Large-Scale Voting System

Installation and Operating Manual

V 1.4

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- Contents may change without prior announcement

- All technical specifications are guideline data and not guaranteed features

- Taiden Co., Ltd. is not responsible for any damage caused by improper use of this manual

- The equipment must be connected to earth!

- This product conforms to the rules of the European directive 2004/108/EC.

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

- In order to extend the life time of whole system, we strongly recommend that the congress system be scheduled to shut down every day in the evening when not in use.

- TAIDEN is the registered trademark of TAIDEN Co., Ltd.

Important Safety Instructions

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

6. The MAINS plug serving as a disconnection device should be easy to operate.

7. The apparatus should be connected to the MAINS socket-outlet with protective earth.

8. Clean only with dry cloth.

9. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

10. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

11. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade and the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

12. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

13. Only use attachments/accessories specified by the manufacturer.

14. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

15. Unplug this apparatus during lightning storms or when unused for long periods of time.

16. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

17. 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.

18. Power supply cords:
    AC 100 V - 120 V 60 Hz or AC 220 V - 240 V 50 Hz

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

20. All TAIDEN products are guaranteed for definite time (see the WARRANTY CARD for details) excluding the following cases:
    A. All 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.

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

22. 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.

CAUTION: DO NOT use alcohol, ammonia or petroleum solvents or abrasive cleaners to clean the devices.

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.

Important Safety Instructions

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 reduce the risk of fire or electric shock, 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

WARNING: The apparatus should be connected to a mains socket outlet with a protective earthing connection.

Contents

Installation & User Guide

About this manual

This manual is a comprehensive guide to the installation and operation of the TAIDEN Large-Scale Voting System. It includes the detailed description of the functions and interfaces of the voting system components, system connection and installation, system set-up and operation.

The manual is divided into the following chapters:

Chapter 1: Introduction

An introduction to the voting system composition, technology, functions and features.

Chapter 2: Congress main unit

Detailed descriptions of the functions and indications, installation and connection, configuration and operation of the voting system control main unit (HCS-4100MC/50).

Chapter 3: Voting unit

Detailed descriptions of the functions and indications, installation and connection, operation of the Large-Scale Voting System contribution units.

Chapter 4: System connection

Detailed descriptions of the connection between system devices.

Chapter 5: Accessories

An introduction to the voting system accessories.

Chapter 6: Environment and maintenance

An introduction to the work environment and the maintenance of Large-Scale Voting System.

Chapter 7: Specifications

Main technical parameters of Large-Scale Voting System.

This manual is applicable to:

■ **Congress control main units**

HCS-4100MC/50 fully digital standard congress system main unit

discussion - voting - 256x32 LCD

■ **Voting units**

HCS-4368CT/50 fully digital voting system chairman unit

tabletop - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V - Chinese panel

HCS-4368CTE/50 fully digital voting system chairman unit

tabletop - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V - English panel

HCS-4368DT/50 fully digital voting system delegate unit

tabletop - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V - Chinese panel

HCS-4368DTE/50 fully digital voting system delegate unit

tabletop - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V - English panel

HCS-4368CT/FM/50 fully digital voting system chairman unit

flush-mounting - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V – cover - Chinese panel

HCS-4368CTE/FM/50 fully digital voting system chairman unit

flush-mounting - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V – cover - English panel

HCS-4368DT/FM/50 fully digital voting system delegate unit

flush-mounting - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V – cover - Chinese panel

HCS-4368DTE/FM/50 fully digital voting system delegate unit

flush-mounting - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V – cover - English panel

HCS-4368SDTE/FM/50 fully digital voting system delegate unit

flush-mounting - 3 voting keys - waterproof – antistatic 15000 V – cover - English panel

HCS-48U6DVOTTME fully digital voting system delegate unit

flush-mounting - 3 voting keys

HCS-4368DME/FM/50 fully digital voting system delegate unit

flush-mounting - multi-parliamentary voting - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V – cover – English panel

Chapter 1 Introduction

1.1 Summary

TAIDEN Large-Scale Voting System with embedded high performance CPU ensures full duplex data transmission speed up to 100 Mbps. High speed voting and high accuracy due to Ethernet connection of CMU and PC.

System design for high reliable redundancy and hot-spare dual server structure. Electrostatic prevention and water proof design, for worldwide unrivaled reliability and safety.
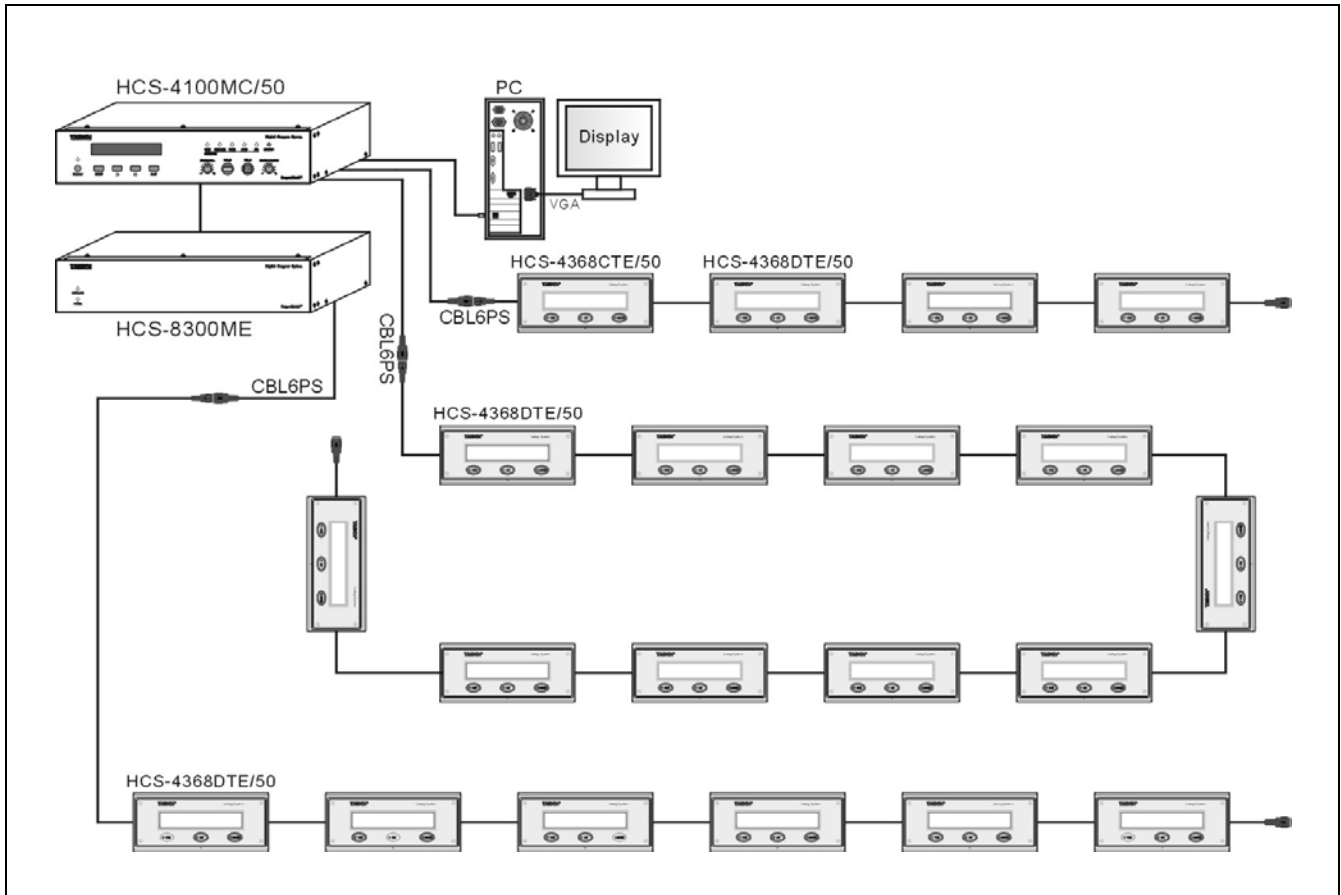

Figure 1.1　System overview

This system consists of one or more of the following items:

■ **Congress control main unit**

HCS-4100MC/50 fully digital standard congress system main unit
discussion - voting - 256x32 LCD

■ **Voting units**

HCS-4368CT/50 fully digital voting system chairman unit
tabletop - 3 voting keys - 256x32 LCD - waterproof – antistatic
15000 V - Chinese panel

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flush-mounting - multi-parliamentary voting - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V – cover – English panel

1.2 System technology

- **MCA-STREAM digital audio processing and transmission technology**

TAIDEN proprietary MCA-STREAM technology is the essential data transmission technology in the voting system, e.g. transmitting control and other information data over a single dedicated 100 Mbps high speed 6-pin cable. Every unit - congress main unit, voting unit - is equipped with a high performance CPU as the kernel of the advanced technology infrastructure.

- **System hardware structure**

Voting system hardware is an embedded structure based on dual high performance CPUs. Even in stand-alone mode, voting is competent for the management of electronic voting.

- **Modular system structure**

Any kind of configuration can be set up just by daisy-chaining Large-Scale Voting System voting units. The modular system structure of the voting system is applicable to any kind of conference and provides an accurate and efficient solution. Additional voting units can be added when needed. More system functions are available in connection with a PC and control software.

- **Dual main unit hot spare**

The voting system hardware systems can be operated on hot standby with a master and a backup main unit. If the master main unit fails, the backup unit starts to operate automatically as master and takes over the meeting. Thus continuation of the conference is guaranteed.

- **System software infrastructure**

The voting system software is designed for the prevalent Client/Server structure. Client and server communicate with each other by using TCP/IP network protocol, ensuring both data security and transmission efficiency. Client and server software can run on the same computer as well as on different computers in the same LAN, enabling the operator to manage the conference more flexibly.

System software imports the hot-spare dual server structure by using a main server and a back-up server.

While the main server is processing, data are stored real time on the back-up server to prevent conference related information from loss in case of a crash of the main server. As a result, security and reliability of the conference system are improved vitally.

- **Duplicate and backup connection via "Closed Loop - Daisy Chain" connection**

For important meetings, especially those which consider connection reliability as their leading point, Large-Scale Voting System adopts advanced "Closed Loop - Daisy Chain" connection topology, connecting the last unit in the loop back to the congress main unit. Therefore, any congress unit in the loop has two connection paths to the congress main unit. As a result, breakdown or replacement of a congress unit and connection failure of a cable will not influence other congress units. As such the system features the advantages of a daisy chain connection system with its simpleness of cabling as well as the improvement of the system reliability through duplicate and backup connection functions. In Large-Scale Voting System, only the congress main unit supports "Closed Loop - Daisy Chain" connection topology, and only one ring connection allows.

- **Advanced TCP/IP communication protocol in PC control**

In a PC controlled system, the congress main unit and the PC use the advanced TCP/IP protocol. Theoretically, the communication distance between the PC and the CMU can be infinite. This is decisively different to traditional RS-232 connection modes where the distance between the PC and the CMU cannot exceed 15 meters. TCP/IP enables remote control, remote diagnosis and remote update.

By using network techniques, conference systems are linked tightly to the rapidly developing internet technology, computer science and communication technology. Users enjoy the convenience of the contemporary leading techniques, e.g. by using the compatible wireless LAN techniques (802.11) - such as PDAs - which can be used to control a conference system wirelessly. The import of network topology also makes the conference system merge with intelligent building networks.

● **CMU and EMU**

The congress main unit forms the core of the entire conference system. It provides power supply to all voting units and serves as key component to link system hardware to application software. One CMU has two (6P-DIN) trunk-line cable outlets, If more congress units are needed, additional extension main units (EMU) HCS-8300ME are required. Each EMU has four (6P-DIN) trunk-line cable outlets. Large-Scale Voting System maximum capacity: 4096 voting units.

● **Voting units**

Voting units are units used by participants to contribute to a conference and include: voting chairman units, voting delegate units. The voting unit has voting facility and graphic 256x32 LCD with back-lighting. Depending on the option, voting units can be divided into tabletop, flush-mounted. Each style consists of various products, which enriches significantly users' choices.

Low power consumption design is adopted for voting units, convenient for wiring and installation. All voting units of the voting system are supplied by the main unit's 6P-DIN interface. Since the power capacity of the 6P-DIN interface is limited, it must be ensured during installation that the added up values of a) the total power consumption of all congress units connected in each path and b) the power loss in extension cables do in no case exceed the maximum possible value delivered by each 6P-DIN interface. Otherwise the system will not work properly or automatic protection will be triggered (see 4.2 connection principles).

● **Application software**

Large-Scale Voting System application software is comprehensive, reliable and user-friendly. It is also an easy-care software system which helps the operator to manage the conference efficiently from the very beginning of a meeting until the post-meeting work. Once the PC installed and the application software integrated into the Large-Scale Voting System, the operator manages centrally all aspects of the conference. The operation turns out to be easy and efficient.

The voting system application software is modular software with various functional modules: System Setup Management Module, Voting Management Module, Multi-user Conference Control Management

Module, Dual PC Server Hot Spare Module, Agenda Control Module, Dual System Main Unit Hot Spare Module, etc.

● **Installation and transportation**

Easy installation is another vital feature of Large-Scale Voting System. All voting units are equipped with a 1.5-meter-6P-DIN cable (with a male connector) and a 0.6-meter- 6P-DIN cable (with a female connector). All voting units are connected together in a daisy chain configuration and connected to the main unit by the dedicated extension cable.

1.3 Functions

● **Voting**

- Cooperating with corresponding software modules, multiform voting can be implemented:
  - ♦ For/Against
  - ♦ Parliamentary: YES/NO/ABSTAIN
  - ♦ Appraisal:

  Satisfied (three keys voting:

    satisfied/basically satisfied/unsatisfied)

    (two keys voting: satisfied, unsatisfied)

  Qualified (three/two keys voting)

  Competent (three/two keys voting)
- Multi-parliamentary voting that includes up to 15 items in a topic can be implemented by HCS-4368DME/FM/50.

● **Key-press sign-in**

● **Information display**

- By using the information display module of the application software, conference title, content, conference related information as well as meeting related notice can be displayed on a large screen display (or projector)
- Voting units equipped with graphic 256x32 LCD show :
  - ♦ Delegates' signed-in and voting results, etc.
  - ♦ Messages (messages from the system administrator to all or part of participants)
  - ♦ Multilingual (simplified/traditional Chinese and English, etc) menu

● **Video recording system**

Video record can be carried out if video switch unit and camera are installed.

● **Comprehensive conference management**

- The routine and trivial conference steps are handled in perfect order by the conference management software. Meanwhile various information is processed and published real-time.
- Powerful control functions for venue circumstances, conference procedure and delegate arrangement, etc.

● **Remote control and remote diagnosis**

Using advanced TCP/IP network protocol in the communication between the PC and the CMU - to implement remote control, remote diagnosis and remote update for the conference system - for easy central control of a multi-room configuration.

● **Multi-room configuration function**

Several main units can be operated as several independent conference systems or be combined together easily as a large multi-room conference system configuration.

● **Seamlessly Integrated with conference sign-in system and central control system**

The seamless integration of Large-Scale Voting System with the TAIDEN Conference Sign-in System and the intelligent central control system provides comprehensive conference system solutions. Besides the basic conference management, it also provides conference sign-in and access control for the conference participants. Furthermore, it gives complete facilities to manage the conference system's power supply and the peripheral multimedia equipment, surrounding lights, projector display and sound equipment. The easy incorporation of peripheral components upgrades the system into an advanced intelligent conference system with integrated solutions for conferencing, audio, lighting control etc.

● **Detection facilities**

- Built-in self-detecting functions in each voting unit for automatic detection of voting keys.

1.4 Features

- Global leadership in high-speed large-scale voting systems

- Bandwidth 100 Mbps, voting time for 1000 voting units less than 1 ms, display time less than 0.5s.

- **System reliability**

System reliability, as described below, has always been the guiding principle while designing Large-Scale Voting System:

- Voting system resistive to 12 kV static, excels IEC CISPR 24
- Waterproof facility of voting units, equipped with ferromagnetic cover to protect the unit from damage during the adjournment
- Specially designed application software for large-scale meetings, multiple operating error protection and debug mechanism
- Dual congress main unit hot spare
- System software imports the hot-spare dual server structure by operating the main server and the back-up server at the same time. While the main server is processing, data are stored real time on the back-up server to prevent conference related information from loss in case of a crash of the main server, thus improving security and reliability of the conference system remarkably.
- "Closed Loop - Daisy Chain" connection topology: breakdown or replacement of a voting unit and connection failure of a cable will not influence other voting units.
- Built-in communication auto termination function to prevent system collapse if the TCP/IP cable is pulled out
- Auto recovery function, supports PnP
- If PC malfunction happens, the CMU will return to control status automatically and take over control of the meeting, ensuring continuation of the meeting process
- Built-in detection facilities: detect the unit's LEDs and voting keys prior to start the meeting.

- **Technological progress**

Large-Scale Voting System - based on TAIDEN's proprietary development digital processing and transmitting technologies MCA-STREAM - adopts embedded hardware structure based on high performance dual CPUs. System software is based on Client/Server and hot-spare dual server structure. CMU and PC use advanced TCP/IP protocol for communication, perfectly integrated to benefit from modern technologies.

Furthermore, Conference Sign-in System and intelligent central control system can be integrated into TAIDEN Large-Scale Voting System to provide the first complete and efficient solution in the world.

- **System operability**

CMU controls efficiently without the intervention of an operator.

With a PC and system software, more functions can be achieved. Large-Scale Voting System can also be set up according to user requirements.

Large-Scale Voting System adopts Client/Server structure - the process of the meeting is controlled by the operator from any PC within the same LAN. If PC malfunction occurs, CMU will return to control status automatically and take over control of the meeting, ensuring continuation of the meeting.

- **Outstanding expandability**

Large-Scale Voting System supports a maximum of 4096 voting units.

The voting system is modular: just daisy-chain voting units to set-up a configuration. If extra system capacity is needed, units can be connected easily, starting from any access point.

● **Economical and convenient installation**

In virtue of the fully digital techniques of Large-Scale Voting System, system installation becomes simple and economical, especially in conjunction with the economical and durable system dedicated 6-PIN cable (substitutable by shielded Cat.5 cable). The cable is suitable for the requirements of any kind of meeting.

Every delegate unit is assigned an individual ID for convenient setup and perpetual prevention of double ID allocation.

System connection reliability is improved by the professional 6P-DIN standard plug and clasp which facilitates system installation as well as disassembly. As a result of the daisy-chain design of the contribution units, insertion into the system can be done at any desired point, simplifying significantly equipment extension and maintenance.

● **System maintenance**

TAIDEN system software provides testing functions for online testing the operating conditions such as validity of the keys and LCD.

A detailed test report is issued for quick and simple maintenance of the system device.

Chapter 2 Congress main unit (CMU)

The Congress main unit (CMU) forms the core of the Large-Scale Voting System, and provides power supply to all voting units, meanwhile, serving as the key component to link up hardware with application software. In stand-alone mode without a PC, the CMU only carries out basic management facilities; while more comprehensive management facilities can be implemented in PC-controlled mode.

The devices that can be controlled by CMU includes: voting units. By cascade connecting EMUs, the voting system can reach its maximum capacity: 4096 voting units.

Product types:

HCS-4100MC/50

fully digital standard congress system main unit

(with discussion - voting - 256x32 LCD)

2.1 Functions and indications

2.1.1 Front panel
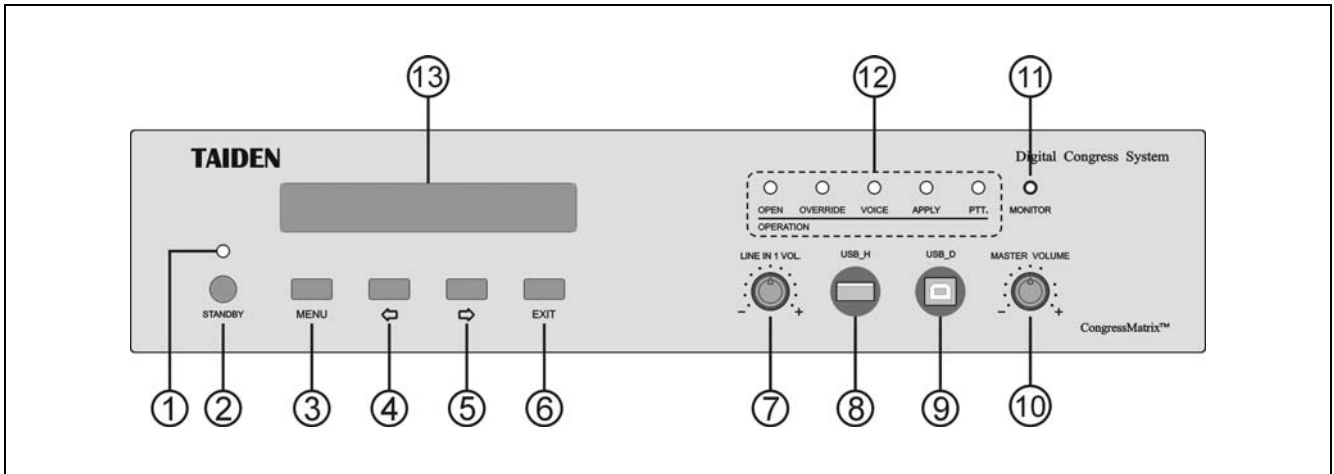
Figure 2.1　Front panel of HCS-4100MC/50 CMU

Figure 2.1

1. Power light

    a. Switches to red in standby mode;

    b. Switches to blue when operating.

2. "STANDBY" button

3. "MENU" button

    a. The LCD displays the <u>initial</u> user interface: press this button to enter the LCD <u>set-up</u> menu;

    b. The LCD displays the <u>set-up</u> user interface: press this button to select the highlighted item or enter the submenu;

    c. The LCD displays the <u>network</u> configuration: press this button to select/deselect the numeric value.

4. "⇦" (Left) button

    ▪ In standby state, press this button to display current input audio spectrum;

    ▪ In the set-up interface of the LCD menu, press this button to cursor to the left.

5. "⇨" (Right) button

    ▪ In standby state, press this button to select the number of maximum active microphones.

    ▪ In the set-up interface of the LCD menu, press this button to cursor to the right.

6. "EXIT" button

    ▪ In standby state, press this button to select the operation mode of the microphones.

    ▪ In the set-up interface of the LCD menu, press this button to exit current menu.

7. LINE IN 1 electric level adjustment knob

8. A type USB interface

    ▪ To plug-in a USB stick.

9. Mini USB interface

    ▪ For connecting to PC.

10. "MASTER VOLUME"

    ▪ Knob to adjust the master volume of the floor audio channel for the congress units

11. Monitoring earphone interface

    ▪ Earphone jack (Ø 3.5 mm).

12. Microphone operation mode indicator ("OPEN"/ "OVERRIDE"/ "VOICE"/ "APPLY"/ "PTT")

    ▪ Corresponding indicator lights up according to selected mode.

13. Menu display

    ▪ 256×32 LCD displays main unit status and configuration menu.
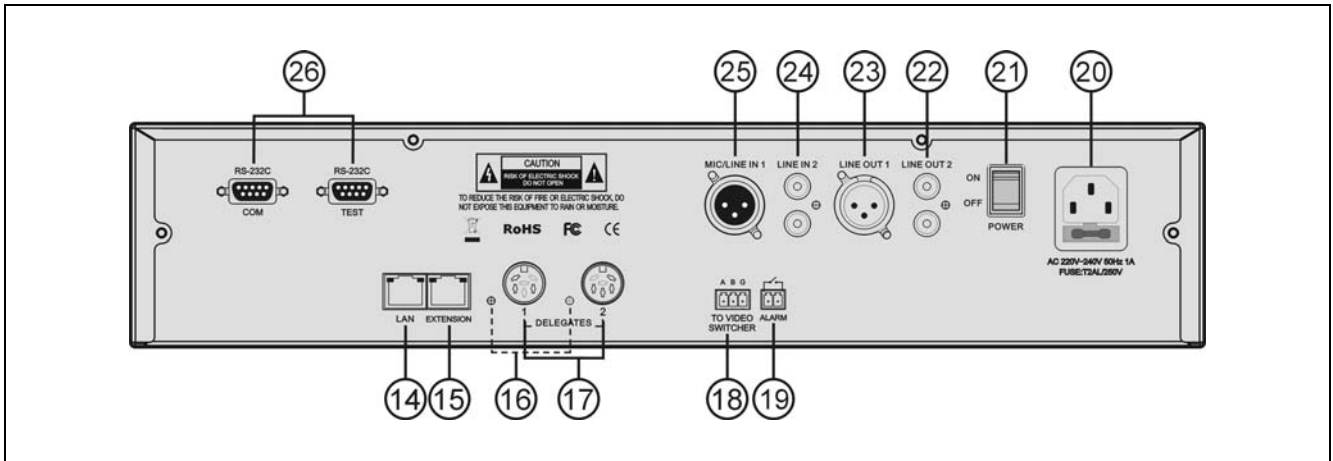
Figure 2.2   Backside of HCS-4100MC/50 CMU

Figure 2.2

14. Ethernet interface (LAN)

- For communication between the conference main unit and the PC under TCP/IP protocol to realize remote controlling; furthermore, it enables remote controlling by wireless touch panel through central control system.

15. Extension interface

- To connect CMU to EMU and interconnect with audio input interface and audio output device; devices cascadable.

16. Contribution units ring connection LED

- When output works properly (≥ 1 contribution unit connected), LED will flash;
- When no contribution unit is connected, LED is off.

17. Contribution units output interface (1-2, two routes)

18. Video switch interface

- When cooperating with video switch and dome camera, video recording can be realized.

19. Fire alarm linked trigger interface

- **+5 V voltage application :** all conference units will be switched off and display "ALARM";
- **No voltage input or too low voltage:** conference units will return to the status preceding "ALARM".

20. Power supply

21. Mains switch

22. "LINE OUT 2" (RCAx2 unbalanced output)

23. "LINE OUT 1" (3 cord XLR balanced output)

24. "LINE IN 2" (RCAx2 unbalanced input)

25. "LINE IN 1" (3 cord XLR balanced input)

26. RS-232C port x 2

- "COM" port is used for connecting to a central control system for central controlling, as well as for system diagnosis;
- "TEST" port is used for updating and monitoring.

2.2 Installation

The CMU can be fixed in a standard 19-inch cabinet. The CMU 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 CMU in the cabinet. Finally fix the four holes ③ up with screws.
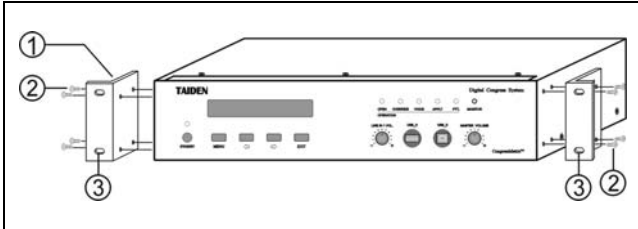
Figure 2.3　Installation of the CMU

In addition, 1U metal stripes are included as decoration to be installed between the CMUs in the cabinet. It is also good for the ventilation and cooling off. Fix up the four holes ③ with screws.
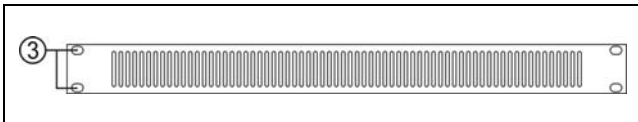
Figure 2.4　Decoration of cabinet

2.3 Connection

HCS-4100MC/50 has 2 outlet (6P-DIN) trunk-line cable sockets for connecting to voting units. Voting units are equipped with a cable with a standard 6P-DIN male connector.

When connecting the CMU to the voting units, just connect the male connector of the first unit to the socket of the CMU.

For a longer distance between the voting unit and the CMU/EMU, a CPL6PS extension cable can be used. One end of this cable is equipped with a 6P-DIN male connector; the opposite end is equipped with a female connector. Just connect the female connector of the cable to the voting unit, and connect the male connector to the output of the main unit.

Figure 2.5   Voting unit connected to the CMU or the EMU

For "daisy chain - closed loop" connection, just connect the last voting unit back to the CMU via a CBL6PP extension cable (both ends of this cable are equipped with a 6P-DIN male connector). In Large-Scale Voting System, the congress main unit can realize a "Closed Loop - Daisy Chain" connection, but only one – extension units do not offer this feature.
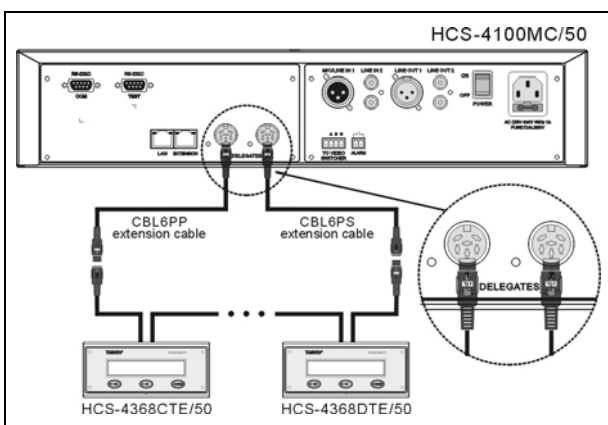
Figure 2.6   "Daisy chain – closed loop" connection topology

One HCS-4100MC/50 contains 2x 6P-DIN outlet trunk-line cable connectors, and each outlet connector can output 60W. Since the power capacity of a 6P-DIN interface is limited, it must be ensured that, during the installation, the sum of the total power consumption of all the congress units connected to every single 6P-DIN interface plus the power loss in the extension cables does not surpass the power limit of each 6P-DIN interface. Otherwise the system will not work properly or automatic protection will occur (see 4.2 connection principles).

2.4 Configuration and operation

After installation and connection and prior to the meeting, the CMU should be configured through the dialog menu and button. The term "interface" used hereinafter means the information displayed on the LCD as the "user" interface.

The menu structure is shown in the following figure:
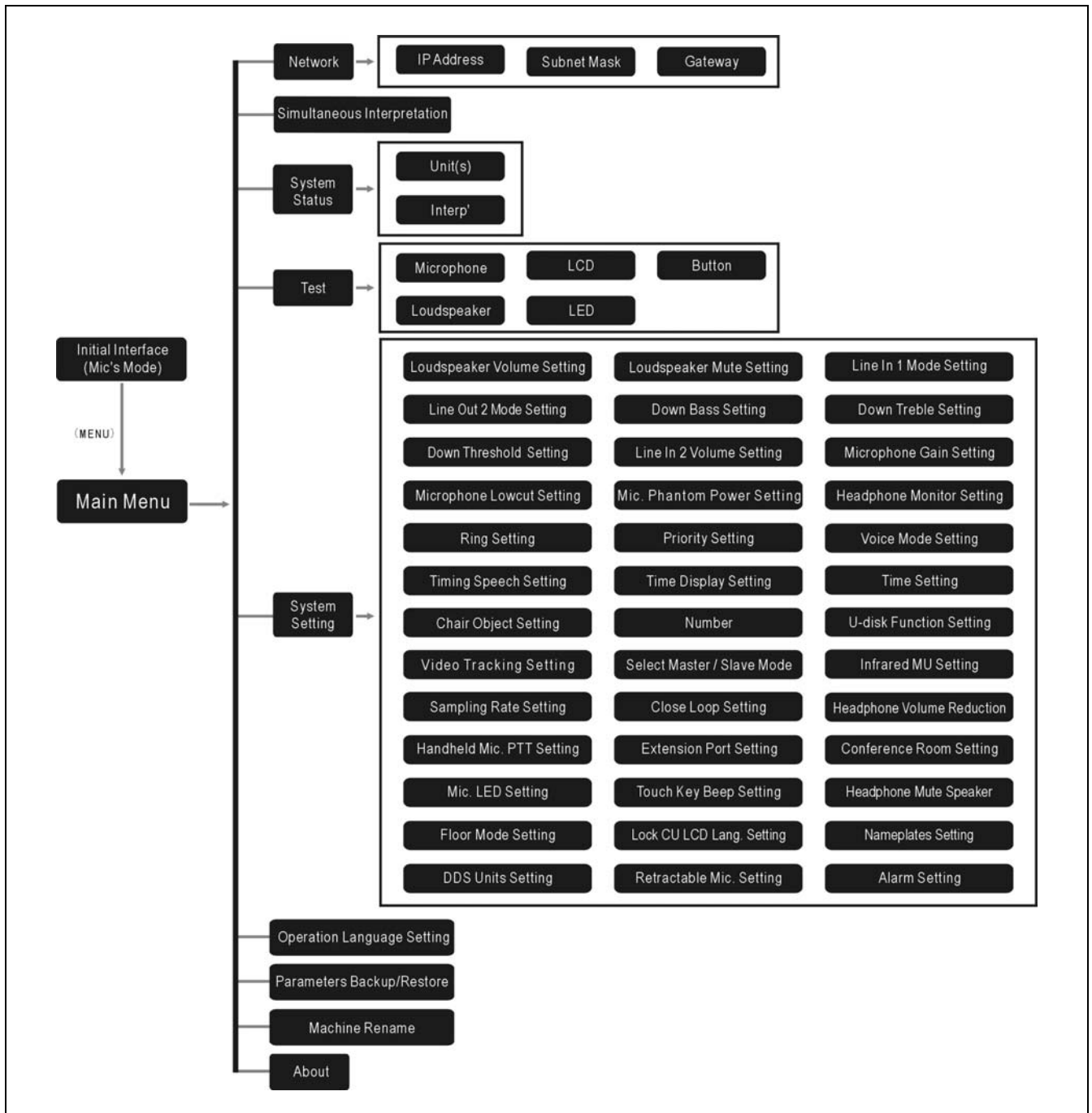
Figure 2.7   LCD menu structure of the congress main unit

A) Starting initialization

Switch on and press the "STANDBY" button, HCS-4100MC/50 CMU will start initialization:
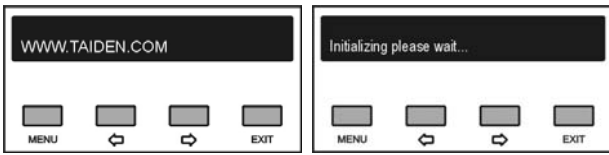
B) Initial interface on LCD

When the initialization is finished, the initial interface will be displayed on the LCD:

   "Menu"
   "Mic's"
   "Mode"
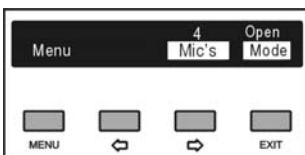
Select and press the corresponding button below the item and go to the next operation:

- ♦ Press the "Menu" button to return to the main menu;
- ♦ Press the "⇨" button to select the maximal number of microphones that can be turned on at the same time: 1, 2, 3 or 4;
- ♦ Press the "EXIT" button to select the microphone mode "OPEN", "OVERRIDE", "VOICE", "APPLY" or "PTT".

"Open":

If the maximal number of active microphones, previously fixed, has been reached, delegates requesting to speak join a request-to-speak list with a capacity of 6. The first unit joining the list will become active when the first active unit gets off.

"Override":

If the maximal number of active microphones has been reached and if another discussion unit is activated, the delegate unit switched on first will be switched off first automatically (first in / first out); If the maximal number of active microphones has been reached (includes Chairman/VIP units), when another discussion units is activated, the delegate unit switched on first will be switched off first automatically.

"Voice":

The delegates' microphone is activated when spoken into. After 300 or 600 milliseconds or 1-15 seconds (adjustable) without speaking, the microphone switches off automatically.

"Apply":

When the delegate presses his/her microphone ON/OFF button to request to speak, the chairman unit can approve or reject his/her request.

"PTT" (push-to-talk):

When the delegate presses and holds the microphone ON/OFF button, the microphone will be activated; when the ON/OFF button is released, the microphone will be deactivated.

C) Access main menu

Pressing the "Menu" button under initial user interface will go to the main menu, which includes eight menu items:

   "Network"
   "Simultaneous Interpretation"
   "System Status"
   "Test"
   "System Setting"
   "Operation Language Setting"
   "System Parameters Backup/Restore"
   "Machine Rename"
   "About"
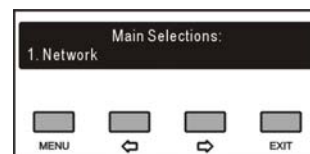
The current chosen term (e.g. "Network") is highlighted.

- ♦ Press the "MENU" button to go to the corresponding submenu;
- ♦ Use the "⇦/⇨" button to switch from term to term;
- ♦ Use the "EXIT" button to exit current menu and return to the upper level menu.

2.4.1 Network

"Network" includes three submenus:

"IP Address"

"Subnet Mask"

"Gateway"
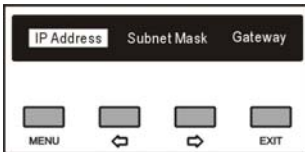
a). Setting up unique "IP Address" for the transmitter:

1). Select "IP address" and press the "Menu" button to go to setup IP address interface:
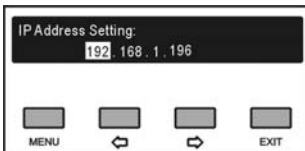
2). Use the "⇦/⇨" button to switch between the four numbers;

3). Use the "MENU" button to edit selected number;

4). Use the "⇦/⇨" button to decrease/increase the number. To change the number quickly (= auto repeat) press and hold the "⇦/⇨" button for a longer time

5). Use the "EXIT" to return to high level menu.

b). Setup "Subnet Mask" and "Gateway"

Same chronological order as for "IP address" set up.

> **Note:**
> ☞ When controlled by PC software, "Subnet Mask" and "Gateway" should be setup according to the PC configuration; otherwise it may cause a connection problem.
> ☞ In menu operation, except for "Network" and "Timing speech", all other menu changes should be saved via pressing the "MENU" button, pressing the "EXIT" button will ignore the changes.

2.4.2 Simultaneous interpretation

The HCS-4100MC/50 fully digital congress system main unit does not have the simultaneous interpretation function. So the setup interface is inaccessible.

2.4.3 System status

"System status" submenu includes:

"Unit status"

"Interpretation status"
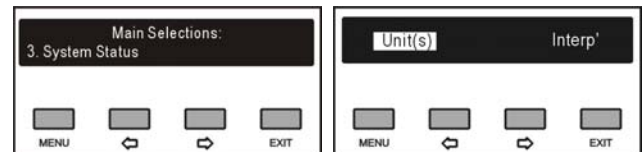
■ **"Unit status"**

When entering this submenu, a table consisting of the total number, active number, and request-to-speak number of microphones is shown as in the following figure.

■ **"Interpretation status"**

The HCS-4100MC/50 fully digital congress system main unit does not have the simultaneous interpretation function.

2.4.4 Test (cannot work under "VOICE" and "PTT" mode)

"Testing" submenu includes:

"Microphone"

"LCD"

"Button"

"Loudspeaker"

"LED"
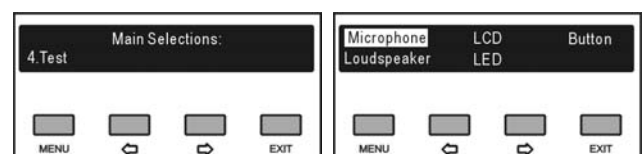
1. "Microphone"

Testing microphones before the meeting. This interface is inaccessible if no unit is connected.
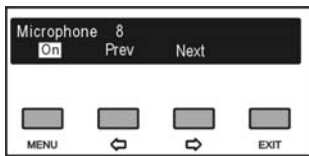
a). The "⇦/⇨" button is used to run trough all connected contribution units;

b). The "MENU" button is used to switch the unit ON/OFF to check if it can be turned ON/OFF normally or not;

c). After finishing the run, quit the interface by pressing the "⇨" or the "EXIT" button.

2. "LCD"

a). Press the "⇦/⇨" button to select "LCD" and press the "MENU" button to enter LCD test interface. Column scan will be executed immediately to scan the first column, shown as in the following figure:
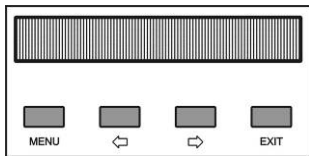
b). When the first time column scan is finished, press any button to start the second time column scan;

c). When the second time column scan is finished, press any button to start the first time line scan, shown as in the following figure;
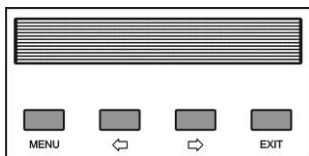
d). When the first time line scan is finished, press any button to start the second time line scan;

e). When the second time line scan is finished, press any button to start the full screen scan;

f). When the full screen scan is finished, press any button to return to the upper menu.

3. "Key"

Testing buttons before meeting, especially when voting function is present.

a). Press the "⇦/⇨" button to select "Button" and press the "MENU" button to enter button test interface. All connected contribution units will go to button test status;

b). The button LEDs of all contribution units will blink and all the contribution units with LCD will prompt a hint, press all buttons in turn and test them;

c). When all keys are tested, the LCD on contribution unit will display keys test result, as the following figure:
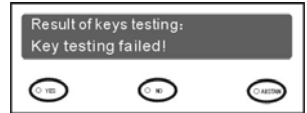
d). When all keys test is finished, press the "EXIT" button to return to upper menu.
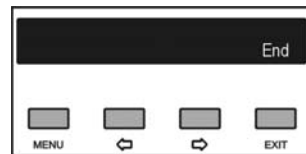
4. "Loudspeaker"

Press the "⇦/⇨" button to select "Loudspeaker" and press the "MENU" button to enter loudspeaker test interface. If no discussion unit is connected, this interface is inaccessible.

5. "LED"

Press the "⇦/⇨" button to select "LED" and press the "MENU" button to enter LED test interface, shown as the figure following. The LEDs on all connected contribution units will blink immediately.
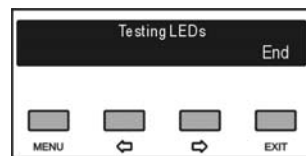
Press the "EXIT" button to exit LED test interface.

2.4.5 System setting

"Setting" submenu includes:

1. Loudspeaker Volume	2. Loudspeaker Mute
3. Line in 1 Mode Setting	4. Line Out 2 Mode Setting
5. Down Bass Setting	6. Down Treble Setting
7. Down Threshold Setting	8. Line in 2 Volume
9. Microphone Gain Setting	10. Microphone Lowcut
11. Mic. Phantom Power	12. Headphone Monitor Setting
13. Ring Setting	14. Priority Setting
15. Voice Mode Setting	16. Timing Speech
17. Time Display	18. Time Setting
19. Chair Object Setting	20. Number
21. U-disk Function	22. Video Tracking
23. Select Master/Slave Mode	24. Infrared MU
25. Sampling Rate	26. Close Loop Setting
27. Headphone Volume Reduction	28. Handheld Mic. PTT Setting
29. Extension Port Setting	30. Conference Room Setting
31. Mic LED Setting	32. Touch Key Beep Setting
33. Headphone Mute Speaker	34. Floor Mode Setting
35. Lock CU LCD Lang. Setting	36. Nameplates Setting
37. DDS Units Setting	38. Retractable Mic. Setting
39. Alarm Setting	
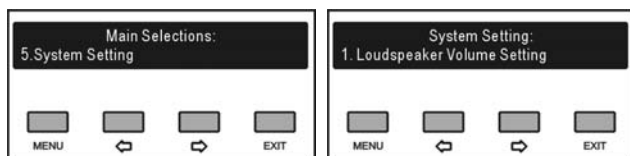
1. "Loudspeaker Volume Setting"

Adjust built-in loudspeaker volume of contribution units (except interpretation units), range: -30 dB - 0 dB.

a). Press the "⇦/⇨" button to adjust volume;

b). Press the "MENU" button to save and return to upper level menu.

2. "Loudspeaker Mute Setting"

Mute/Not mute loudspeaker of contribution units (except interpretation units).
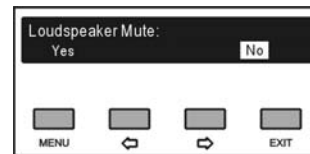
a). Press the "⇦/⇨" button to select mute or not;

b). Press the "MENU" button to save and return to upper level menu.

3. "LINE IN 1 Mode Setting"

Select LINE IN 1 mode from "Line input" or "Microphone Input".
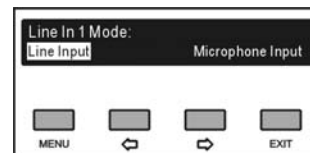
a). Press the "⇦/⇨" button to select "Line input" or "Microphone Input";

  ▪ Select "Line input" and press the "MENU" button to save and return to upper level menu;

  ▪ Select "Microphone Input" and press the "MENU" button will go to step b);
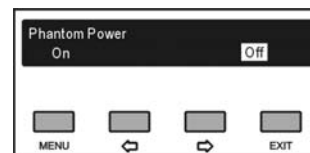
b). Press the "⇦/⇨" button to select phantom power on/off, phantom power is used for connecting condenser microphone;

c). Press the "MENU" button to save and return to upper level menu.

4. "Line Out 2 Mode Setting"

Set up Line Out 2 microphone output mode.
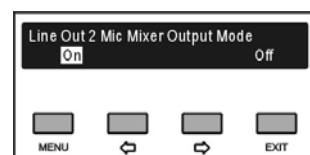
a). Press the "⇦/⇨" button to select "On" or "Off";

  ▪ Select "On" stands Line Out 2 will output mixed audio of microphone signals, Line In 1 signal and Line In 2 signal;

 ▪ Select "Off" stands Line Out 2 will output mixed

microphone signals only;

b). Press the "MENU" button to save and return to the upper level menu.

> **Note:**
> ☞ "Down" and "downlink" used in 5./6. and 7. indicate the signal transmission direction from the main unit to the congress units.
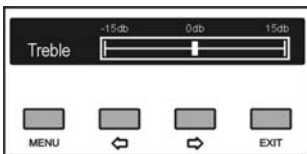
5. "Down Bass Setting"

Adjust downlink bass of contribution units (except interpretation units), range: -15dB - +15 dB.
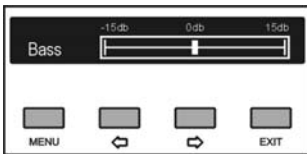
a). Press the "⇦/⇨" button to adjust;

b). Press the "MENU" button to save and return to upper level menu.

6. "Down Treble Setting"

Adjust downlink treble of contribution units (except interpretation units), range: -15dB - +15 dB.

a). Press the "⇦/⇨" button to adjust;

b). Press the "MENU" button to save and return to upper level menu.

7. "Down Threshold Level Setting"

Setup downlink audio threshold level to make sure that the sound issuing from the built-in loudspeaker and the headphone of each congress unit has no distortion.
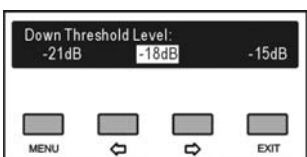
a). Press the "⇦/⇨" button to select threshold level between -21dB, -18dB and -15dB;

b). Press the "MENU" button to save and return to upper level menu.

8. "LINE IN 2 Volume Setting"

Adjust LINE IN 2 input volume, range: mute, -30 dB - 0 dB.
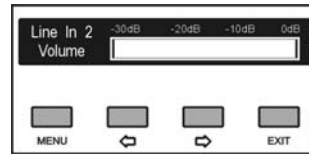
a). Press the "⇦/⇨" button to adjust volume;

b). Press the "MENU" button to save and return to upper level menu.

9. "Microphone Gain Setting"

"Microphone gain setting" includes two submenus:
"Set All Mics"
"Set Active"

1st step: power on all units

2nd step: switch on any microphone (only one at a time) as the first one and make a voice test. Keep the acoustic impression in mind. Switch off the mic. and switch on the next mic. and make the voice test again. Continue until the last mic. has been tested. If your final impression is that the sound level is not appropriate, increase or decreases the gain in "Set All Mics" in the CMU. Otherwise keep it unchanged.

♦ **"Set All Mics"**
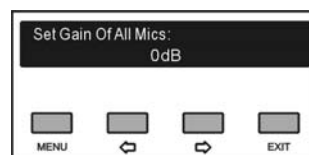
a). Press the "⇦/⇨" button to adjust the gain of all microphones (press and hold the "⇦/⇨" button will adjust numeric value quickly), range: -15 dB - 15 dB;

b). Press the "MENU" button to save and return to upper level menu.
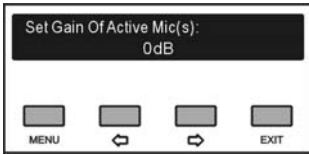
3rd step:
Now redo the test again as "Set All Mics" setting from step 2 does. Switch on any mic as the first and check the sound result again.

If it is ok, then switch off the mic and switch on the next mic.

If it is not ok then keep the mic switched on and got to "Set Active" setting in the CMU and increase or decrease the mic gain.

Continue with the next mic.

♦ **"Set Active"**

a). Press the "⇦/⇨" button to adjust the gain of all microphones (press and hold the "⇦/⇨" button will adjust numeric value quickly), range: -15 dB - 15 dB;

b). Press the "MENU" button to save and return to upper level menu.

10. "Microphone Lowcut Setting"

Select activating high-pass filter (low-cut switch) to cut low frequency elements from the microphone audio or not.

a). Press the "⇦/⇨" button to select "Set All Mics" or "Set Active";

b). Press the "MENU" button to go to the next step;
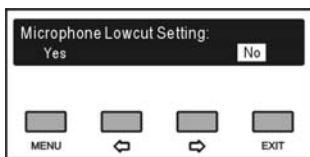
c). Press the "⇦/⇨" button to select "Yes" or "No";

d). Press the "MENU" button to save and return to the upper level menu.

11. "Microphone Power Setting"

There are two menu items for phantom power setting of handheld microphone interface on Multi-function Connector HCS-4340A/50P. This submenu is inaccessible if no phantom unit is connected.

"Set All Mics"

"Single"
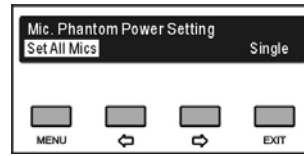
a). Press the "⇦/⇨" button to select "Set All Mics" or "Single";

b). Press the "MENU" button to go to the next step:

■ **"Set All Mics"**
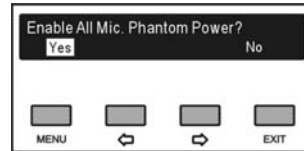
a). Press the "⇦/⇨" button to select phantom power on/off for condenser microphone;

b). Press the "MENU" button to save and return to the upper level menu.

■ **"Single"**
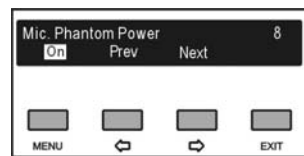
a). Press the "⇦/⇨" button to traverse all connected HCS-4340A/50P;

b). Press the "MENU" button to select phantom power on/off;

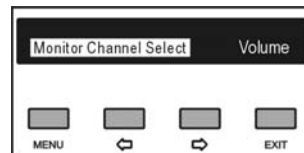c). Press the "EXIT" button to exit after setting.

12. "Headphone Monitor Setting"

The audio output can be monitored with a headphone at the monitor jack on the front panel of the CMU.

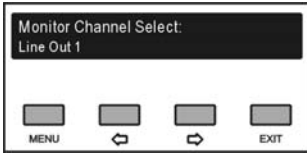"Headphone monitor setting" includes two submenus:

"Monitor Channel Select"

"Volume"

a). Press the "⇦/⇨" button to select "Monitor Channel Select" or "Volume";

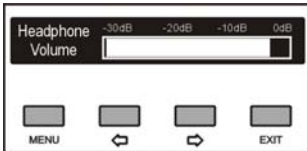b). Press the "MENU" button to go to next step;

■ **"Monitor Channel Select"**

Monitor Channel Select includes: line output 1-2.

Monitor Channel Select:
Line Out 1

MENU ⇦ ⇨ EXIT

a). Press the "⇦/⇨" button to select monitor channel;

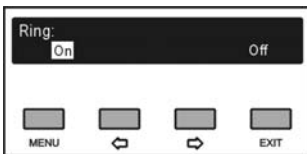b). Press the "MENU" button to save and return to upper level menu.

■ **"Volume"**

Adjust monitoring headphone volume, range: -30 dB - 0 dB.

Headphone   -30dB   -20dB   -10dB   0dB
Volume

MENU ⇦ ⇨ EXIT

c). Press the "⇦/⇨" button to adjust the volume (press and hold the "⇦/⇨" button will adjust numeric value quickly);

d). Press the "MENU" button to save and return to upper level menu.

13. **"Ring Setting"**

Select ring tone on/off when request to speak, chairman priority button pressed, speech timing or request to intercom.

Ring:
On   Off

MENU ⇦ ⇨ EXIT

a). Press the "⇦/⇨" button to select ring on/off;

b). Press the "MENU" button to save and return to upper level menu.

14. **"Priority Setting"**

Select enable/disable chairman priority button.

Enable Priority Key:
Yes   No

MENU ⇦ ⇨ EXIT
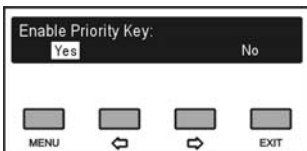
a). Press the "⇦/⇨" button to select enable/disable chairman priority button;

- If "**No**" is selected, press the "MENU" button to confirm and return to upper level menu;
- If "**Yes**" is selected, press the "MENU" button to confirm and go to step b);

Priority:
All Mute   All Off

MENU ⇦ ⇨ EXIT
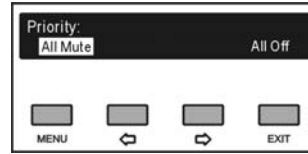
b). Press the "⇦/⇨" button to select priority mode between "All Mute" and "All Off";

- "**All Mute**": when chairman presses and holds "Priority" button, all active microphones will mute temporarily; when chairman releases "Priority" button, all temporarily muted microphones will resume.
- "**All Off**": when chairman presses "Priority" button, all active microphones will be deactivated.

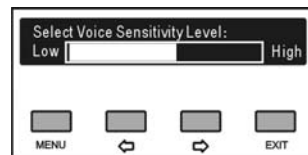c). Press the "MENU" button to save and return to upper level menu.

15. **"Voice Mode Setting"**

"Voice Mode Setting" includes two submenus:
"Voice Sensitivity"
"Auto Off Time"

Voice Sensitivity   Auto Off Time

MENU ⇦ ⇨ EXIT
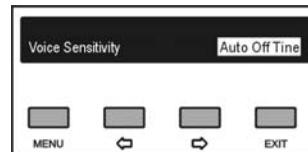
■ **"Voice Sensitivity"**

Set microphone sensitivity under voice mode. Higher sensitivity means a lower voice can activate the microphone.

Select Voice Sensitivity Level:
Low   High

MENU ⇦ ⇨ EXIT

a). Press the "⇦/⇨" button to set microphone sensitivity;

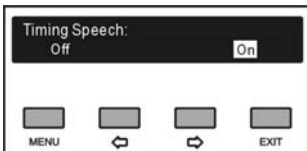b). Press the "MENU" button to save and return to upper level menu.

■ **"Auto Off Time"**

If the speaker does not speak for a certain time under "Voice" mode, the microphone will be deactivated automatically.


Set Auto Turn Off Time:
10 s

MENU ⇦ ⇨ EXIT
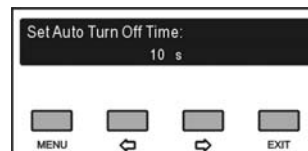
a). Press the "⇦/⇨" button to set auto turn off time (press and hold the "⇦/⇨" button will adjust numeric value quickly); range: 300 ms, 600 ms, 1s - 15 s.

b). Press the "MENU" button to save and return to upper level menu.

16. "Set Timing Speech"

Set timing speech, range: 1-240 minutes.

a). Press the "⇦/⇨" button to set timing speech on/off:
  - If "**Off**" is selected, press the "MENU" button to confirm and return to upper level menu;
  - If "**On**" is selected, press the "MENU" button to confirm and go to step b);

b). Press the "⇦/⇨" button to switch between "Speech time" and "Prompt time";
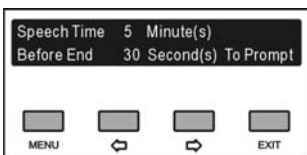
c). Press "MENU" to select "Speech time ...(minutes)" or "Before ...(s) to prompt"

d). Press the "⇦/⇨" button to set time (press and hold the "⇦/⇨" button will adjust numeric value quickly);

e). Press the "EXIT" button to save and return to upper level menu.
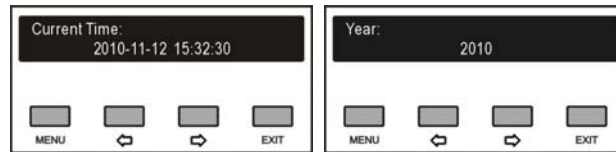
17. "Time Display Setting"

Display or do not display time on the LCDs of the contribution units.
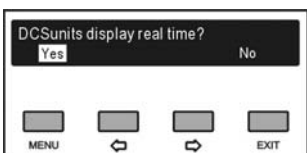
a). Press the "⇦/⇨" button to select "Yes" or "No";

b). Press the "MENU" button to save and return to upper level menu.

18. "Time Setting"

Set system clock.

a). Press the "MENU" button to go to "Year", "Month", "Day", "Hour", "Minute" in turn;

b). Press the "⇦/⇨" button to set time (press and hold the "⇦/⇨" button will adjust numeric value quickly);

c). Press the "MENU" button to save and return to upper level menu.

19. "Chair Object Setting"

Assigning the operator unit or a chairman/delegate unit with a LCD as the conference host. When an interpreter presses the "CALL" button on his/her interpretation unit, he/she sets up intercom with the assigned conference host.
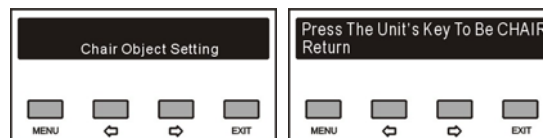
a). Press the "⇦/⇨" button to chair object setting, and to assign any chairman/delegate unit with a LCD as the conference host;

b). According to the hint on the LCD of the chairman/delegate unit, press "1" button on this unit, to assign it as the conference host;

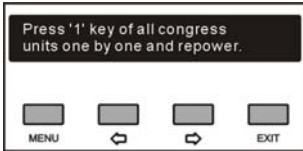c). Press the "MENU" button to save and return to upper level menu.

20. "Number"

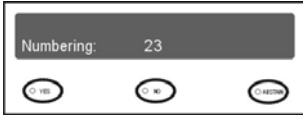Numbering for DCS Units and Interpreter units.
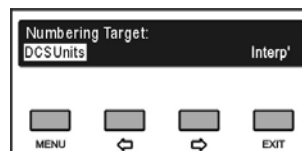
♦ **DCS Units**

a). Enter "DCS Units", the LCD on the CMU will display "Press '1' button of congress units one by one and repower".

At this instant, all contribution units with a LCD will prompt the number on their LCD; contribution units without LCD will activate the corresponding LED.


b). Press "1" button on all contribution units one by one to number them;

c). When all contribution units are numbered, restart the CMU to update the number.

> **Note:**
> ☞ To update the number the CMU <u>must</u> be restarted after the numbering;
> ☞ HCS-4100/50 system has an auto-numbering function. "Number" function is used to allocate an ID to each contribution unit manually. This is used for some applications which need to know the exact ID of each contribution unit, for example controlling the contribution units by the WiFi touch panel of the central control system.

♦ **Interpreter Units**

a). Enter "Interp'", all the interpreter units enter numbering status, and the 'B' indicator light was turned on, the LCD of the main unit is shown as following:
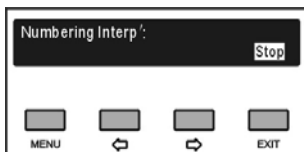
b). Turn the primary knob to select a number (1-6), and press the 'B' button to confirm;

c). Press the "EXIT" button to stop numbering and return to up level menu.

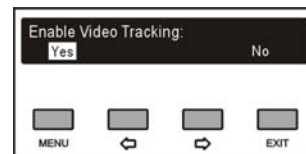## 21. "U-disk Function Setting"

Enable/disable USD_D interface on the front panel of the CMU. If enabled, the CMU can be connected to the PC via the USB_D interface to backup/restore CMU information.
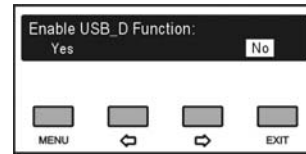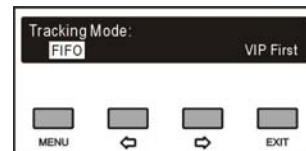

a). Press the "⇦/⇨" button to select "Yes" or "No";

b). Press the "MENU" button to save and return to upper level menu.

22. "Video Tracking Setting"

Enable/disable video tracking function.

a). Press the "⇦/⇨" button to select "Yes" or "No";
   ▪ If "**No**" is selected, press the "MENU" button to confirm and return to upper level menu.
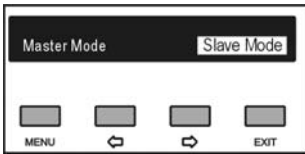   ▪ If "**Yes**" is selected, press the "MENU" button to go to step b);

b). Press the "⇦/⇨" button to select "FIFO" or "VIP First";
   ▪ "**FIFO**" is selected: when current video tracking microphone is deactivated, video camera will turn to last active microphone automatically;
   ▪ "**VIP First**" is selected: when current video tracking microphone is deactivated, video camera will turn to the first activated chairman unit or VIP unit.

c). Press the "MENU" button to save and return to upper level menu.

> **Note:**
> ☞ Video tracking function is unavailable if no discussion unit is connected.

23. "Select Master/Slave Mode"

If two CMU are installed in one system, they are set as "Master Mode" and "Slave Mode" separately.

a). Press the "⇦/⇨" button to select "Master" or "Slave":

  - If "**Master Mode**" is selected, press the "MENU" button to confirm and return to upper level menu;
  - If "**Slave Mode**" is selected, press the "MENU" button to confirm and go to step b);


b). Press the "⇦/⇨" button to select "Enable" or "Disable";

  - If **"Enable"** is selected, slave CMU will backup master CMU automatically during the meeting process. If master CMU stops, slave CMU will switch automatically to master mode and act as master CMU;
  - If **"Disable"** is selected, slave CMU will backup master CMU automatically in the meeting process. If master CMU stops, slave CMU will NOT switch to master mode;

c). Press the "MENU" button to save and return to upper level menu.

24. "Infrared MU Setting"
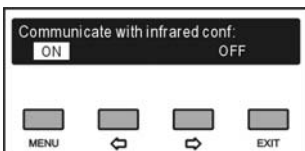
a). Press the "⇦/⇨" button to select "On" or "Off";

  - If "**Off**" is selected, press the "MENU" to save and return to upper level menu;
  - If "**On**" is selected, press the "MENU" button to go to step b);

b). Setup infrared MU IP address, the same as 2.4.1.
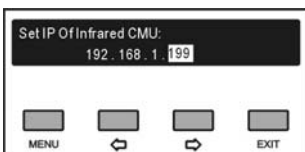

25. "Sampling Rate Setting"

Select sample rate between 32 kHz and 48 kHz. If "48 kHz" sampling frequency is selected, the system response frequency is 30 Hz - 20 kHz; if "32 kHz" sampling frequency is selected, the system response frequency is 30 Hz - 16k Hz.
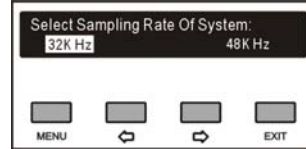
a). Press the "⇦/⇨" button to select "32 kHz" or "48 kHz";

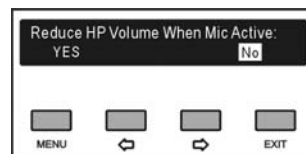b). Press the "MENU" to save and return to upper level menu.

26. "Close Loop Setting"

Enable/disable ring connection.
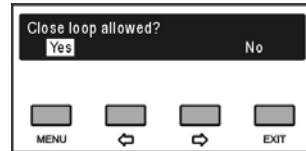
a). Press the "⇦/⇨" button to select "Yes" or "No";

  - If "**Yes**" is selected, all contribution units can be "daisy-chained" into a ring connection topology;
  - If "**No**" is selected, all contribution units can only be "daisy-chained";

b). Press the "MENU" button to save and return to upper level menu.

27. "Headphone Volume Reduction"

If a headphone is plugged howling may happen when the microphone is activated. "Headphone volume reduction" function is used to suppress howling. If enabled, the headphone audio signal will decrease automatically by 18 dB.

a). Press the "⇦/⇨" button to select "Yes" or "No";

b). Press the "MENU" button to save and return to upper level menu.

28. "Handheld Mic. PTT Setting"

Setup PTT mode for handheld microphone.
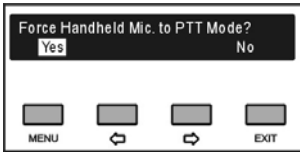
a). Press the "⇦/⇨" button to select "Yes" or "No";
  - If **"Yes"** is selected, force handheld microphone to PTT mode (inapplicable in "APPLY" mode);
  - If **"No"** is selected, handheld microphone works the same as the stem microphone;
b). Press the "MENU" button to save and return to upper level menu.
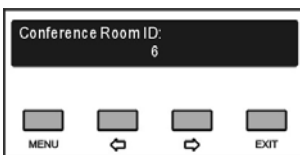
29. "Extension Port Setting"

Enable/disable extension port on the real panel of the CMU.
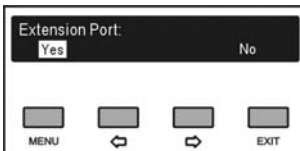
a). Press the "⇦/⇨" button to select "Yes" or "No";
b). Press the "MENU" button to save and return to the upper level menu.

30. "Conference Room Setting"

This function is used for conference room combination and interpreter booth sharing.

a). Press the "⇦/⇨" button to set conference room ID, the maximum number is 1000;
b). Press the "MENU" button to set conference room name, the maximum length is 16 characters;
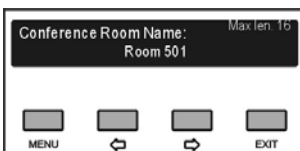
  - Press the "MENU" button to enter the name setting interface, the cursor blinks under the first character;
  - Press the "⇦/⇨" button to move the cursor;
 - Press the "MENU" button to modify the character;
  - Press the "⇦" button to clear all the characters after the cursor;
  - Press the "⇨" button to select the new character, the available characters are A~Z, a~z, 0~9, space, !, ", ^, *, _, +, =, -, (,), {, }, [,], <, >, :, ;, /, and ?;
  - Press the "MENU" button to save at each character;
c). After finished name setting, press the "EXIT" button to return, the LCD of the main unit will display "Need Restart To Be Effective";


d). Press any button to return to the main menu.

31. "Mic. Green LED Ring Setting"

Control the illuminated ring (green) of the stem microphone On/Off.
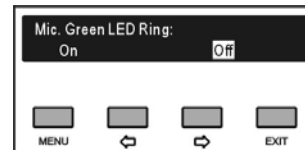
a). Press the "⇦/⇨" button to select "On" or "Off";
  - If "**On**" is selected, the green illuminated ring will indicate the applying status;
  - If "**Off**" is selected, the green illuminated ring gives no indication;
b). Press the "MENU" button to save and go to step c).
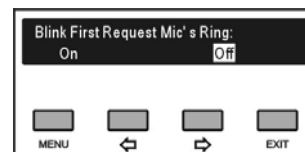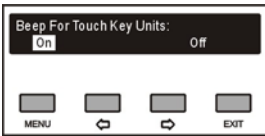

c). Press the "⇦/⇨" button to select "On" or "Off";
  - If "**On**" is selected, the green illuminated ring will blink when the unit is the first in the request list;
  - If "**Off**" is selected, the green illuminated ring will keep on;
d). Press the "MENU" button to save and return to the upper level menu.

Note:
  ☞ The step c) is available when the step a) selects "On".

32. "Touch Key Beep Setting"

Enable/disable touch key beep for HCS-4338/50 series congress unit. Please hear the beep through earphone.

a). Press the "⇦/⇨" button to select "On" or "Off";

b). Press the "MENU" button to save and return to the upper level menu.

33. "Headphone Mute Speaker Setting"

Set the work mode between loudspeaker and headphone.

a). Press the "⇦/⇨" button to select "Yes" or "No";

- If select "**Yes**", the loudspeaker was muted when plugged headphone;
- If select "**No**", the loudspeaker and the headphone can work at the same time, the headphone sends out the floor channel only and the headphone sends out the floor channel and SI channels;

b). Press the "MENU" button to save and return to the upper level menu.

> **Note:**
> ☞ For congress unit with two channel selectors, the loudspeaker was muted automatically when plugged two headphones even if select "**No**".

34. "Floor Mode Setting"
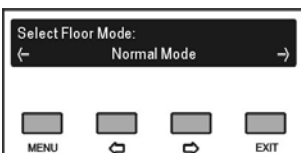
a). Press the "⇦/⇨" button to select floor mode;

- **Normal Mode:** the signal on LineIn1 and LineIn2 of the CMU are added to the floor signal, see figure 2.8;
- **Insert Mode:** the signal on LineIn2 of the CMU is used as floor signal, see figure 2.9.

LineIn2 of the CMU is used to add signal from external audio device; and you can connect an external audio mixer between LineIn2 and LineOut;

- **Sync. Line Out1 Mixer:** Adjust the audio parameters (Conference Management System - Setup - Audio Output Setup) of LineOut1 and the floor signal via Mixer 1 synchronously, see figure 2.10. This mode is used in the conference room without PA.

In the three modes above, if ambient microphone (used to pick up ambient sound in the congress room) is enabled via software (Conference Management System - Setup - Ambient Mic. Setup) and this microphone is active, its signal is added to the floor signal only. When any one microphone is activated, the ambient microphone will be turned off automatically.

b). Press the "MENU" button to save and return to the upper level menu.

35. "Lock CU LCD Language Setting"
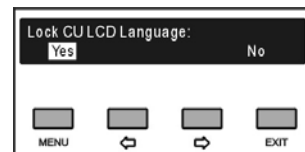
a). Press the "⇦/⇨" button to select "Yes" or "No";

- If select "**Yes**", operation language of congress unit, interpreter unit and operator unit cannot be changed;
- If select "**No**", operation language of congress unit, interpreter unit and operator unit can be changed;

b). Press the "MENU" button to save and return to the upper level menu.

36. "Nameplates Setting"

Select turn on the nameplate which is not assigned delegate unit or not.
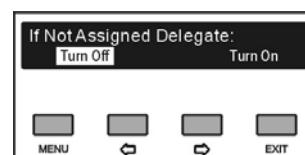
a). Press the "⇦/⇨" button to select "Turn Off" or "Turn On";

b). Press the "MENU" button to save and return to the

upper level menu.

37. DDS Units Setting

Set work mode for HCS-xxxxDDS:

a). Press the "⇦/⇨" button to select "Turn Off" or "Turn On";

· **Single ID:** one HCS-xxxxDDS owns one ID and dual predefined positions; two delegates may share one unit;

· **Double ID:** one HCS-xxxxDDS owns double IDs and each predefined position for each ID; two delegates may share one unit;

b). Press the "MENU" button to save and return to the upper level menu.

Note:

☞ Please restart the CMU to enable the DDS units setting.
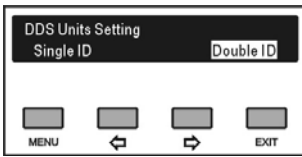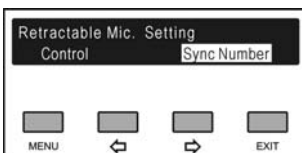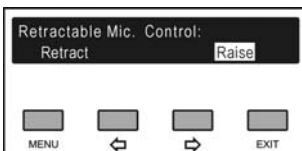
38. Retractable Mic. Setting

Control the array microphone of HCS-4851/50 series retractable microphone.

a). Press the "⇦/⇨" button to select "Control" or "Sync Number";

▪ If select "**Control**", use the "MENU" button to go to step b);

▪ If select "**Sync Number**", use the "MENU" button to go to step c);

b). Press the "⇦/⇨" button to select "Retract" or "Raise";
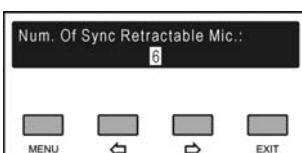
c). Press the "⇦/⇨" button to set sync number from 1 to 6;

d). Press the "MENU" button to confirm the operation and return to the upper level menu.

39. Alarm Setting

Enable the "ALARM" interface in the backside of HCS-8300M series congress unit.

a). Press the "⇦/⇨" button to select "On" or "Off";

▪ If select "**On**", when detect alarm signal, all congress units will be switched off and congress units with LCD screen will display "ALARM";

▪ If select "**Off**", there will be no response for alarm signal from the "ALARM" interface in the backside of HCS-8300M series congress unit;

b). Press the "MENU" button to confirm the operation and return to the upper level menu.

Figure 2.8   Floor mode setting - Normal Mode

Figure 2.9   Floor mode setting - Insert Mode

Figure 2.10   Floor mode setting - Sync. Line Out1 Mixer
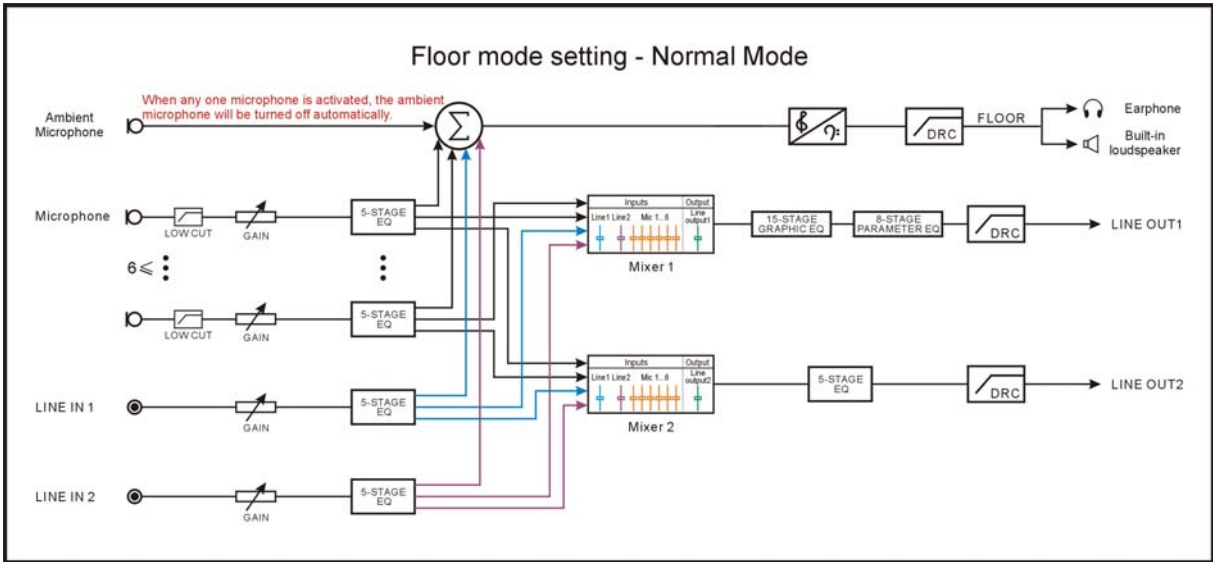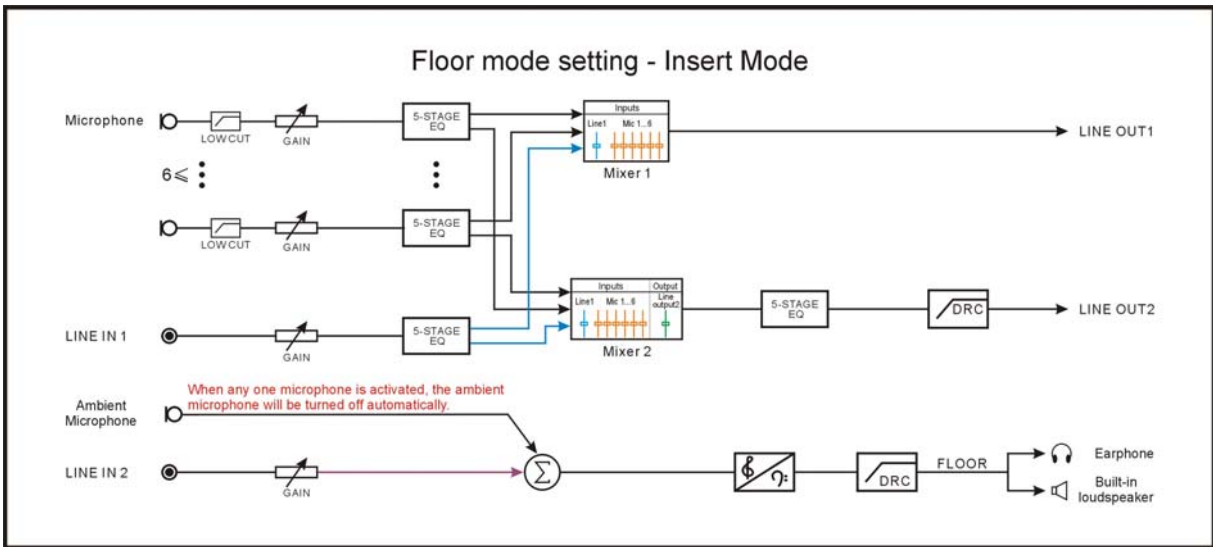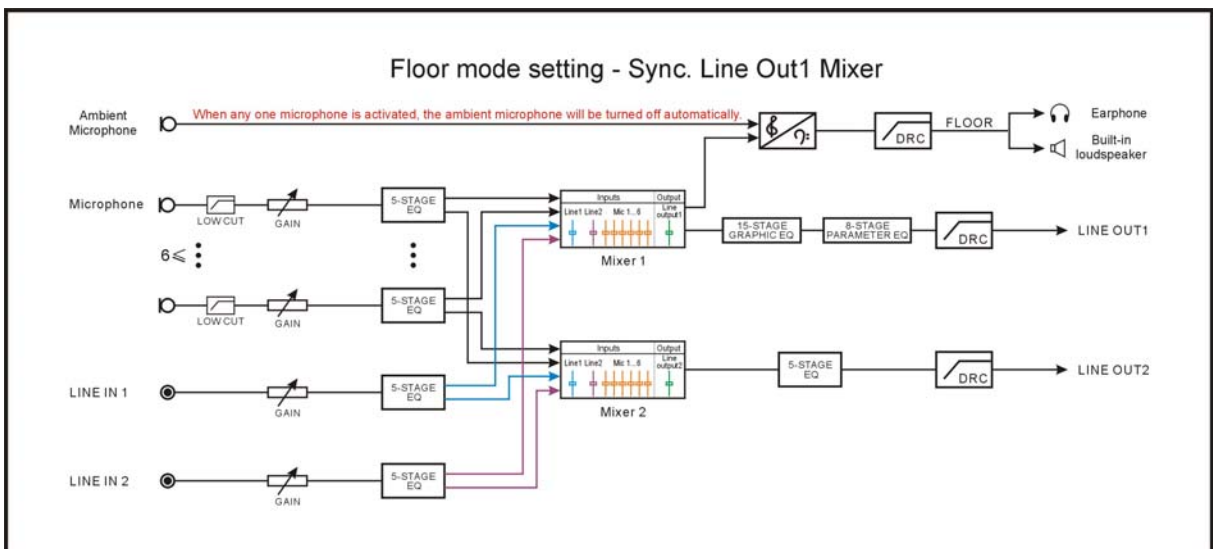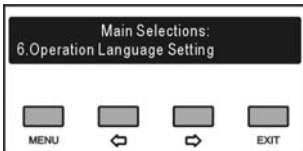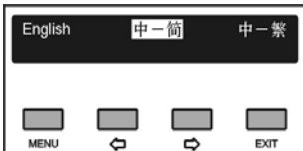
2.4.6 Operation language setting

Select LCD display language from simplified Chinese, Traditional Chinese and English. Other languages can be added by the user through software operation (refer to software operation instruction for details).

Select language:

a). Press the "⇦/⇨" button to select LCD display language;

b). Press the "MENU" button to save and return to upper level menu.

2.4.7 System parameter backup/restore

If USB feature is enabled, system parameters can be backed up or restored through the front panel USB port. Make sure that the USB disk is properly connected; otherwise it will prompt "Please insert the USB disk."

a). Press the "⇦/⇨" button to select "Backup" or "Restore";

　・ If **"Backup"** is selected, system parameters can be backed up;

　・ If **"Restore"** is selected, system parameters can be restored;
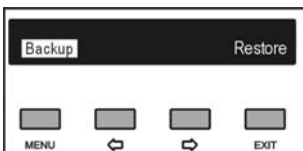
b). Press the "MENU" button to confirm and to go to selected menu item;

c). Return to upper level menu after backup or recovery.

2.4.8 Machine rename

Set alias for the HCS-4100M/50 with a maximum length of 16 characters or less. It is convenient to identify them on the operation of room combiner.
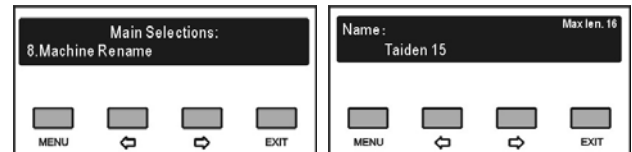
a). Press the "MENU" button to enter the name setting interface, the cursor blinks under the first character;

b). Press the "⇦/⇨" button to move the cursor;

c). Press the "MENU" button to modify the character;

　・ Press the "⇦" button to clear all the characters after the cursor;

　・ press the "⇨" button to select the new character;

d). Press the "MENU" button to save at each character;

e). Press the "EXIT" button to return to the upper level menu after setting finished.

2.4.9 About

CMU information includes: firmware version, corporation information and series number, shown as in the following figure - press any button to return to upper level menu.

2.4.10 Volume control

Volume can be adjusted by volume knob on the CMU front panel - LINE IN 1 VOL. adjust knob and MASTER VOLUME adjust knob. Meanwhile, the corresponding volume indicator will be displayed on the LCD, as shown in the following figure:
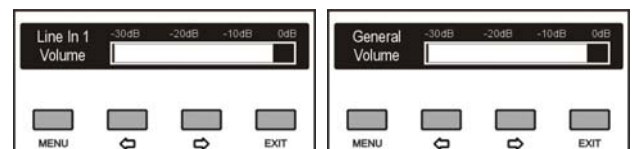
2.4.11 Power Management

Press and hold the "STANDBY" button to enter power management interface, as shown as the following figure:

a). Press the "⇦/⇨" button to select "Power Off" or "Setting";

* If "**Power Off**" is selected, the main unit switches to standby mode;
* If "**Setting**" is selected, then select enable the "STANDBY" button or not;

b). Press the "⇦/⇨" button to select "Disable" or "Enable";

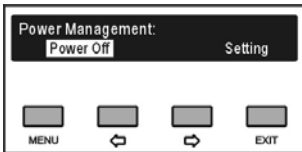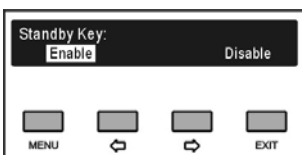* If "**Enable**" is selected, power on through the "POWER" switch and the "STANDBY" button;
* If "**Disable**" is selected, power on directly through the "POWER" switch;

c). Press the "MENU" button to save and return to the upper level menu.

> **Note:**
> ☞ When power down the main unit, please press and hold the "STANDBY" button to enter power management interface, then select **"Power Off"** and press the "MENU" button to confirm. Please do not use the switch button on the back of the main unit to shutdown directly; otherwise, it may lead to startup error.

2.4.12 Connecting to PC

When connecting the CMU to the PC, its front panel will be locked and setup operation cannot be accessed, as shown as the following figure:
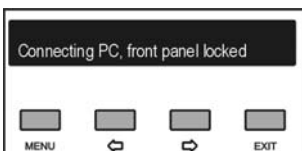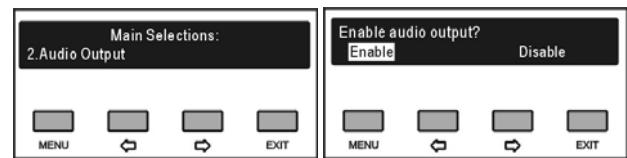
2.4.13 Configuration and operation - slave mode

When dual main unit hot spare or conference room combination occurs, the spare main unit or the main unit in the slave conference room works in slave mode. The LCD display shows as in the following figure in salve mode, press the "MENU" button to enter the menu settings.
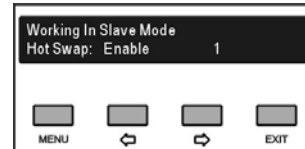
The menu includes:

1. **Select Master/Slave Mode:** the operation is the same as in master mode (section 2.4.5 – item 23);
2. **Audio Output:** enable/disable audio output on the rear panel of the CMU. In the conference room combination, must enable the audio output, if not, the delegates in the slave conference rooms cannot hear the voice in the master conference room;

3. **Operation Language Setting:** the operation is the same as in master mode (section 2.4.6);
4. **Parameters Backup/Restore:** the operation is the same as in master mode (section 2.4.7);
5. **Machine Rename:** the operation is the same as in master mode (section 2.4.8);
6. **Conference Room Setting:** the operation is the same as in master mode (section 2.4.5 – item 31);
7. **About:** the operation is the same as in master mode (section 2.4.9).

Chapter 3 Voting units

3.1 Overview

Voting unit is the common name to describe the units used by the attendees to contribute to a conference. Various features are available for the attendee, depending on the type of voting unit operated: key-press sign-in, voting, information display, etc.

Product type:

HCS-4368CT/50 fully digital voting system chairman unit

tabletop - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V - Chinese panel

HCS-4368CTE/50 fully digital voting system chairman unit

tabletop - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V - English panel

HCS-4368DT/50 fully digital voting system delegate unit

tabletop - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V - Chinese panel

HCS-4368DTE/50 fully digital voting system delegate unit

tabletop - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V - English panel

HCS-4368CT/FM/50 fully digital voting system chairman unit

flush-mounting - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V – cover - Chinese panel

HCS-4368CTE/FM/50 fully digital voting system chairman unit

flush-mounting - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V – cover - English panel

HCS-4368DT/FM/50 fully digital voting system delegate unit

flush-mounting - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V – cover - Chinese panel

HCS-4368DTE/FM/50 fully digital voting system delegate unit

flush-mounting - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V – cover - English panel

HCS-4368SDTE/FM/50 fully digital voting system delegate unit

flush-mounting - 3 voting keys - waterproof – antistatic 15000 V – cover - English panel

HCS-48U6DVOTTME fully digital voting system delegate unit

flush-mounting - 3 voting keys

HCS-4368DME/FM/50 fully digital voting system delegate unit

flush-mounting - multi-parliamentary voting - 3 voting keys - 256x32 LCD - waterproof – antistatic 15000 V – cover – English panel

HCS-4368CTE_R/50 HCS-4368DTE_R/50	HCS-4368CTE/FM_R/50 HCS-4368DTE/FM_R/50	HCS-4368DM/FM_Gd/50
HCS-48U6DVOTTME	HCS-4368SDTE/FM_R/50	cover

Figure 3.1   wired voting units

3.2 Functions and indications

Front panel of HCS-4368TE/50 series 3 keys voting unit

Front panel of HCS-4368DME/FM//50

Front panel of HCS-4368SDTE/50 3 keys voting unit

Front panel of HCS-48U6DVOTTME 3 keys voting unit

Side view of tabletop voting unit

Side view of flush-mounting voting unit
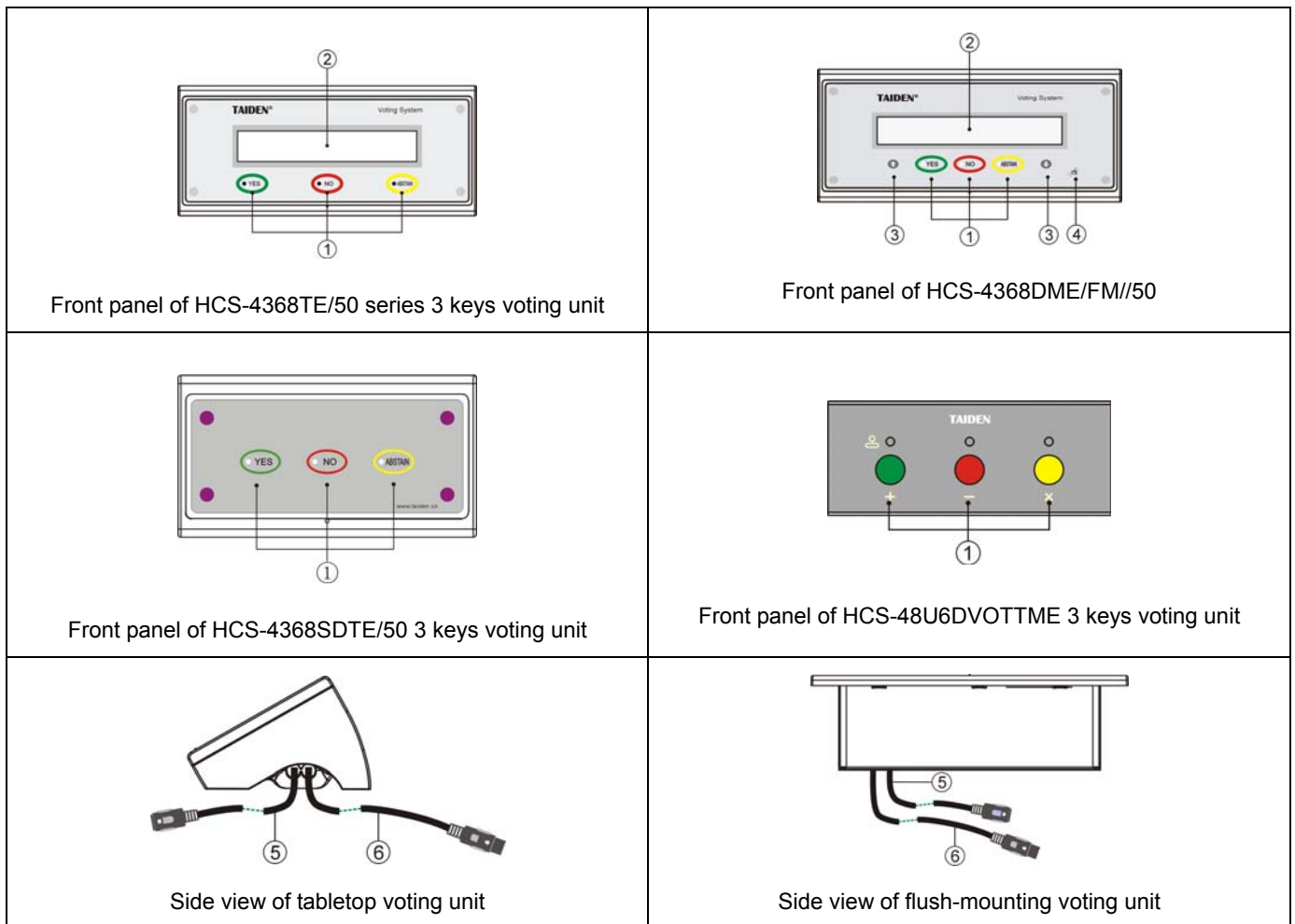
Figure 3.2   3 voting units

3.2.1 Front

1. 3 Voting keys and indicating lights

 ♦ In different modes, the corresponding indicating lights blink; press the corresponding key to execute operation (refer to table 3.1 for details).

 ♦ For this series delegate units with LCD, these five keys act as functional keys for menu operation (refer to section 3.5 for details).

2. High light 256 x 32 graphic LCD

 ♦ Can display menu and information in several languages (Simplified Chinese, Traditional Chinese, English, etc.)

3. "↑" "↓" button

 ♦ In multi-parliamentary voting, press this button to switch item page;

 ♦ These keys act as functional keys for menu operation (refer to section 3.5 for details).

4. Contactless IC-Card reader

3.2.2 Back

5. 0.6-meter 6P-DIN cable with standard plug (female x 1)

6. 1.5-meter 6P-DIN cable with standard plug (male x 1)

Table 3.1   List of multi functional voting keys

Function　　　　　　　　　　　　　Keys			Yes	No	Abstain
Numbering			Number		
Key-press sign-in			Sign-in		
Start/Stop			Start/Stop		
Voting	Parliamentary		YES	NO	ABSTAIN
	For/Against		YES	NO	
	Appraisal	Satisfied 3 Keys	Satisfied	Basically Satisfied	Unsatisfied
		Satisfied 2 Keys	Satisfied	Unsatisfied	
		Competent 3 Keys	Competent	Basically Competent	Incompetent
		Competent 2 Keys	Competent	Incompetent	
		Qualified 3 Keys	Qualified	Basically Qualified	Unqualified
		Qualified 2 Keys	Qualified	Unqualified	

*HCS-4368DME/FM/50 can press any key to number and sign-in, the indicating lights do not blink; and it does not support functions of Start/Stop and Appraisal.

3.3 Installation

3.3.1 Flush-mounting installation of voting unit

3.3.1.1 HCS-4368T/50 series voting unit

a. Cut a hole in the table according to the dimensions in figure 3.3;

b. Put the voting unit into the hole and drill four Ø 2 mm holes with 10 mm depth at P1, P2, P3 and P4;

c. Screw at P1, P2, P3 and P4.

Figure 3.3   Fixing hole positioning diagram of HCS-4368/50 series flush-mounting voting unit (unit: mm)

Figure 3.4   Dimension diagram of HCS-4368/50 series flush-mounting voting unit (unit: mm)

3.3.1.2 HCS-4368SDTE /50 voting unit

a. Cut a hole in the table according to the dimensions in figure 3.5;

b. Put the voting unit into the hole and drill four Ø 2 mm holes with 10 mm depth at P1, P2, P3 and P4;
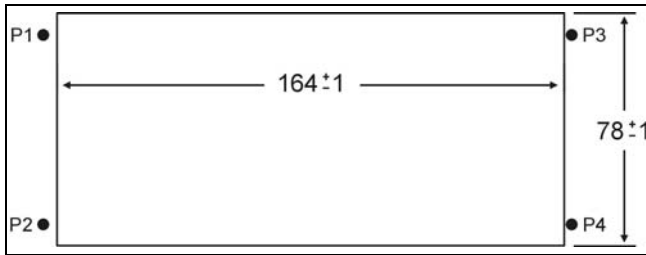
c. Screw at P1, P2, P3 and P4.

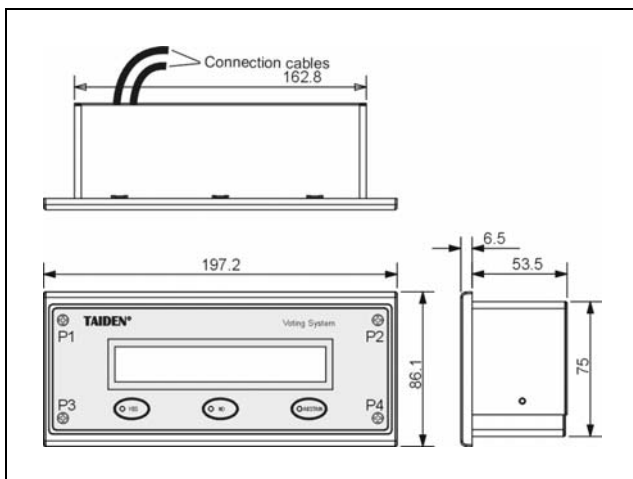Figure 3.5   Fixing hole positioning diagram of HCS-4368SDTE /50 series flush-mounting voting unit (unit: mm)
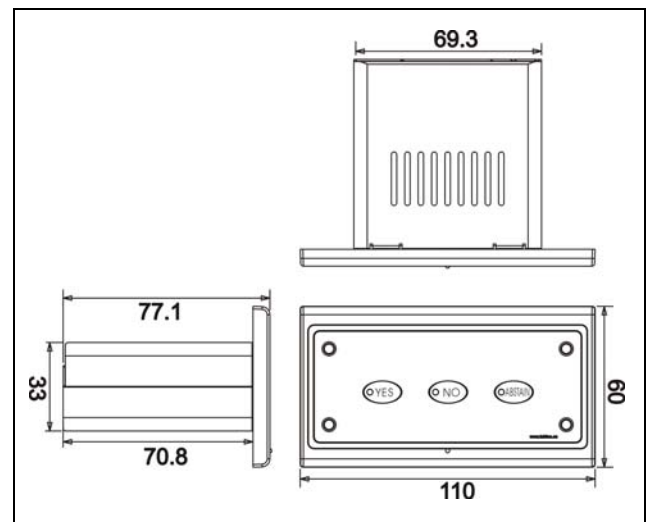
Figure 3.6   Dimension diagram of HCS-4368SDTE/50 series flush-mounting voting unit (unit: mm)

3.3.1.3 HCS-48U6VOTTM voting unit

a. Cut a hole in the table according to the dimensions in figure 3.7;

b. Fix the two iron plates by tapping screws;

c. Put and lock the voting unit into the frame.
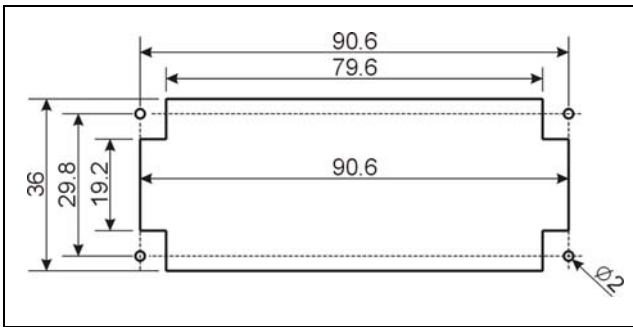
Figure 3.7　Fixing hole positioning diagram of HCS-48U6DVOTTME flush-mounting voting unit (unit: mm)
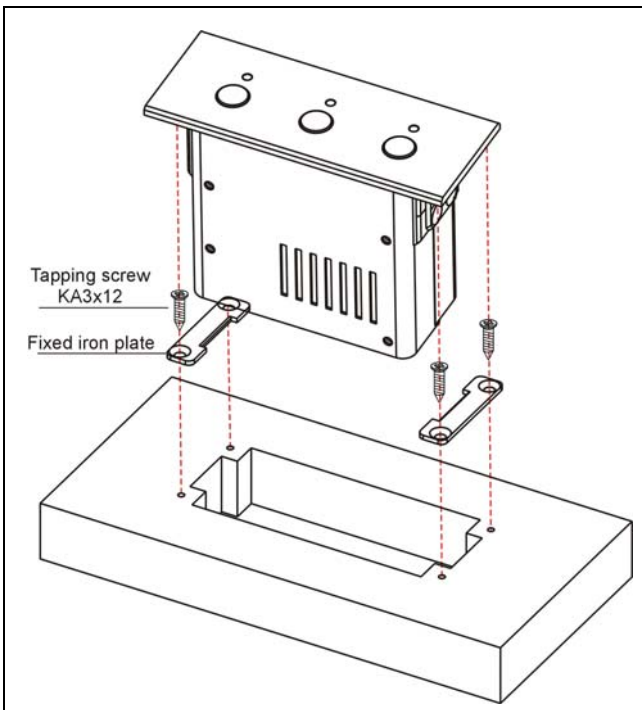
Figure 3.8　Installation of HCS-48U6DVOTTME flush-mounting voting unit (unit: mm)

3.3.1.4 HCS-4368DME/FM /50 voting unit

a. Cut a hole in the table according to the dimensions in figure 3.9;

b. Put the metal frame into the hole and drill two Ø 2 mm holes with 10 mm depth at P1 and P2, than screw the frame;

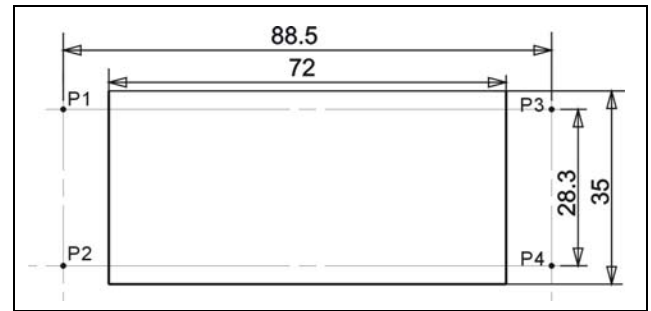c. Put the voting unit into the frame and fix it by four screws.
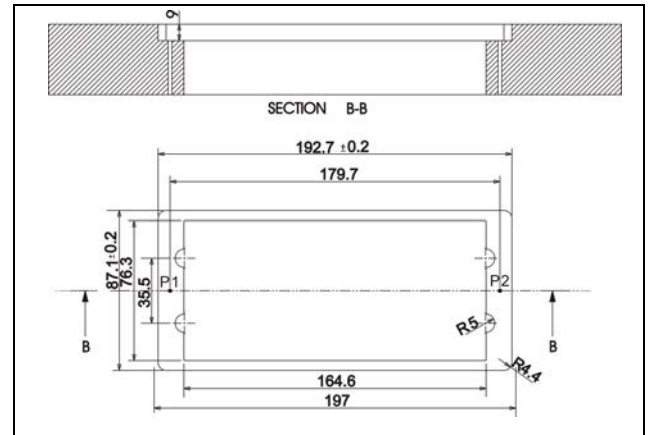
Figure 3.9　Fixing hole positioning diagram of HCS-4368DME/FM/50 series flush-mounting voting unit (unit: mm)
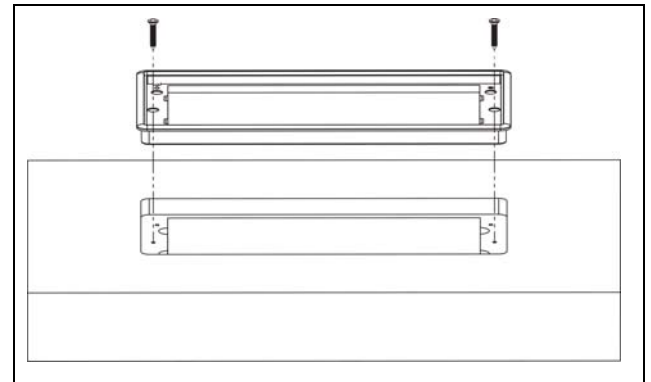
Figure 3.10　Fixing frame of HCS-4368DME/FM/50 series flush-mounting voting unit (unit: mm)
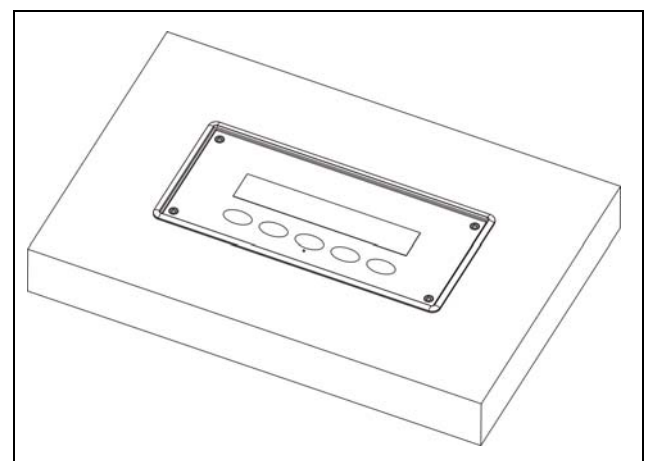
Figure 3.11　Fixing HCS-4368DME/FM/50 series flush-mounting voting unit (unit: mm)

3.3.2 Installation of the protective cover of HCS-4368/50 series flush-mounting voting unit

If not in use for a long time, just pull out the microphone and hook up the magnetic protective cover:
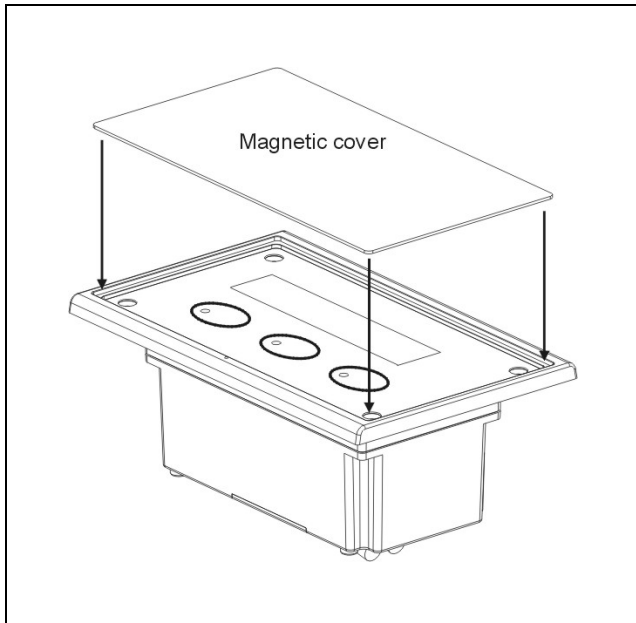
Figure 3.12   Installation diagram of the protective cover of HCS-4368/50 series flush-mounting voting unit

A vacuum cup is needed to dismount the protective cover. Seize the protective cover with the vacuum cup and pull it from the discussion unit.
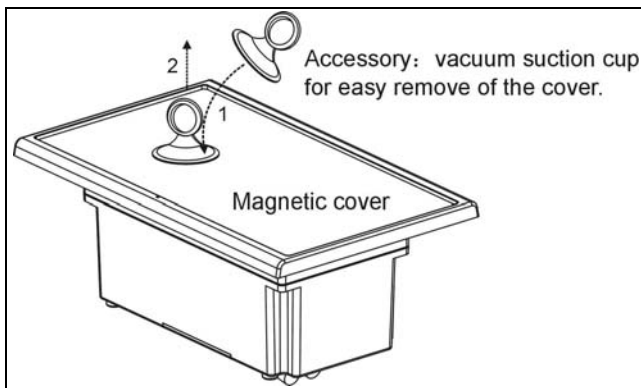
Figure 3.13   Dismounting the protective cover of HCS-4368/50 series flush-mounting voting unit

3.4 Connection between voting units

All voting units of Large-Scale Voting System are daisy-chained easily and conveniently by dedicated 6P-DIN cables.

When connecting to another voting unit, just connect the 6P-DIN standard female connector on the 0.6-meter cable of the unit to the 6P-DIN standard male connector on the 1.5-meter cable of the next unit.
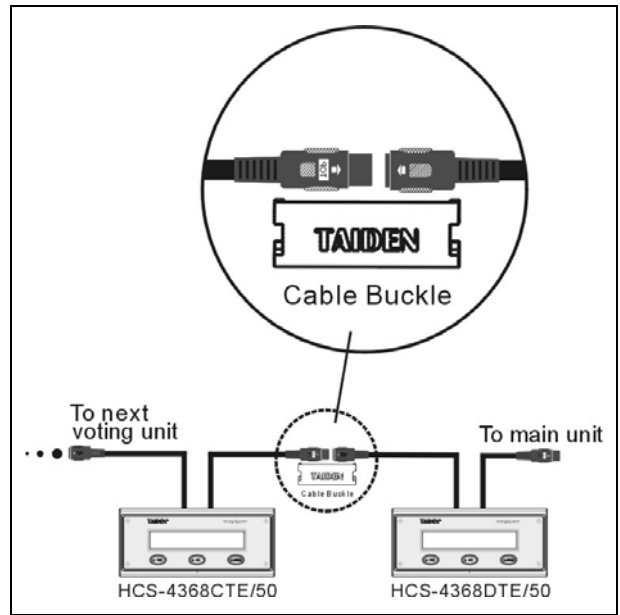
Figure 3.14   "Daisy-chain" connection between HCS-4368/50 series voting units

3.5 Operation

Before a meeting starts, the voting units must be configured by the operator, including: numbering and testing. During the meeting, the participators can use the voting unit to sign-in and to vote.

3.5.1 HCS-4368T/50 series

3.5.1.1. Delegate unit

We take HCS-4368DTE/50 as an example to introduce the operation of the HCS-4368/50 series voting units. The other voting units of this series feature one or more of these functions.

1. Number

First of all, make sure that all voting units are connected properly to the CMU. All voting units must be numbered when the system is used for the first time or when adding or replacing units. The numbering function can be activated by menu operation on the CMU front panel or by application software.

Select "Number" by menu operation from the CMU, press the "MENU" key to confirm, following the system goes to numbering status. *"Press '1' key of all congress units one by one and repower"* will be displayed on the CMU LCD. The number indicating light of all connected voting units will blink and the LCD will display "Numbering". Press the "YES" key of all voting units one by one. The number indicating light will be deactivated. Once all voting units numbered, restart the CMU to update the number information.

> **Note:**
> ☞ When numbering, please number the conference units one by one and do NOT press "number" key of several conference units at the same time.

2. Sign-in (application software needed)

To carry out voting, voting units should be registered via key press. With application software, registration is available by choosing "Seat Sign-in".

- **Key-press sign-in**

In key-press sign-in status, the indicating light on key "YES" will blink, press key "YES" to sign-in and the indicating light will be turned off.

3. Voting

Voting can be originated by application software.
- The voting button indicating lights of the voting unit start to blink, the delegate can press the voting button to vote;
- "Last key-press valid" voting, the delegate can change his/her vote. His/her last voted key will be valid.

4. LCD display

After initialization, the following interface will be displayed on the LCD:
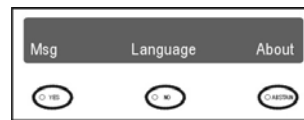
A. "Message" (key "YES")

- Use this key to read a message. When a PC is connected, the operator can edit and send a message to a voting unit(s).
- On receipt of a message, *"You have got a new message"* will be displayed on its LCD. Press key "ABSTAIN" to read corresponding message.
- At most 4 messages can be stored in the voting unit, In case of more incoming messages, the first received message will be overlapped.

B. "Language" (key "NO")
Select the LCD display language between several languages. The range is limited by the configuration in the CMU;
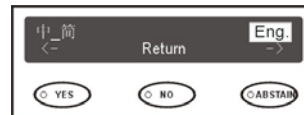
C. "About" (key "ABSTAIN")

Display product information.
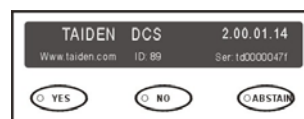
3.5.1.2. Chairman unit

The chairman unit features all the functions of a delegate unit, and the following additional functions:

Voting with PC:

- When controlled by application software, nominative or ballot voting are available;
- Last key-press valid;
- The voting can be controlled by application software. The voting operation of the chairman unit and the delegate unit are identical. In this mode, voting can also be controlled by the chairman unit. The "Start voting" will display on the chairman unit's LCD. Voting starts once the chairman pressed the "Yes" key.

- After voting of the chairman, The "End" will display on the chairman unit's LCD. The chairman presses "Yes" key to finish voting. The voting indicating light of all congress units will be deactivated.
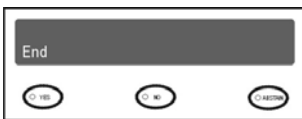
- After voting, the voting results and sign-in statistics will be displayed on the chairman unit's LCD:

3.5.2 HCS-4368SDT/FM/50, HCS-48U6DVOTTME

HCS-4368SDT/FM/50 and HCS-48U6DVOTTME are the 3 keys voting units, their operation are the same as HCS-4368DT/50 voting unit but not provided with LCD display.

3.5.3 HCS-4368DME/FM/50

1. Number

First of all, make sure that all voting units are connected properly to the CMU. All voting units must be numbered when the system is used for the first time or when adding or replacing voting units. The numbering function can be activated by menu operation on the CMU front panel or by application software.
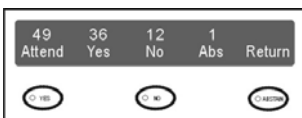
Select "Number" by menu operation from the CMU, press the "MENU" key to confirm, following the system goes to numbering status. *"Press '1' key of all congress units one by one and repower"* will be displayed on the CMU LCD. The number indicating light of all connected voting units will blink and the LCD will display "Numbering". Press the "YES" key of all voting units one by one. The number indicating light will be deactivated. Once all voting units numbered, restart the CMU to update the number information.

> **Note:**
> ☞ When numbering, please number the conference units one by one and do NOT press "number" key of several conference units at the same time.

2. Sign-in (application software needed)

To carry out voting, voting units should be registered via key press. With application software, registration is available by choosing "Seat Sign-in".

■ **Key-press sign-in**

In key-press sign-in status, "Press any key to sign-in" will be displayed on the LCD, please press any key to sign-in.
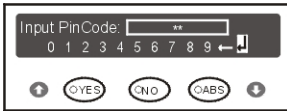

■ **IC-Card sign-in**

In IC-Card sign-in status, "Please Use IC Card" will be displayed on the LCD. Read the IC-Card correctly, a welcome interface will be displayed. Press any key to go to the initial interface.

■ PIN code sign-in

In PIN code sign-in status, "Input PinCode" will be displayed on the LCD. Input PIN code and select the "⏎" button to confirm. If the PIN code is correct, a welcome interface will be displayed. Press any key to go to the initial interface; if the PIN code is wrong, the PIN code sign-in interface displayed on the LCD again.
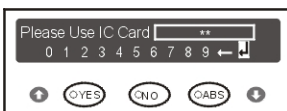

Icon:

♦ **0**,**1**,**2**,**3**,**4**,**5**,**6**,**7**,**8**,**9:** PIN code number;

♦ **⬅:** backspace;

♦ **⏎:** enter;

Key:

♦ "↑" key: move left;

♦ "No" key: move right;

♦ "↓" key: confirm button.

■ Seat IC-Card and PIN code sign-in

In seat IC-Card and PIN code sign-in status, "Please Use IC Card" and PIN code input interface will be displayed on the LCD. Either IC-Card sign-in or PIN code sign-in will work.

In the above sign-in mode (except key press sign-in mode), logout is available. It is used for locking the units in case the delegates leave for a short time. Delegate units will work on after delegates sign-in again (The DCS server cannot stop sign-in).

3. Voting

Voting can be originated by application software. Including single-parliamentary voting and multi-parliamentary voting.

A. single-parliamentary voting

▪ The voting button indicating lights of the voting unit start to blink, the delegate can press the voting button to vote;

▪ "Last key-press valid" voting, the delegate can change his/her vote. His/her last voted key will be valid.

B. Multi-parliamentary voting

▪ Only support Yes/No/Abstain voting;

▪ LCD displays the number of the items, the mode of voting and a prompt "start voting", press "↓" to enter the interface of item;
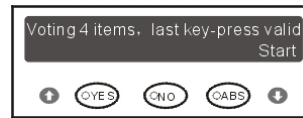
The voting button indicating lights of the voting unit start to blink, the delegate can press the voting button to vote. Every interface displays one item, it will automatically enter the interface of next item after voting an item, press "↑" or "↓" to switch the items. After voting the last item, press "↓" to enter the interface of voting status:
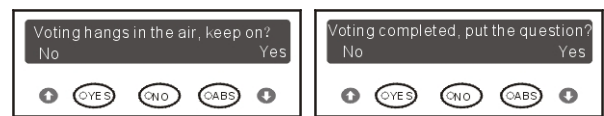
According the prompt to select "YES" (key "↓") or "NO" (key "↑").

▪ "Last key-press valid" voting, the delegate can change his/her vote. His/her last voted key will be valid.

4. LCD display

After initialization, the following interface will be displayed on the LCD:

A. "Message" (key "↑")

▪ Use this key to read a message. When a PC is connected, the operator can edit and send a message to a voting unit(s).

▪ On receipt of a message, *"You have got a new message"* will be displayed on its LCD. Press key "ABSTAIN" to read corresponding message.

▪ At most 4 messages can be stored in the voting unit, In case of more incoming messages, the first received message will be overlapped.

B. "Language" (key "No")

Select the LCD display language among several languages. The range is limited by the configuration in the CMU;

C. "About" (key "↓")

Display product information.

Chapter 4 System connection and basic setup procedure

4.1 Overview

The Large-Scale Voting System has a simple and reasonable structure with high extendibility in hardware. The system installation is simple and quick and does not need special training. Daisy-chain connection is adopted between voting units as well as to CMU via dedicated 6PIN cable.

TCP/IP protocol is adopted for Ethernet connection between the CMU and the PC. As a result remote control, remote diagno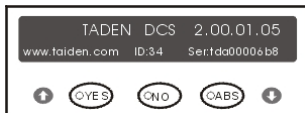sis and remote update can be achieved. Application software for client and server can run on one computer or on different computers in the same LAN. The operator is able to control the progress of the meeting flexibly.

In this chapter, the connections of the Large-Scale Voting System are introduced by diagrams and examples.

4.2 Connection principles

In the Large-Scale Voting System the power is provided by HCS-4100MC/50 CMU (or HCS-8300ME(/F) extension unit) for all voting units. Thus, the total number of system units in any installation is limited by the maximum power handling capacity and control capacity of the CMU (or EMU). One CMU contains 2x 6P-DIN outlet trunk-line cable connectors, and each outlet connector can output 60W. One extension main unit (EMU) contains 4x 6P-DIN outlet trunk-line cable connectors, and each outlet connector can output 80W. Since the power capacity of a 6P-DIN interface is limited, it must be ensured that, during the installation, the sum of the total power consumption of all the voting units connected to every single 6P-DIN interface <u>plus</u> the power loss in the extension cables does not surpass the power limit of each 6P-DIN interface. Otherwise the system will not work properly or automatic protection will occur.

Daisy-chain connection by dedicated 6 pin cable is effected to connect a congress main unit to an extension main unit or to interconnect two EMU. The Large-Scale Voting System can accommodate 4096 voting units (by using system application software up to 100 chairman units can be connected but only 1 chairman unit does have control facilities).

Note:
- ☞ The added up cable lengths between a main unit and the most remote congress unit must not exceed 250 m;
- ☞ The length of an individual extension cable must not exceed 80 meters. Otherwise it will affect the signal quality. In case the length exceeds 80 m, HCS-4352/50 is needed;
- ☞ The extension cable between the main unit and the first congress unit is carrying the maximum possible current. However, the cable length between the two last congress units is nearly insignificant because this cable only carries the current for one unit.

Table 4.1   Quick lookup table for the max. number of connected congress units

Type	Type No.	The extension cable length between the CMU(EMU) and the first Congress Unit connected to the socket					
		20 m	40 m	60 m	80 m	80 m + HCS-4352/50 +80 m	80 m + HCS-4352/50 + 80 m + HCS-4352/50 + 80 m
Equipped with 256×32 LCD, without speaker nor microphone	HCS-4368/50	30	26	24	22	15	10
Without 256×32 LCD, without speaker nor microphone	HCS-4368SDTE/50 HCS-48U6DVOTTME	30	29	26	24	19	14

  ***Note:** Cable Splitter HCS-4352/50 is needed when the length of an extension cable exceeds 80 m.

   (Cable splitter is used as repeater only and cannot improve load capability.)

4.3 Connection between Large-Scale Voting System and video recording system

The Large-Scale Voting System can be connected to an video recording system. The video recording system is compatible with several kinds of video signals and operates automatic video switching.

Use a RS-485 cable and connect HCS-4100M/50 Main unit (port "TO VIDEO SWITCHER") to the "TAINET" port at the rear panel of the video switcher as shown in the following figure:

Note:

☞ If discussion units are connected in the system, for video tracking purposes, the application software is used to make camera presets for every discussion unit. If the discussion unit is switched on, the video tracking system will find the appropriate preset and focus automatically on the speaker. The view of the speaker will be displayed on large screen(s) or other display devices.
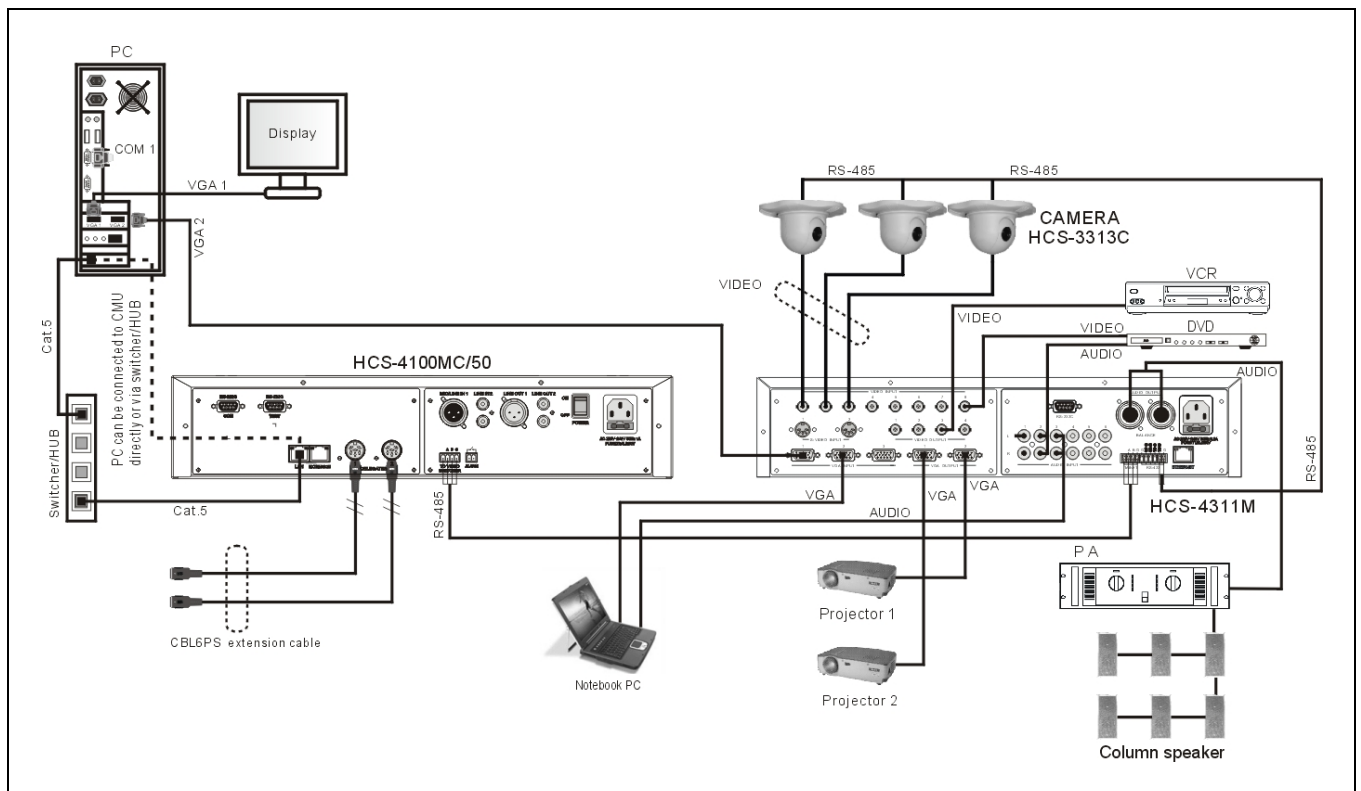

Figure 4.1   HCS-4100MC/50 congress main unit connecting to the video recording system

4.4 Connection between Large-Scale Voting System and Conference Sign-in System

The Conference Sign-in System (CSS, untouched) aims at providing a reliable, effective and convenient conference sign-in solution for various large conferences. CSS makes the organizers get updated statistical data of the participants, including the expected number of participants, confirmed sign-in registrations, seat allocation etc; these data can be provided synchronously to all participants. Furthermore, the Conference moderator is updated automatically as he benefits from a real-time report system. Conference topics, agenda, procedure and related information can all be displayed on the large screen.

Intelligent Conference Sign-in System (ICSS) uses both remote RF card and close RF card sign-in technologies

(user can choose as needed). Portrait shots and customized surface design can be printed onto the RF card – combining delegate's accreditation and ID in a single card. The delegates carry out sign-in simply by walking through the access control containing the RF card reader: a significant simplification of the sign-in procedure and also a shortening of the sign-in time.

Client/server mode with anti-virus and security mechanism is also imported in the ICSS; moreover, the system is easy to update, to extend and to choose the application software.

Figure 4.2 shows the connection between CSS and Large-Scale Voting System:
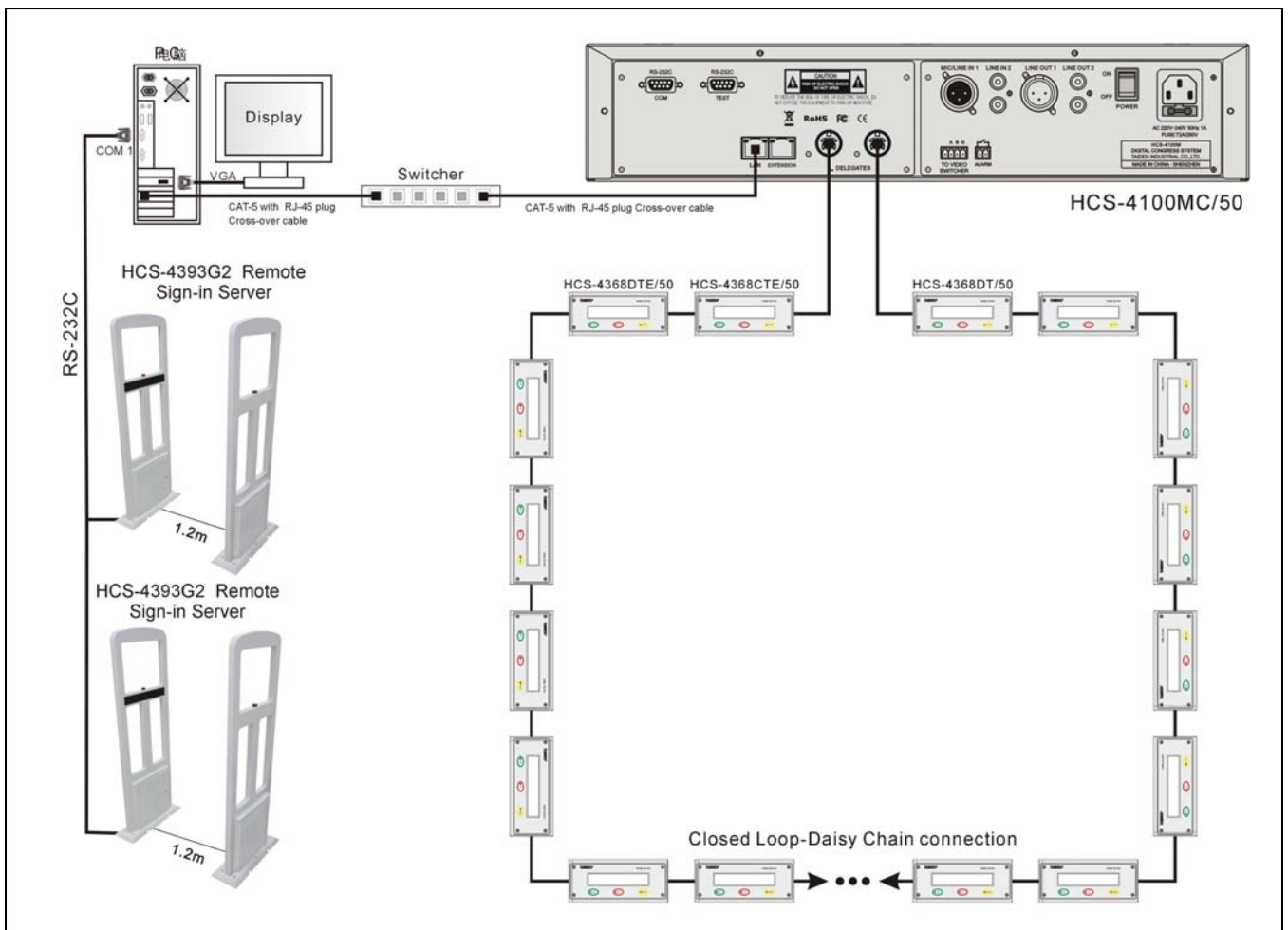
Figure 4.2   Connection between CSS and Large-Scale Voting System

4.5 Combine/split conference rooms easily

Using Cat.5 cable, several meeting rooms can be combined/separated at will through the HCS-8300MX Congress Room Combiner. One HCS-8300MX can combine up to 8 meeting rooms controlled by a Central Control System. (Several HCS-8300MX are cascadable to combine additional meeting rooms).
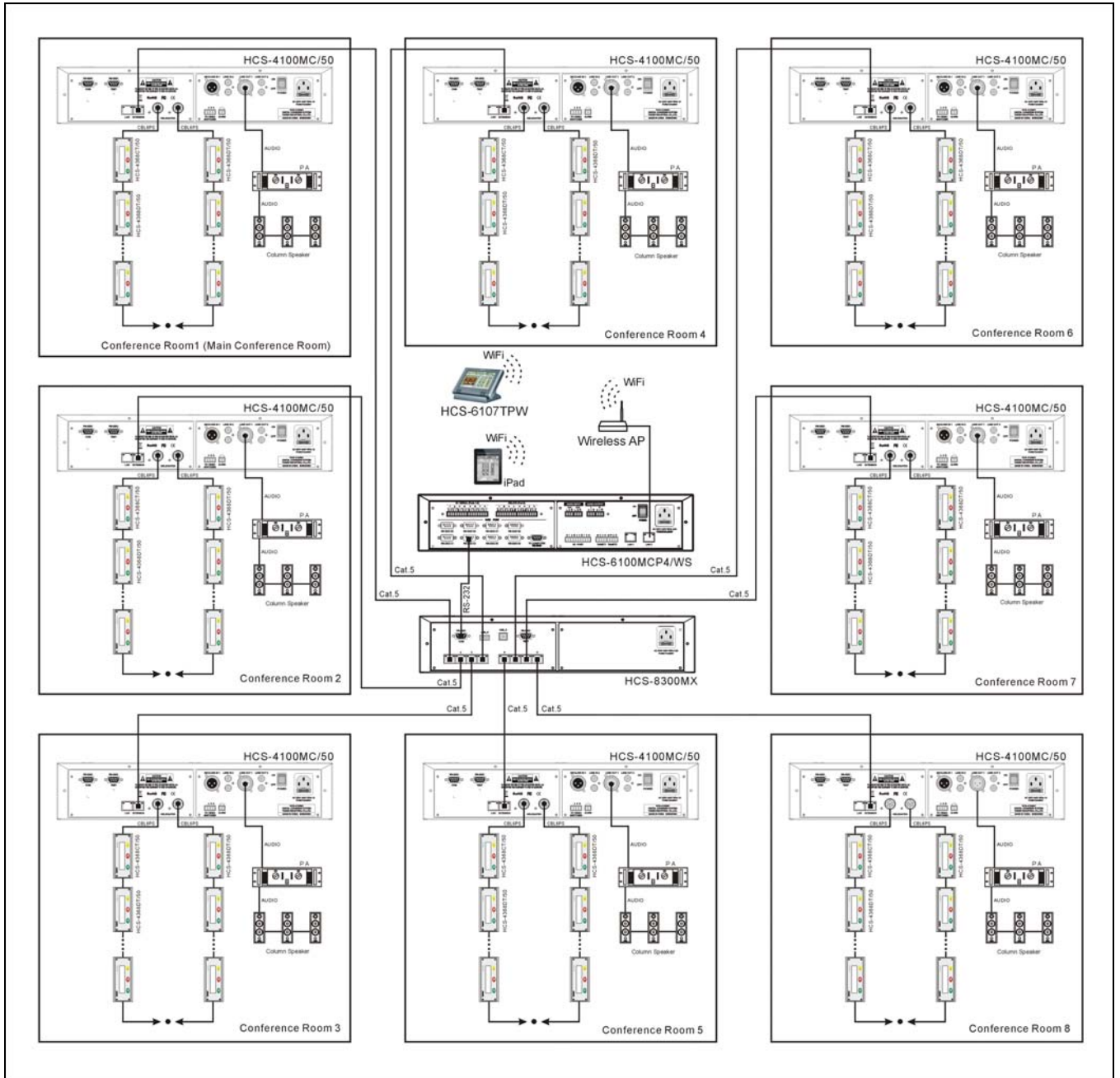
Figure 4.3   Combining/splitting meeting rooms with HCS-8300MX Congress Room Combiner and Cat. 5 cables

4.6 Total system hot spare

In the Large-Scale Voting System, the dual system main unit hot spare function cooperates with the dual PC server hot spare function, featuring multiple redundancies to realize total system hot spare function for highly enhanced system reliability.
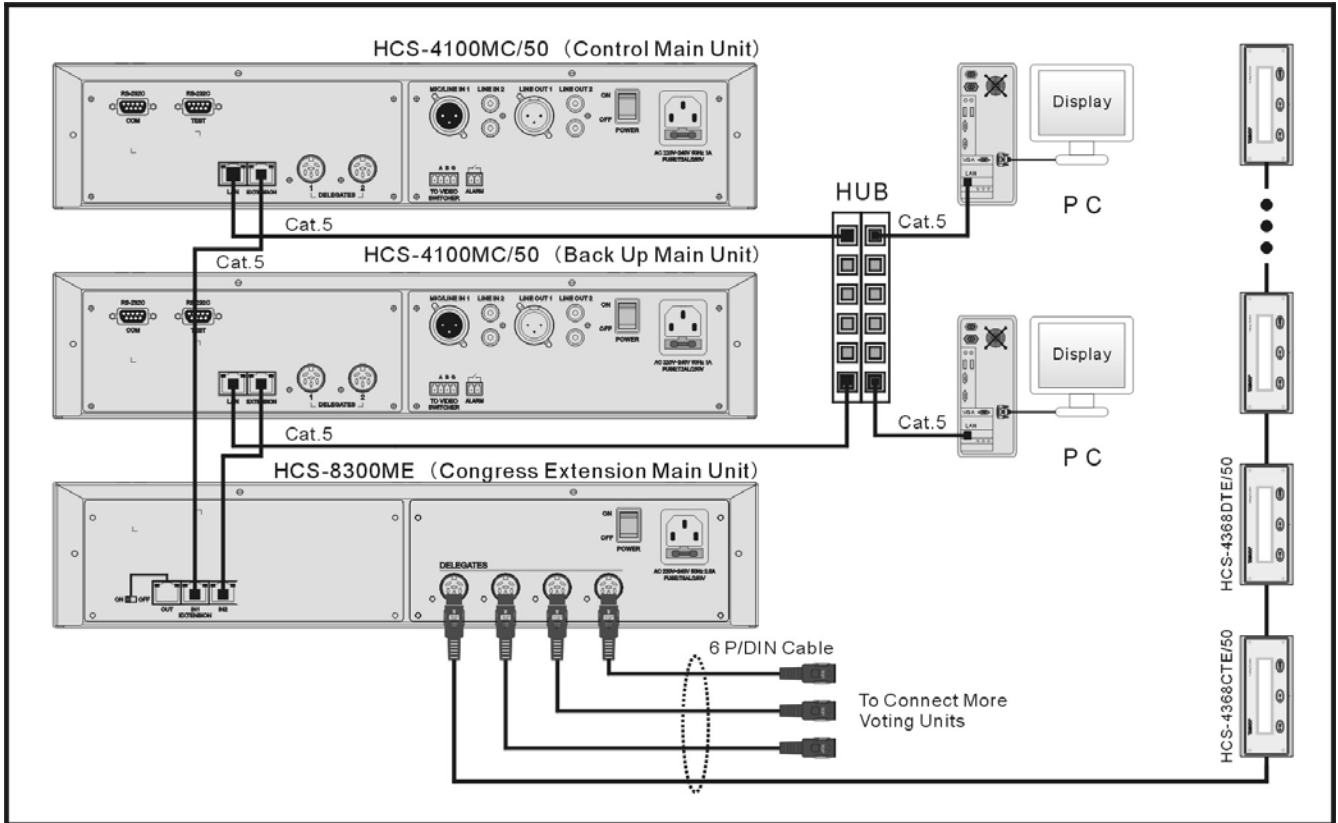
Figure 4.4　Dual System Main Unit Hot Spare
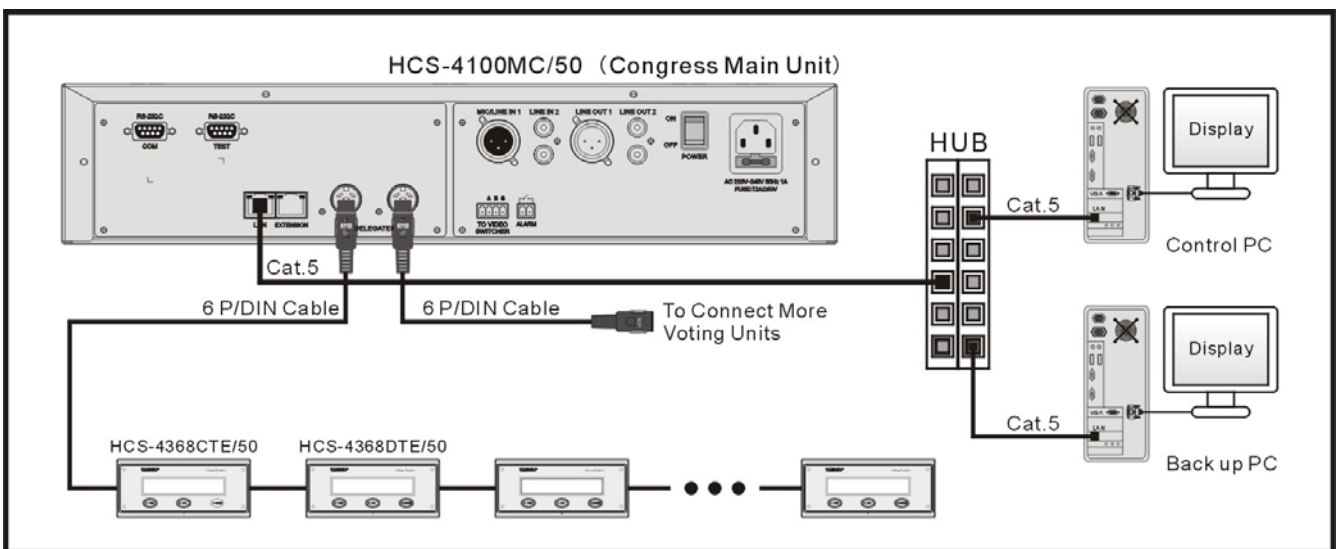
Figure 4.5　Dual PC server hot spare

Chapter 5 Accessories

Some dedicated accessories are involved in the connection of conference system devices. Herein, these accessories are introduced, including:

- CBL6PS 6-pin dedicated extension cable
- CBL6PS-CMP 6-pin dedicated extension cable
- CBL6PP-02 dedicated 6-cord extension cable
- CBL6PP-02CMP dedicated 6-pin extension cable
- Detachable 6P-DIN Standard Plug
- Solderable 6P-DIN Standard Socket (insulating)
- HVS-100P1 video display card
- HVS-200H video display card
- HCS-4352T/50 6-pin Cable Splitter

1. CBL6PS 6PIN dedicated extension cable
CBL6PS-CMP 6-pin dedicated extension cable

- ①.Male
- ②.Female or male
- Length: 1 m (only for CBL6PS), 3 m, 5 m, 10 m, 20 m, 30 m, 40 m and 50 m

2. CBL6PP-02 dedicated 6-cord extension cable
### CBL6PP-02CMP dedicated 6-pin extension cable

- Male connector at both ends
- 2-meter long

3. Detachable 6P-DIN Standard Plug

- For soldering to 6P-DIN cable
- Removable DIN standard male connector (6PIN)

4. Solderable 6P-DIN Standard Socket (insulating)

- For soldering to 6P-DIN cable
- Solderable 6P-DIN female socket with insulated isolation
- The circuit ground pin of the socket is isolated from the protective earth

5. HVS-100P1 video display card (two VGA outputs, 1G memory)
HVS-200H video display card (four VGA outputs, 512M memory)

- Supporting conference system display
- Installed inside the PC
- accompanied by a adapter head

6. HCS-4352T/50 6-pin Cable Splitter

- Relay facility, amplification of the communication signals
- 6P-DIN interfaces, "1 in / 3 out " structure for connection
- 2m-cable with a 6P-DIN connector at the input end
- Each 6PIN output interface can drive 80-meter long extension cable
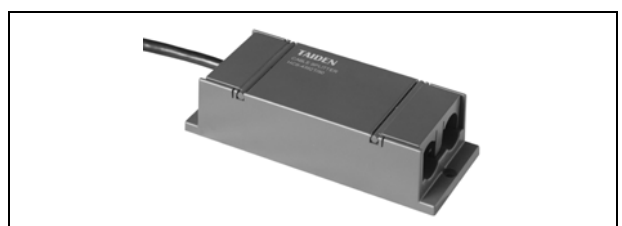
Chapter 6 Working environment and maintenance

Suitable working environment and proper maintenance methods can extend service life of the equipment effectively. For maintenance please read the contents of this section carefully.

6.1 Public areas

In public areas ensure that the cables attached to the system units, including extension cables, are run and laid out in a neat and tidy manner where they do not interfere and hinder public walk ways.

It is recommended that the chairman unit is connected at the beginning of a trunk line and not at the end. In public areas where connectors and cables could be trampled on, it is strongly suggested to use protective covers according to the existing protection specifications.

6.2 Technical rooms

It is recommended to meet the following conditions for technical rooms where HCS-4100MC/50 central control equipment is housed:

- Ensure that the area is a dust-free environment.
- Ensure adequate ventilation.
- Ensure adequate lighting. But be sure that the lighting does not impede the operator in the control room and the normal system operation.
- Do not place objects on the top of units. They could fall into vents or could cover them and thus prevent proper cooling of electronic components inside the units. By falling into a unit, objects could cause trouble such as fire and electric shock.
- To avoid the risk of shock or permanent damage to the system units, do not expose units to rain or moisture.
- Do not attempt to remove the top cover of the system main units as you will be exposed to a shock hazard. The covers should only be removed by qualified service personnel. If any repair or maintenance is required, contact the TAIDEN service center in your region.
- Equipment is only for indoor use. Do not expose it to sunlight.

WARNING: Damage to the power cable may cause fire or a shock hazard!

6.3 System operator room

In a PC based system, the operator needs a dedicated room to operate the PC and to manage the conference procedure. Generally, the demands on the operator room are the same as on the interpreter booth. By means of a microphone system, the operator should also be connected to a public - address system to remind the participants of operations, such as voting, signing-in, etc.

6.4 Ventilation

Maintain good ventilation: ventilation holes are provided on top of the main units. Place the units on a hard and level surface to ensure proper ventilation.

6.5 Cleaning

Do not use alcohol, ammonia or petroleum based liquids or abrasive cleaners to clean the equipment. Unplug first and clean with a soft cloth slightly dampened with mild soap and water solution. Assure yourself that the relevant unit is dry before operating it.

6.6 Storage

If the units are not to be used for a long period of time, disconnect the mains supply from all mains supplied units. Store them in a dust-free dry area with adequate ventilation.

Chapter 7 Technical specifications

7.1 System specifications

System performance

Conforms to IEC 60914, the international standard for conference systems

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 emission: Compliant to EN 55022
EMC immunity: Compliant to EN 55024
EMC approvals: CE, FCC
Power harmonic: Compliant to EN 61000-3-2
Voltage fluctuations and flicker: Compliant to EN 61000-3-3

7.2 Congress system main unit

7.2.1. Physical characteristics

Types	HCS-4100MC/50
Installation	Tabletop / standard 19-inch rackmount
Dimensions (mm)	
Color	White
Weight	7.8 kg

7.2.2. Electrical characteristics

Types	HCS-4100MC/50
Unit capacity	≤4096
Frequency response	30 - 20000 Hz
SNR	>96 dBA
Dynamic range	>94 dB
Crosstalk	>85 dB
Total harmonic distortion	<0.05%
Mains power supply	110 V or 220 V AC
Audio input	LINE IN 1: +10 dBu balanced LINE IN 2: +10 dBu unbalanced
Audio output	LINE OUT 1: +20 dBu balanced LINE OUT 2: +20 dBu unbalanced
Output load	>1 kΩ
Control interface	9 PIN，D-type female head, connecting the central control system main unit
	RJ45 Ethernet, connecting to PC
Maximum power consumption	200 W
Connection	Dedicated cable (6 PIN)
Connector	DIN6P with buckle

7.3 HCS-4368/50 series wired voting unit

7.3.1 Physical characteristics

Types	Dimensions (mm)	Installation	Color	Weight
HCS-4368/FM/50		Flush-mounted	Silver/Red/Gold	0.6 kg
HCS-4368/50		Tabletop	Red	0.5 kg
HCS-4368DM/FM/50		Flush-mounted	Silver/Red/Gold	0.8 kg
HCS-4368SDTE/50		Flush-mounted	Red	0.4 kg
HCS-48U6DVOTTME		Flush-mounted	Black	0.4 kg

7.3.2 Electrical characteristics

Types	HCS-4368/50	HCS-4368SDTE/50、 HCS-48U6DVOTTME
Max. power consumption	1.8 W	1.3 W
Connection	6P- DIN dedicated cable with buckle	

7.4 Accessories

- **CBL6PS 6 PIN dedicated extension cable**
  CBL6PS-CMP 6 pin dedicated extension cable

  - For extending the connection between the congress system main unit and the congress unit
  - One male plug at one end and one female socket at the opposite end
  - Length: 1-meter (only for CBL6PS), 3-meter, 5-meter, 10-meter, 20-meter, 30-meter, 40-meter and 50-meter

- **CBL6PP-02 dedicated 6-cord extension cable**
  CBL6PP-02CMP dedicated 6-pin extension cable

  - Connecting conference main units
  - Male connector at both ends
  - 2-meter long

- **HVS-100P1 video display card (two VGA outputs, 1G memory)**

  HVS-200H video display card (four VGA outputs, 512M memory)
  - Supporting conference system display
  - Installed inside the PC
  - DVI connector and accompanied by a DVI-VGA adapter head

- **HCS-4352T/50 6PIN cable distribution unit**

  - With relay function, for signal regeneration
  - 6P-DIN interface with 1 input and 3 outputs
  - Input: 2-meter long 6P-DIN male plug
  - Output: 6P-DIN output, can drive 80-meter extension cable
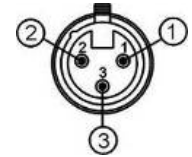
7.5 System connection

7.5.1 Mains cables

Blue	Neutral
Brown	Hot (Phase)
Green/Yellow	Earth/Ground

7.5.2 Audio cables

3-pole XLR connector (female)

Pin 1 Earth
Pin 2 Signal +
Pin 3 Signal -

Chinch connector (male)

Pin 1 Signal +
Pin 2 GND

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