Keypad

4.6.1 Function introduction

There are 4 types of HCS-6000SW series intelligent wall-mounted keypad: 2, 4, 8, 12 keys, to interact with HCS-6000M main unit. Function and logic are programmable, applicable for scene preset, controlling light, air condition, electric curtain, electric screen and projector.

4.6.2 Internal wiring illustration

Figure 4.8   HCS-6000SW intelligent wall-mounted keypad

4.6.3 Connection explanation

If HCS-6000SW intelligent wall-mounted keypad is connected to the main unit via the 4-pin (24, Y, Z, G) network interface, be sure that each pin is connected to the relevant pin on the main unit; if multiple HCS-6000PM are operated, connect as shown in figure 4.6.
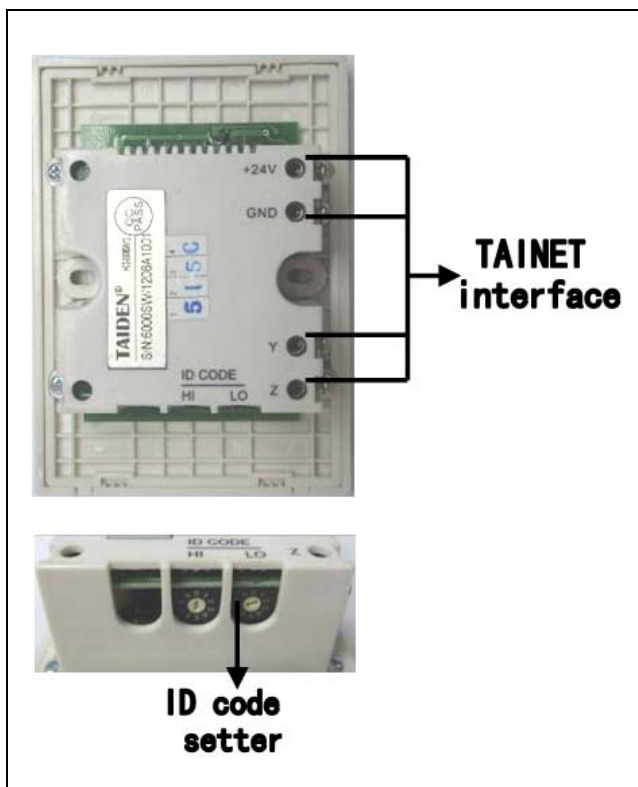
Chapter 5. Fault diagnosis

Fault	Solution
Touch panel cannot power on	✧ Possibly caused by low battery, please plug-in the adaptor and charge the battery.
Black screen	✧ Possibly because touch panel is in standby or power off state. Touch the screen to activate it and make sure that the battery or the power supply is connected.
Touch panel displays but cannot achieve controlling	✧ If the touch panel drifts, please go to touch panel setup interface and do calibration. ✧ When wired connection, note that the remote IP address must coincide with the address of the central control system main unit. ✧ When wireless connection, note that the RF ID of the touch panel must coincide with the ID in the program. ✧ When wireless connection, note that the channel configuration of the touch panel must coincide with the configuration of 6100RF.
"TAINET" indicator doesn't light up when button of touch panel is pressed.	✧ Wrong RF ID for HCS-6000TP. Set the actual RF ID of HCS-6000TP to accord with the value set in logic program.
"TAINET" indicator lights up but "EXECUTE" and "LAN" indicators are off when button of touch panel is pressed.	✧ Logic program has error or does not accord with touch panel interface program. Check the logic program and touch panel interface program
Cannot start unit, the power indicator is off	✧ The power socket isn't properly plugged. Properly plug the mains plug to the socket.
Cannot start unit, the power indicator is on. (The buzzer beeps sometimes)	✧ The interval between the restart and last power down is too short. The interval should be at least 5 seconds.
TAINET network devices are not under control of the main unit control (the "EXECUTE" indicator is on when under control)	✧ TAINET network device's NET ID is wrong. Set the TAINET device's NET ID to accord with the logic program.
TAINET network connection with a multitude of devices; some are uncontrollable while controlling a single device works normally.	✧ Double assignment of NET IDs in TAINET devices. Change the device's NET ID.
No voice output	✧ Input volume is too low. Increase input volume. ✧ Master volume is too low. Increase master volume. ✧ Under MUTE state. Release from MUTE state.
IR control facility is abnormal	✧ IR transmission stick isn't aimed at the IR receiving window of the controlled device. Aim the stick at the controlled device, with a distance less than 20 cm. ✧ The IR learning port does not accord with the port of the IR stick. Make sure the two ports are in accordance. ✧ The IR codes learnt are invalid. Learn the previously incorrect IR buttons again, following the steps of IR learning strictly.
"PWR" indicator of HCS-6100RF does not light up	✧ Check the power cord between RF transceiver and main unit.
The "SIG" indicator of HCS-6100RF is abnormal when button of touch panel is pressed.	✧ RF interference source(s) nearby. Remove the interference source(s).

Chapter 6. Technical data

System environmental conditions

Working conditions fixed/stationary/transportable

Temperature range:

- Transport:	-40 °C to +70 °C
- Operating:	0 °C to +45 °C
Max. Relative humidity:	< 95% (not condensing)
Safety:	Compliant to EN 60065
EMC approvals:	CE
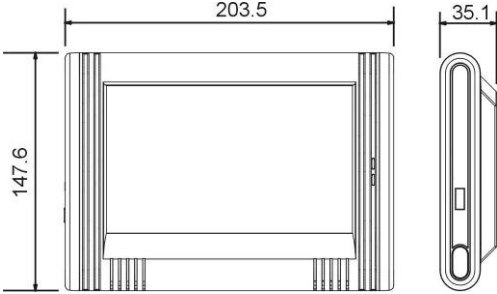
6.2 Widescreen touch panel and accessory

6.2.1 7" widescreen touch panel

6.2.1.1 Physical characteristics
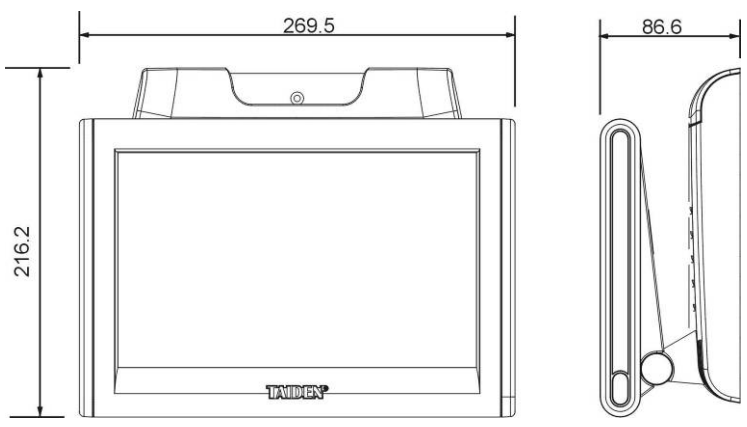
Type	HCS-6107TP/TPX
Installation	Tabletop/Portable
Dimension (mm)	
Color	Black/Gray
Weight	0.72 kg（incl. Battery, excl. portable base plate） 1.41 kg（incl. battery and portable base plate）

6.2.1.2 Electrical characteristics

Type		HCS-6107TP/TPX
LCD	Type	True color TFT LCD
	Dimension	7 inches
	Aspect Ratio	16:9
	Resolution	800×480
	Brightness	300 cd/m^2
	Contrast	500
	Dot pitch	0.1905×0.1905 mm
	Color	2^{18} (18 bit)
	Standard	PAL/NTSC
Power		11.1 V DC (HCS-6107BAT rechargeable Lithium-Ion battery) 15 V DC (HCS-ADP15V adapter)
Battery working time		Continuous working duration: approx. 6 hours (the screen is continuously on) Normal working duration: approx. 7 days 　　　　　　　　　　(related to the settings of power management and luminance) Standby time: approx. 80 days
Current		Normal working current: 350 mA ~ 400 mA Standby current: 100 mA ~ 120 mA Power-off current: 1 mA ~ 1.5 mA
Wireless transmission parameters		Working frequency: 2.4 GHz Effective range: > 25 meters
Memory		64 MB SDRAM，64 MB Flash
Other parameters		digital button≤4000, analog button ≤1000 ID range of RF: 0~9, button ID number: 0001~4000

6.2.2 10" widescreen touch panel

6.2.2.1 Physical characteristics

Type	HCS-6110TP/TPX
Installation	Tabletop
Dimension (mm)	
Color	Black/Gray
Weight	2.34 kg

6.2.2.2 Electrical characteristics

Type		HCS-6110TP/TPX
LCD	Type	True color TFT LCD
	Dimension	10.2 inches
	Aspect Ratio	16:9
	Resolution	800×480
	Brightness	400 cd/m^2
	Contrast	400
	Dot pitch	0.2775×0.2775 mm
	Color	2^{18} (18 bit)
	Standard	PAL/NTSC
Power		16 V/19 V DC (HCS-6110BAT rechargeable Lithium-lon battery) 15 V DC (HCS-ADP15V adapter)
Battery working time		Continuous working duration: approx. 4~4.5 hours (the screen is continuously on)
Current		Normal working current: approx. 800 mA Standby current: 100 mA ~ 120 mA Power-off current: 1 mA ~ 1.5 mA
Wireless transmission parameters		Working frequency: 2.4 GHz Effective range: > 25 meters
Memory		64 MB SDRAM，64 MB Flash
Other parameters		digital button≤4000, analog button ≤1000 ID range of RF: 0~9, button ID number: 0001~4000

6.2.3 12" widescreen touch panel
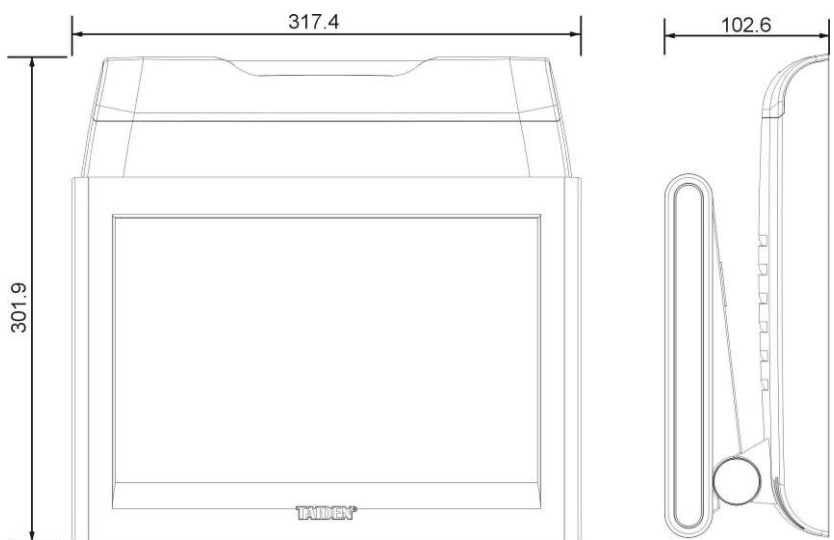
6.2.3.1 Physical characteristics

Type	HCS-6112TP/TPX
Installation	Tabletop
Dimension (mm)	
Color	Black/Gray
Weight	3.87 kg

6.2.3.2 Electrical characteristics

Type		HCS-6112TP/TPX
LCD	Type	True color TFT LCD
	Dimension	12.1 inches
	Aspect Ratio	16:9
	Resolution	1280×800
	Brightness	200 cd/m^2
	Contrast	500
	Dot pitch	0.204×0.204 mm
	Color	2^{18} (18 bit)
	Standard	PAL/NTSC
Power		16 V/19 V DC (HCS-6110BAT rechargeable Lithium-Ion battery)
		15 V DC (HCS-ADP15V adapter)
Battery working time		Continuous working duration: approx. 4 hours (the screen is continuously on)
Current		Normal working current: 820 mA~870 mA
		Standby current: approx. 350 mA
		Power-off current: 1 mA ~ 1.5 mA
Wireless transmission parameters		Working frequency: 2.4 GHz
		Effective range: > 25 meters
Memory		64MB SDRAM，64MB Flash
Other parameters		digital button≤4000, analog button ≤1000
		ID range of RF: 0~9, button ID number: 0001~4000

6.2.4 15" widescreen touch panel

6.2.4.1 Physical characteristics

Type	HCS-6115TP/TPX
Installation	Tabletop
Dimension (mm)	
Color	Black/Gray
Weight	4.61 kg

6.2.4.2 Electrical characteristics

Type		HCS-6115TP/TPX
LCD	Type	True color TFT LCD
	Dimension	15.4 inches
	Aspect Ratio	16:9
	Resolution	1280×800
	Brightness	200 cd/m^2
	Contrast	300
	Dot pitch	0.2587×0.2587 mm
	Color	2^{18} (18 bit)
	Standard	PAL/NTSC
Power		16 V/19 V DC (HCS-6110BAT rechargeable Lithium-Ion battery) 15 V DC (HCS-ADP15V adapter)
Battery working time		Continuous working duration: approx. 3.5 hours (the screen is continuously on)
Current		Normal working current: 970 mA~1020 mA Standby current: approx. 380 mA Power-off current: 1 mA ~ 1.5 mA
Wireless transmission parameters		Working frequency: 2.4 GHz; Effective range: > 25 meters
Memory		64MB SDRAM，64MB Flash
Other parameters		digital button≤4000, analog button ≤1000 ID range of RF: 0~9, button ID number: 0001~4000
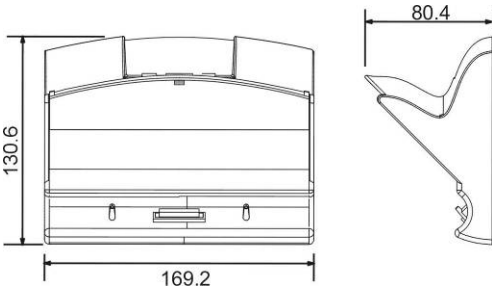
6.2.5 Power Adapter

Type	HCS-ADP15V
Mains voltage	100 V ~ 240 V AC, 50 Hz /60 Hz
Output	15 V DC, 2.2 A
Cable length	3 m
Dimension	95 (w) x 28 (h) x 45(d) mm
Color	Black
Weight	0.3 kg

6.2.6 Rechargeable Lithium-Ion Battery

Type	HCS-6107BAT	HCS-6110BAT
Nominal voltage	11.1 V	16 V / 19 V
Nominal capacity	2400 mAh	48.8 Wh
Charging time	2.5 ~ 3 hours	3.5 ~ 4 hours
Working duration	Continuous working duration: approx. 6 hours (the screen is continuously on) Normal working duration: approx. 7 days (related to the settings of power management and luminance) Standby time: approx. 80 days	Depending on the touch panel type
Color	Black/Gray	Black
Weight	0.2 kg	0.42 kg

6.2.7 Portable base plate

Type	HCS-6107BKT
Installation	Tabletop
Dimension (mm)	
Color	Black/Gray
Weight	0.69 kg

6.3   Main unit

6.3.1 Physical characteristics

Type	HCS-6000MCP2
Installation	Tabletop/19 inch rack
Dimension (mm)	
Color	White
Weight	7.5 kg

6.3.2 Electrical characteristics

Type	HCS-6000MCP2
Audio gain	0 dB
Frequency range	20 Hz ~ 20 kHz +0/-0.5dB (1 kHz reference)
S/N ratio	≥92dB
Crosstalk attenuation	≥80 dB
Total harmonic distortion	≤0.01% (1 kHz)
Input impedance	≥10 kΩ
Output impedance	≤10 Ω
Max. input level	7 Vrms
Max. output level	7 Vrms
TAINET	1 TAINET 4-pin interface
TO COMPUTER	RS-232C, DB9F
IR OUTPUT	8 IR transmission ports
I/O PORT	8 programmable digital I/O ports
RELAY	4 low relays (0.3 A/125 V-AC, 1 A/30 V-DC)
COM PORT (RS-232C)	8 DB9 serial ports, RS-232 (1) ~ (3) are 1-way ports, RS-232(4) ~ (8) are 2-way ports. (RS-232C, max. baud rate 115,200 bps)
ETHERNET	RJ45 (RS-485) network interface
POWER	America, Japan: AC 110 V~120 V 60 Hz (FUSE 5 A/250 V) Asia, Europe: AC 220 V~240 V 50 Hz (FUSE 2 A/250 V)

0 dBu =   0.775 Vrms

6.4 Network peripheral devices

6.4.1 Wireless transceiver and wireless router

- 100 m wireless RF(2.4 GHz) range
- 1-way/2-way wireless transceiver
- Dimensions L×W×H (mm): 83×50×50

6.4.2 Lighting controller

- 4 controllable lighting interfaces
- Power supply: 220 V 50 Hz;
- ID select: via ID setup rotary switches (HI/LO)
- Independent network protocol control
- Single line or multiple line controllable
- For connection to HCS-6000M series intelligent central control system main unit
- Load capacity: power (single line) ≤1500 W;
                 power (total) ≤5000 W;

The actual load power must be below this maximum value! The wiring for connection must be designed for the requirement of max. current. The table below shows the relations between wire dimensions and max. safe current (excerpt from the table 11 of IEC 60950).

Max. current	Wire dimensions	Over loading factor
0~25A	2.5mm(14AWG)	4mm(12AWG)
25~32A	4mm(12AWG)	6mm(10AWG)
32~40A	6mm(10AWG)	10mm(8AWG)
40~63A	10mm(8AWG)	16mm(6AWG)
63~80A	16mm(6AWG)	25mm(4AWG)

Note: in some countries or regions, the over loading factor is required for wiring. For safety purposes, **TAIDEN** recommends to use only the overload cable version for your max. current. (Example: 12 AWG for 0 to 25 A)

- Installation requirement: The mounting of the device should be well grounded using a PE (protective grounding) wire whose dimensions and insulation material are equivalent to that of the branch power line. The PE insulation wire should be a green wire with yellow stripe. The grounding wire is used to connect device to the building floor.
- Dimensions L×W×H (mm): 320×221×66
- Weight: 2.5 kg

6.4.3 Power controller

- 8 independent power switch controls
- ID select: via ID setup rotary switches (HI/LO)
- Power supply: 24 VDC, supplied by TAINET network
- Independent network protocol control
- Single or multiple line switch
- For connection to HCS-6000M series intelligent central control system main unit
- Load capacity: single line 20 A;
  The actual load power must be below this maximum value. The wiring for connection must be designed for the requirements of max. current. The figure below shows the relations between wire dimensions and max. safe current (excerpt from the table 11 of IEC 60950).

Max. current	Wire dimensions	Over loading factor
0~25A	2.5mm(14AWG)	4mm(12AWG)
25~32A	4mm(12AWG)	6mm(10AWG)
32~40A	6mm(10AWG)	10mm(8AWG)
40~63A	10mm(8AWG)	16mm(6AWG)
63~80A	16mm(6AWG)	25mm(4AWG)

Note: in some countries or regions, the over loading factor is required for wiring. For safety purposes, **TAIDEN** recommends to use only the overload cable version for your max. current. (Example: 12 AWG for 0 to 25 A)

- Dimensions L×W×H (mm): 320×221×66
- Weight: 2.7 kg

6.4.4 Intelligent wall-mounted keypad

- Communication method: TAINET Control BUS
- ID select: via ID setup rotary switches (HI/LO)
- Button number: 2/4/8/12 respectively
- Command programming: user-defined command code by programming software
- Connection port: TAINET BUS
- Power supply: 24 V DC, supplied by TAINET network
- Dimensions L×W×H (mm): 86×119×11
- Color: White

Appendix

Regulatory Information

FCC Compliance and Advisory

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.

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 or 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: 1) reorient or relocate the receiving antenna; 2) increase the separation between the equipment and the receiver; 3) connect the equipment to an outlet on a circuit different from that to which the receiver is connected; 4) consult the dealer or an experienced radio/TV technician for additional suggestions.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Where shielded interface cables have been provided with the product or specified additional components or accessories elsewhere defined to be used with the installation of the product, they must be used in order to ensure compliance with FCC regulation.