TAIDEN®

HCS-3900 Series Compact Digital Conference System

Excellent conferencing solutions

Installation and Operating Manual

V 1.8

Remarks:

- All rights reserved for translation, reprint or reproduction

- Contents may change without prior announcement

- All technical specifications are guideline data and not guaranteed features

- TAIDEN Industrial 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 2014/30/EU.

- To protect your hearing, avoid high pressure level on earphones. Adjust to a lower and convenient level.

- If any detailed information is needed, please contact your local agent or **TAIDEN** service center in your region. 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 conference system be scheduled to shut down every day in the evening when not in use.

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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 -240 V 50/60 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.

 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.

Important Safety Instructions

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 **TAIDEN** HCS-3900 Compact Digital Conference System. It includes the detailed description of the functions and interfaces of the HCS-3900 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 system composition, technology, functions and features of HCS-3900 Compact Digital Conference System.

Chapter 2: Conference main unit

Descriptions in detail of the functions and indications, installation and connection, configuration and operation of conference main unit (CMU) and extension unit of HCS-3900/20 Compact Digital Conference System.

Chapter 3: Conference unit

Descriptions in detail of the functions and indications, installation and connection, configuration and operation of conference units of HCS-3900 Compact Digital Conference System.

Chapter 4: System connection and basic configuration

Descriptions in detail of the connection between system devices.

Chapter 5: Web control

Descriptions in detail of the function and operation of Web control of HCS-3900 Compact Digital Conference System.

Chapter 6: Accessories

An introduction to the accessories of HCS-3900 Compact Digital Conference System, e.g. stem microphone and earphones.

Chapter 7: Environment and maintenance

An introduction to the work environment and maintenance of HCS-3900 Compact Digital Conference System.

Chapter 8: Specification

Main technical parameters of HCS-3900 Compact Digital Conference System.

Installation & User Guide

This manual is applicable to:

■ **Conference Main Units**

HCS-3900MA/20

Compact Digital Conference System Main Unit (discussion, recording, 256x64 OLED, 6P sockets)

HCS-3900MB/20

Compact Digital Conference System Main Unit (discussion, 256x64 OLED, 6P sockets)

■ **Discussion units**

HCS-3938C

Compact Digital Conference System Chairman Unit

HCS-3938D

Compact Digital Conference System Delegate Unit

HCS-3938CF

Compact Digital Conference System Chairman Unit (fixed gooseneck)

HCS-3938DF

Compact Digital Conference System Delegate Unit (fixed gooseneck)

HCS-3940C

Compact Digital Conference System Chairman Unit

HCS-3940D

Compact Digital Conference System Delegate Unit

■ **Earphone**

EP-820AS   Single Earphone
EP-830   Single Earphone
HCS-5100PA   Headphone
EP-960BH   Headphone

Chapter 1 Introduction

1.1 Summary

Based on cutting-edge digital control technologies, HCS-3900 Series Compact Digital Conference System is flexible and reliable for any conference of informal small or middle meeting. The system features include: microphone management, automatic video tracking, conference audio recording, etc.

HCS-3900 Series Compact Digital Conference System is also provided with function that to access and control main unit through Web browser, thus the operator can easily manage and control the conference proceedings.

Other peripheral devices like computers, touch panels, projectors and loudspeakers can also be integrated with HCS-3900 Series Compact Digital Conference System.

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

■ **Conference Main Units**

HCS-3900MA/20
Compact Digital Conference System Main Unit (discussion, recording, 256x64 OLED, 6P sockets)
HCS-3900MB/20
Compact Digital Conference System Main Unit (discussion, 256x64 OLED, 6P sockets)

■ **Discussion units**

HCS-3938C

Compact Digital Conference System Chairman Unit
HCS-3938D
Compact Digital Conference System Delegate Unit
HCS-3938CF
Compact Digital Conference System Chairman Unit (fixed gooseneck)
HCS-3938DF
Compact Digital Conference System Delegate Unit (fixed gooseneck)
HCS-3940C
Compact Digital Conference System Chairman Unit
HCS-3940D
Compact Digital Conference System Delegate Unit

■ **Earphone**

EP-820AS	Single Earphone
EP-830	Single Earphone
HCS-5100PA	Headphone
EP-960BH	Headphone

1.2 System equipment

1. Conference Main Unit (CMU)

The Conference Main Unit forms the core of the entire conference system. It provides power supply to all contribution units and serves as key component to link system hardware to Web control. In stand-alone mode, the CMU only carries out basic management facilities; while more comprehensive management facilities can be implemented through the Web control.

By using network techniques, conference systems are linked tightly to the rapidly developing internet technology, communication technology and computer science. 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.

The dedicated 6-pin cable is used to transmit high quality digital audio, control and other information data, avoiding cables cluttering up the conference venues and adaptable to any system cabling requirements. The main unit has a dapper configuration can put on the council board direct and agile for use and move. The professional 6P-DIN standard plug and clasp improve system connection reliability, while facilitate system installation and disassembly; the "daisy chain" design of contribution units enables the units to be added into the system at any desired point, and simplifies equipment extension and maintenance significantly.

2. Contribution units

Contribution units are units used by participants to contribute to a conference. It is built-in loudspeaker and earphone jack. There are tabletop designs convenient for using.

Low power consumption design is adopted in HCS-3900 series conference units, convenient for wiring and installation.

All conference units of HCS-3900 series 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 conference 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 section 4.1 for details).

3. Accessories

Relevant accessories connected or used in HCS-3900 series include: Connections cables, Grounding cable sockets and Earphones/Headphones, etc.

1.3 Web control

HCS-3900 conference system can be controlled by Web page that is comprehensive, reliable and user-friendly. The user can access the IP address of main unit from web browser to manage centrally all aspects of the conference. The operation turns out to be easy and efficient.

By Web page control, functions of HCS-3900 conference system include: CMU Setting, Assign Unit ID to Delegate, Speaking and Request List, Video Matrix and Predefine Position, etc..

1. Set up numbers of active microphones and operation modes

- Active microphone(s) limit (1/2/3/4) and speech time limit.
- Five operation modes can be set via the main unit:
  - "OPEN" mode, after the number of active microphone(s) come to the limit, microphone key with request-to-speak registration (AUTO);
  - "OVERRIDE" mode, if the limit is achieved, microphone key controls with override of the active microphones (FIFO);
  - "VOICE" mode，automatic voice-controlled mode, sensitivity level can be set;
  - "APPLY" mode, delegate applies to speak by pressing microphone On/Off key, delegate can speak only when chairman approved his application;
  - "PTT" mode, 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.

2. Multi-chairman unit in one system and delegate units set as VIP

- In one system at most 100 chairman units can be connected, but only 1 chairman unit has control facility.
- Delegate units can also be set as VIP, as many as 32 VIP units are available in one system. VIP unit can be activated as long as the total of active microphones is not beyond 6 (including chairman/delegate/VIP unit, except voice mode).

3. Web control

- Active microphone(s) limit (1/2/3/4) and microphones mode selection.
- Microphone ID list, speaking and request list can be displayed on Web page and through which the operator can turn on/off the microphones.
- Speech time limit.
- Predefined position setting, video matrix setting and video switch.

4. Conference recording and playback

- USB interface and SD slot for conference recording and playback.
- The recording will switch to the other device when SD card or USB drive is full without interruption.

5. Digital Audio input/output

- USB interface realizing quality-lossless sound recording on PC and intact input of streaming audio into the system

6. Automatic video tracking

- Automatic video tracking can be carried out if video switch unit and camera are installed, and the video image can be displayed on the screen synchronously.

7. Built-in loudspeaker

- The main unit has a dapper design can be put on the council board and its built-in monitor loudspeaker can be directly employed in small and medium size meeting rooms without amplification system.

8. Seamlessly integrated with central control system

- The seamless integration of HCS-3900 Compact Digital Conference System and central control system provides comprehensive conference system solutions. Besides the basic conference management (discussion, video tracking, etc.), it also manages peripheral multimedia equipment, surrounding lights, projector display and sound equipment.

9. System self-detecting

- Built-in self-detecting function in each contribution unit for automatic detection of LED indicators.

10. Excellent immunity to RF interference from mobile phones

Chapter 2 Conference main unit

The Conference Main Unit (CMU) forms the core of the entire conference system, and provides power supply to all contribution units, meanwhile, serving as the key component to link up hardware with Web page control. In stand-alone mode, the CMU only carries out basic management facilities; while more comprehensive management facilities can be implemented through the Web control.

The devices that can be controlled by the CMU include: discussion units and video switcher, etc. By conference extension units, the Compact Digital Conference System can connect up to 255 conference units.

Product types:

HCS-3900MA/20

Compact Digital Conference System Main Unit (discussion, recording, 256x64 OLED, 6P sockets, USB interface for digital audio input/output)

HCS-3900MB/20

Compact Digital Conference System Main Unit (discussion, 256x64 OLED, 6P sockets, USB interface for digital audio input/output)

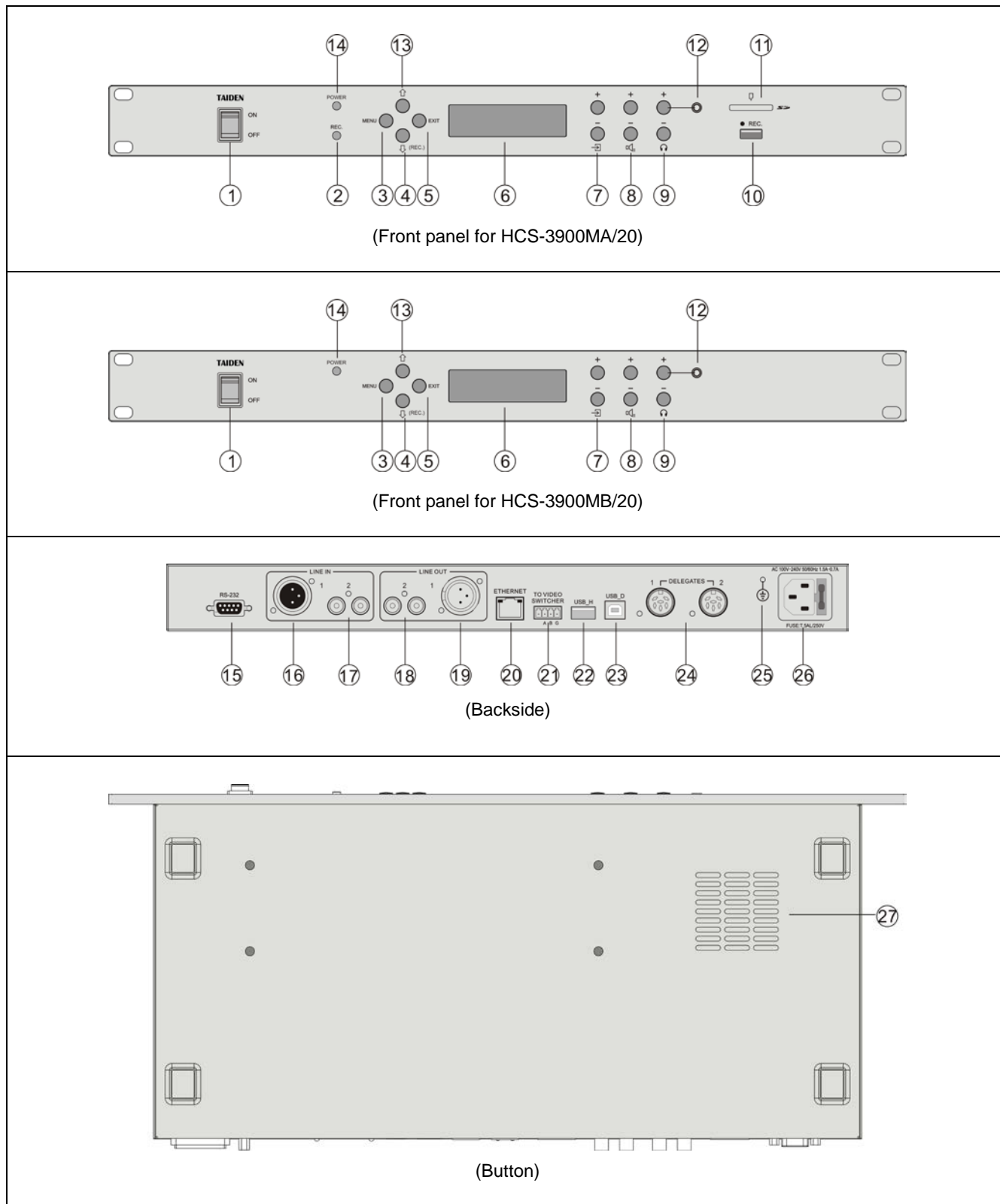## 2.1 Compact digital conference system main unit

2.1.1 Functions and instructions

(Front panel for HCS-3900MA/20)

(Front panel for HCS-3900MB/20)

(Backside)

(Button)

Figure 2.1　Conference main unit

Figure 2.1

1. Power switch

2. REC indicator light

- REC light turn off when stopping recording;
- The recording will switch to the other device when SD card or USB drive is full without interruption, and the state of REC light flashing will be changed according to the storage room of the recorder (refer to table 2.1).

3. "MENU" button

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

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

4. "⇩" (Down) button

- The LCD displays the <u>initial</u> user interface: press this button to select the number of maximum active microphones;
- The OLED displays the <u>set-up</u> user interface: press this button to move down the cursor.

5. "EXIT" button

- The OLED displays the <u>initial</u> user interface: press this button to switch Mic. mode;
- The OLED displays the <u>set-up</u> user interface: press this button to exit or return to the upper level menu.

6. OLED

- 256×64 OLED displays main unit status and configuration menu;
- No operation within 4 minutes will enter the screen saver interface.

7. Line in volume control

8. Master volume control

9. Earphone volume control

10. USB interface

- Be connected to USB drive with the capacity up to 256 G for meeting audio recording, the file type is *.aac;
- For upgrade of recording application.

11. SD card slot

- Supports up to 64 G SD card for recording meeting audio, the file type is *.aac

12. Monitoring earphone interface (Ø 3.5 mm).

13. "⇧" (Up) button

- The OLED displays the <u>initial</u> user interface: press this button to select the number of maximum active microphones;
- The OLED displays the <u>set-up</u> user interface: press this button to move up the cursor.

14. Power indicator light

15. RS-232 port

16. LINE IN 1 (3 cord XLR balanced input)

17. LINE IN 2 (RCAx2 unbalanced input)

18. LINE OUT 2 (RCAx2 unbalanced output)

19. LINE OUT 1 (3 cord XLR balanced output)

20. Ethernet

- 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.
- For data communication and upgrade.

21. Video switch interface

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

22. USB_H interface, for upgrade

23. USB_D interface, for upgrade, for digital audio input/output

24. Contribution units output interface (two routes, 6P-DIN sockets)

25. Grounding post

26. Power supply

27. Loudspeaker

Table 2.1   List of REC indicator light state

Recording media and flashing state		Current media A (USB drive or SD card)			
		<10M	10~30M	30~50M	>50M
Recording media B (SD card or USB drive)	<10M	Stop recording	flash fast	flash slow	on
	10~30M	B in use / flash fast	flash fast	flash slow	on
	30~50M	B in use / flash slow	flash fast	flash slow	on
	>50M	B in use / on	flash slow	on	on
	No device	Stop recording	flash fast	flash slow	on

2.1.2 Installation and connection

HCS-3900M/20 series conference main unit is stylish and cabinet design. Just needs to put the 1U HCS-3900M/20 main unit into the cabinet, and fix it by screws. As figure 2.2.
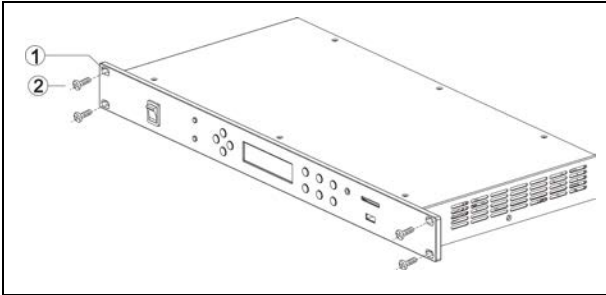

Figure 2.2   Installation

HCS-3900 series CMU has 2 outlet (6P-DIN) trunk-line cable connectors for contribution units. HCS-3900 series contribution units are equipped with a 6P-DIN cable with a standard male connector.

When connecting the main unit to the contribution units, just connect the 6P-DIN male connector of the first unit to the output of the main unit.

For a longer distance between the contribution unit and the CMU/EMU, a CBL6PS extension cable is used. One end of this cable is equipped with a 6P-DIN male connector; the opposite end is equipped with a 6P-DIN female connector. Just connect the female connector of the cable to the conference unit, and connect the male connector to the output of the main unit.
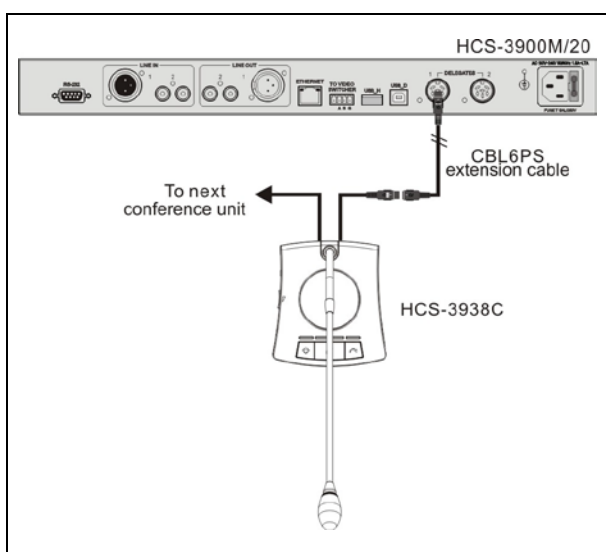

Figure 2.3   CMU connected to conference units

2.1.3 Configuration and operation

After installation and connection and prior to the meeting, the CMU should be configured through the dialog menu and the buttons. The term "interface" used hereinafter means the information displayed on the OLED as the "user" interface.
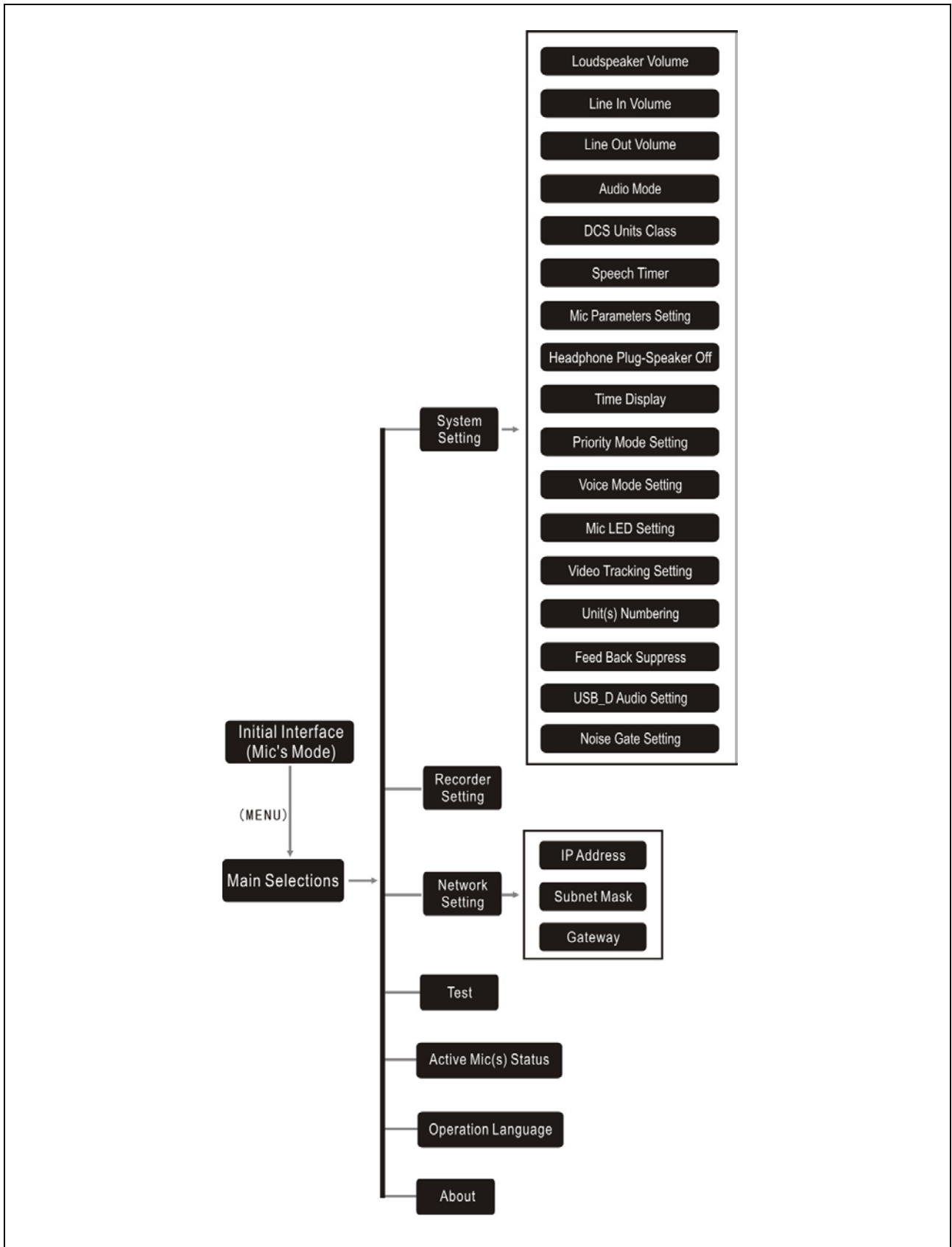
The menu structure is shown in the following figure:

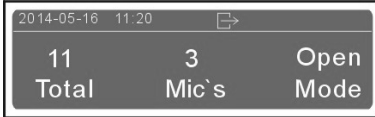Figure 2.4   OLED menu structure of the conference main unit

A）Initial interface on OLED

In the initial interface on OLED, there are current time and the current type of input/output on the top, the system status information are displayed below which includes:

→ **"Total"**
→ **"Mic's"**
→ **"Mode"**

```
2014-05-16  11:20        ⇨
     11          3        Open
   Total       Mic`s     Mode
```

1. **Type of input/output:**

   ・ ⇨: level of Line In1;

   ・ ⇥: volume of Line Out1 and Line Out2;

   ・ 🕪: Master volume;

   ・ 🎧: volume of monitor headphone.

2. **"Total"**: Indicates the number of contribution units being connected to the CMU;

3. **"Mic's"**: select the number of maximum active microphones (1/2/3/4 pcs) by press "⇧" (Up) button;

4. **"Mode"**: Display the operation mode (OPEN/ OVERRIDE/VOICE/APPLY/PTT) of the CMU;

   Press the "EXIT" button to choose "OPEN", "OVERRIDE", "VOICE", "APPLY" or "PTT" from five different operation modes.

   Five operation modes are featured:

   "OPEN": After the number of active microphone(s) reaches the limit, microphone key control starts request-to-speak registration. At most 6 microphones can be in the request-to-speak list. When one of the activated microphones is turned off, the first microphone in the list will be automatically turned on;

   "OVERRIDE": If the limit is achieved, the first activated microphone will be switched off when another microphone is turned on. The maximum number will not exceed the limit set.

   "VOICE": The microphone is activated by voice. If the participant speaks into the microphone closely, the microphone will be switched on automatically and off after a speech pause out of predefined time; voice sensitivity level can be set up;

   "APPLY": Delegate applies to speak by pressing the microphone On/Off key, the request is approved or rejected by the chairman unit with control facility.

   "PTT": 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;

Note:

☞ "Voice" speaking mode: the chairman unit and the VIP unit count in the active microphone number limitation (1/2/3/4), if the active microphone number limitation reached, the microphones of the chairman unit and the VIP unit cannot be turned on;

☞ Other speaking mode: the chairman unit and the VIP unit do not count in the active microphone number limitation (1/2/3/4), at most 6 microphones can be activated at the same time in a system.

B）Access main menu

Pressing "Menu" button under initial interface will go to the main menu, which includes seven menu items:
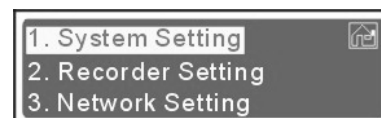
→ **"System Setting"**
→ **"Recorder Setting"**
→ **"Network Setting"**
→ **"Test"**
→ **"Active Mic(s) Status"**
→ **"Operation Language"**
→ **"About"**

```
1. System Setting        🏠
2. Recorder Setting
3. Network Setting
```

The current chosen term (e.g. "System Setting") is highlighted.

a). Press the "MENU" button to go to the corresponding submenu;

b). To switch from term to term use the "⇧/⇩" button;

c). To exit the current menu and to return to the upper level menu use the "EXIT" button.

2.1.3.1 System Setting

"System Setting" includes:
→ **"Loudspeaker Volume"**
→ **"Line In Volume"**
→ **"Line Out Volume"**
→ **"Audio Mode"**
→ **"DCS Units Class"**
→ **"Speech Timer"**
→ **"Mic Parameters Setting"**
→ **"Headphone Plug-Speaker Off"**
→ **"Time Display"**
→ **"Priority Mode Setting"**
→ **"Voice Mode Setting"**
→ **"Mic LED Setting"**
→ **"Video Tracking Setting"**
→ **"Uinit(s) Numbering"**
→ **"Feed Back Suppress"**
→ **"USB_D Audio Setting"**
→ **"Noise Gate Setting"**

```
1. Loudspeaker Volume
2. Line In Volume
3. Line Out Volume
```

1. "Loudspeaker Volume"

Adjust loudspeaker volume of main unit and conference units, range: Mute, -30 dB to 0 dB.

```
1. Main Unit
2. DCS Units        -9 dB
```

a). Press the "⇧/⇩" button to select unit and press the "MENU" button to enter;
b). Press the "⇧/⇩" button to adjust volume;
c). Press the "MENU" button to save and press the "EXIT" button to return to upper level menu.

2. "Line In Volume"

Adjust the volume of Line In 1 and Line In 2, range: Mute, -30 dB to 0 dB.

```
1. Line In 1
2. Line In 2        0 dB
```

1. Press the "⇧/⇩" button to select "Line In 1" or "Line In 2" and press the "MENU" button to enter;
2. Press the "⇧/⇩" button to adjust volume;
3. Press the "MENU" button to save and press the "EXIT" button to return to upper level menu.

3. "Line Out Volume"

Adjust the volume of Line Out 1 and Line Out 2, range: Mute, -30 dB to 0 dB.

```
1. Line Out 1
2. Line Out 2       0 dB
```

1. Press the "⇧/⇩" button to select "Line Out 1" or "Line Our 2" and press the "MENU" to enter;
2. Press the "⇧/⇩" button to adjust volume;
3. Press the "MENU" button to save and press the "EXIT" button to return to upper level menu.

4. "Audio Mode"

"Audio Mode" includes three submenus:
→ **"Normal Mode"**
→ **"Remote Mode"**
→ **"Insert Mode"**

```
1. Normal Mode
2. Remote Mode
3. Insert Mode
```
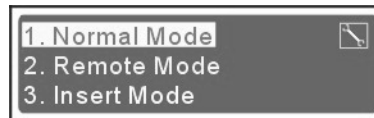
1. Press the "⇧/⇩" button to select audio mode;
   ▪ **Normal Mode:** LineOut1, LineOut2, loudspeaker and the conference unit earphones output floor audio (mix output of LineIn1 input signal, LineIn2 input signal and active microphone signal); monitoring earphone output audio signal of LineOut1, as shown in figure 2.5;
   ▪ **Remote Mode:** LineIn1 input the remote conference audio signal; LineOut1 output local floor audio (mix output of LineIn2 input signal and active microphone signal), monitoring earphone output the audio signal of LineOut1, LineOut2, loudspeaker and conference unit earphone output floor audio (mix output of LineIn1 input signal, LineIn2 input signal and active microphone signal), as shown in figure 2.6;
   ▪ **Insert Mode:** LineOut1 and LineOut2 output floor audio (mix output of LienIn1 input signal and active microphone signal); monitoring earphone output the audio signal of LineOut1, loudspeaker and conference unit earphone output input signal of LineIn2 (LineOut1 signal processed by external audio equipment and feedback to LineIn2 input), as shown in figure 2.7.
2. Press the "MENU" button to save and return to the upper level menu.
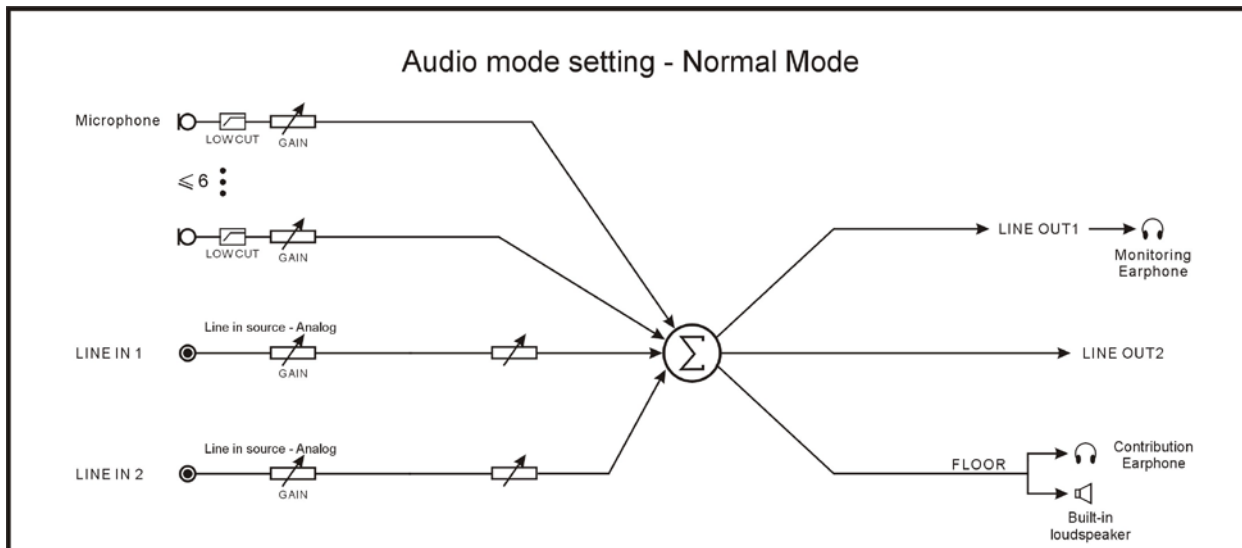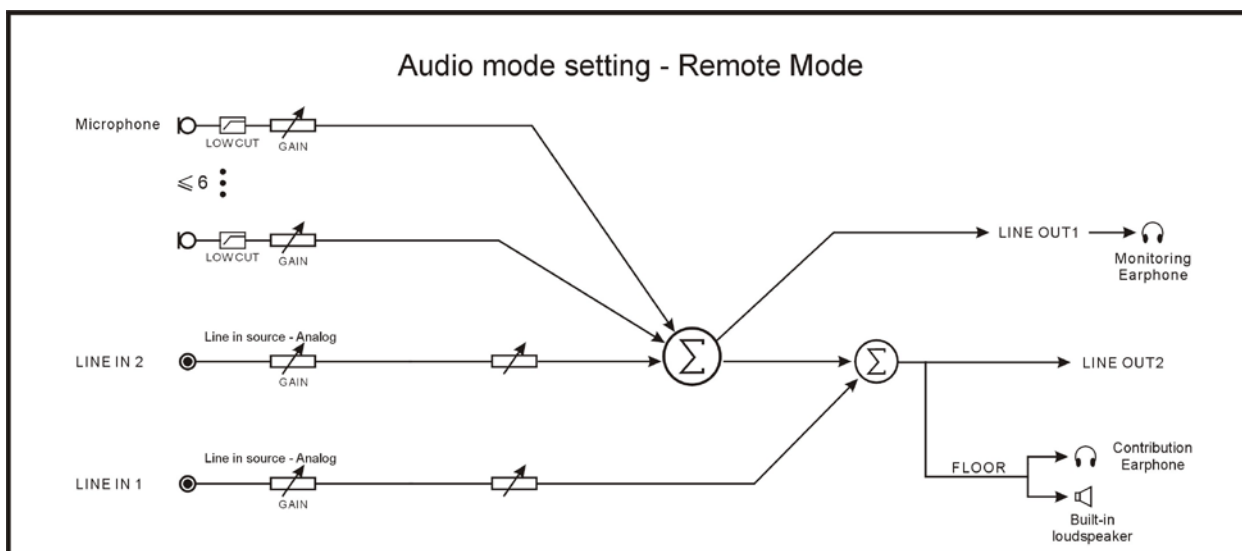
Figure 2.5   Audio mode setting – Normal Mode
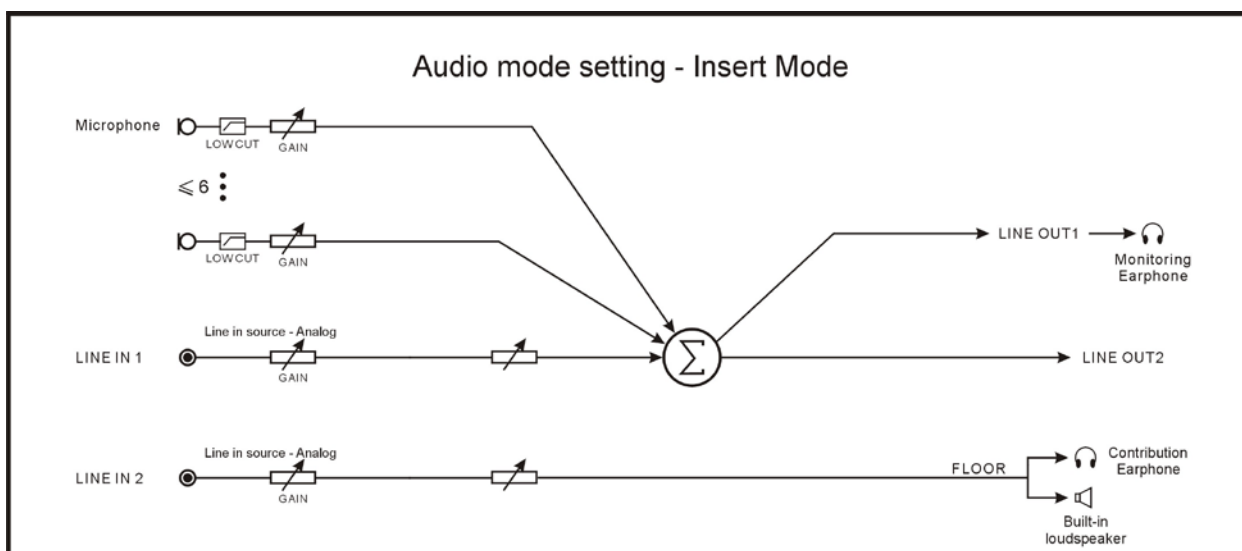
Figure 2.6   Audio mode setting – Remote Mode

Figure 2.7   Audio mode setting – Insert Mode

5. "DCS Units Class"

Enable the chairman unit and VIP unit(s). "DCS Units Class" interface displays the ID of current chairman and the total number of VIP units, and includes two submenus:

→ **"Chairman"**

→ **"VIP"**

```
1. Chairman                    ◥
             Chairman ID: 1
2. VIP       Total VIP: 2
```

■ **"Chairman"**

```
1. Chairman                    ◥
             Set Chairman:
2. VIP                   End
```

1. Press the "⇧/⇩" button to select "Chairman" and press the "MENU" button to enter;
2. The button indication lights of all chairman units are flashing, press any chairman unit to enable and its light will be turned on, press the button again to cancel;
3. Press the "EXIT" button to return to upper level menu. There is only one chairman unit can be enabled as the control unit in a system; other units will be the same function as the delegate unit.

■ **"VIP"**

```
1. Chairman                    ◥
             Set VIP:
2. VIP               End
```

1. Press the "⇧/⇩" button to select "VIP" and press the "MENU" button to enter;
2. The Mic. ON/OFF key indication lights of all units (except the enabled chairman unit) are flashing, press the units one by one to enable VIP and their lights will be turned on, press the button again to cancel;
3. Press the "EXIT" button to return to upper level menu. The maximal number of VIP units is 32.

6. "Speech Timer"

Set a speech time, range: 1-240 minutes.

```
                               ◥
      On              Off
```

1. Press "⇧/⇩" to set speech timer On/Off:
   ▪ If "Off" is selected, press the "MENU" button to
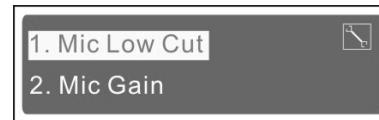
confirm and return to upper level menu;
   ▪ If "On" is selected, press the "MENU" button to confirm and go to step 2;
2. Press the "⇧/⇩" button to switch between "Speaking Time * Minutes" and "Before End * Seconds";

```
        Speaking Time  5   Minutes    ◥
Prompt:
        Before End    10   Seconds
```

3. Press "MENU" to select the number of highlight item;
4. Press the "⇧/⇩" button to set time and press "MENU" to confirm;
5. Press the "EXIT" button to save and return to upper level menu.

7. "Mic Parameters Setting"

Setting the Mic Low Cut and the Mic Gain.

```
1. Mic Low Cut                 ◥
2. Mic Gain
```

■ **"Mic Low Cut"**

```
                               ◥
      On              Off
```

1. Press the "⇧/⇩" button to select "Yes" or "No";
2. Press "MENU" button to save and return to upper level menu.

■ **"Mic Gain"**

1. Press the "⇧/⇩" button to select "Apply to All Microphones" or "Apply to Active Microphones" and press the "MENU" button to enter;

```
1.Apply to All Microphones   ◥
2.Apply to Active Microphones
```

2. Press the "⇧/⇩" button to select "Step Adjustment" or "Specified Value"

```
1.Step Adjustment              ◥
2.Specified Value
```

✦ **"Step Adjustment":** press the "⇧/⇩" button once to increase/reduce 1 dB;

```
Apply to All Microphones     ◥
  + 1 dB            -1 dB
```

✦ **"Specified Value":** press the "⇧/⇩" button to switch the gain, range:-15 dB to +15 dB;

Apply to All Microphones
+1 dB

3. Press the "MENU" button to confirm.

8. "Headphone Plug-Speaker Off"

Set the work mode between loudspeaker and headphone.

Yes   No

1. 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;
2. Press the "MENU" button to save.

9. "Time Display"

Set the current time.

2014 - 05 - 16 14:35:08

1. Press the "⇧/⇩" button to switch between the six numbers;
2. Press "MENU" to edit the selected number;
3. Press the "⇧/⇩" button to adjust the number and press the "MENU" button to save;
4. Press "EXIT" to return to upper level menu.

10. "Priority Mode Setting"

Select enable/disable chairman priority button.

1. Disable Priority
2. Turn Off All Microphones
3. Mute All Microphones

1. Press the "⇧/⇩" button to select priority mode;
   - "**Disable Priority**";
   - "**Turn Off All Microphones**": when chairman presses "Priority" button, all active microphones will be deactivated (VIP units will be mute).
   - "**Mute All Microphones**": when chairman presses and holds "Priority" button, all active microphones will mute temporarily; when chairman releases "Priority" button, all temporarily muted microphones will resume.

2. Press "MENU" button to save and return to upper level menu.

11. "Voice Mode Setting"

It includes two submenus:
→ "Voice Sensitivity"
→ "Voice Mode Switch Off Time"

1. Voice Sensitivity
2. Voice Mode Switch Off Time

■ "Voice Sensitivity"

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

Low   High

1. Press the "⇧/⇩" button to set microphone sensitivity;
2. Press the "MENU" button to save and return to upper level menu.

■ "Voice Mode Switch Off Time"

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

5 s

1. Press the "⇧/⇩" button to set auto off time, range: 300 ms/ 600 ms/ 1 s to 15 s;
2. Press the "MENU" button to save and return to upper level menu

12. "Mic LED Setting"

Control the illuminated ring (green) of the stem microphone On/Off. It includes two submenus:
→ "Mic Green LED Ring"
→ "Blink First Request Ring"

1. Mic Green LED Ring
2. Blink First Request Ring

1. Press "⇧/⇩" button to select "Mic Green LED Ring" or "Blink First Request Ring", then press "MENU" to enter;
2. Press "⇧/⇩" button to select "On" or "Off";

"Mic Green LED Ring":

- If "On" is selected, the green illuminated ring will indicate the applying status;
- If "Off" is selected, the green illuminated ring gives no indication;

"Blink First Request Ring":

- 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;

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

Note:
☞ The "Blink First Request Ring" is available when the "Mic Green LED Ring" selects "On".

13. "Video Tracking Setting"

Enable/disable video tracking function.

a). Press the "⇧/⇩"button to select "Turn On" or "Turn Off";
- If "Turn Off" is selected, press the "MENU" button to confirm and return to upper level menu;
- If "Turn On" 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 chairman unit. If no chairman unit is present, it will turn to VIP unit;

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

14. "Unit(s) Numbering"

Number the conference units. Enter the Number interface, shown in the following figure. The LEDs on all connected contribution units will blink immediately.

1. press the "On/Off" keys on the contribution unit one by one to number each unit;
2. When finished, restart the CMU to update the number.
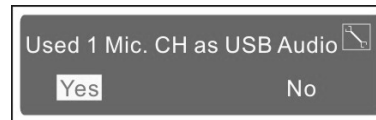
15. "Feed Back Suppress"

Set the level of feed back suppress.

1. Press the "⇧/⇩" button to switch among "Off", "Low" and "High";
2. Press the "MENU" button to save and return to the upper level menu.

16. USB Audio Setting

Enable/disable USB audio function. The USB audio will engage one microphone channel (that means at most 5 microphones can be activated at the same time in a system).

1. Press the "⇦/⇨" button to select "Yes" or "No";
2. Press the "MENU" button to.

17. "Noise Gate Setting"

Turn on the noise gate can reduce the ambient noise of the output signal when no speaking.

1. Press the "⇧/⇩" button to select "On" or "Off";
2. Press the "MENU" button to save.

2.1.3.2 Recorder Setting

"Recorder Setting" includes two submenus:

→ **"Record"**

→ **"Playback"**

```
1. Record
2. Playback
```

a) Record

1). After enter the record interface, press the "⇧/⇩" button to select a recorder media;

```
Select Medium:
1. USB Drive   Missing
2. SD Card     150/1024 MB
```

You can select "USB Drive" or "SD Card" and their status and capacity information will be displayed in behind.

2). Press the "MENU" button to record;

```
SD Card Recording...
          150/1024 MB
   ■
```
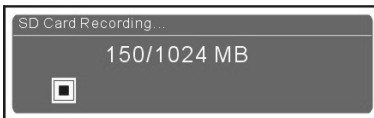
Now the REC indicator light on the front panel of CMU will turn on or flash and it will turn off when the storage capacity is less than 10 M (stop recording).

3). Press the "MENU" button to stop and save the record.

```
SD Card Recording...
          148/1024 MB
   ✖      0:03:09
```
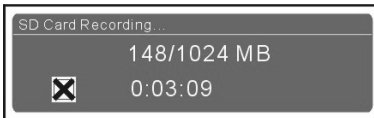
b). Playback

1). After enter the playback interface, press the "⇧/⇩" button to select a recorder media;

```
Select Medium:
1. USB Drive   Missing
2. SD Card     150/1024 MB
```

2). Press the "⇧/⇩" button to select a record and press the "MENU" button to entre;

```
                              3/12
140611 095110.acc   123.001KB
140619 164455.acc          0 B
140619 164515.acc          0 B
```
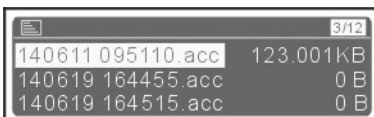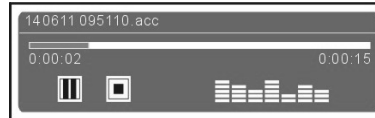
The record is named according to the recording time, for example, a file by the name of "140611 095110" means it is recorded at 09:51:10 on 2014-06-11.

3). Press the "MENU" button to playback;

```
140611 095110.acc


   ▶
```

4). Press the "MENU" button to stop or continue playing;

```
140611 095110.acc
0:00:02                    0:00:15
   ▐▐    ■       ▤▄▤▄▤▄▄▤▄
```
```
140611 095110.acc
0:00:02                    0:00:15
   ▶    ■
```

5). Press the "⇧/⇩" button to select ■ and press the "MENU" button to turn off, and then press the "EXIT" button to exit.

Note:

☞ Because playback will use an audio channel, at most 5 microphones can be active when playback.

2.1.3.3 Network Setting

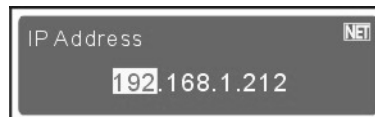"Network Setting" includes three submenus:

→ **"IP address"**

→ **"Subnet Mask"**

→ **"Gateway"**

```
                              NET
1. IP Address    192.168.1.212
2. Subnet Mask   255.255.255.0
3. Gateway       192.168.1.137
```

a) Setting up unique "IP Address" for the main unit:

1). Select "IP address" and press the "Menu" button to go to setup IP address interface:

```
IP Address                    NET
      192.168.1.212
```

2). Use "⇧/⇩" to switch between the four numbers;

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

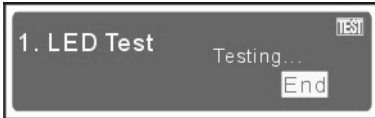**4).** Use "⇧/⇩" to increase/decrease the number;

5). Press "EXIT" to save and return to the upper level menu.

b) Setup "Subnet Mask" and "Gateway"

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

2.1.3.4 Test

Test the LEDs of the conference units.

```
1. LED Test                    TEST
                Testing...
                          End
```

The LEDs on all connected contribution units will blink immediately. Press the "EXIT" button to exit the LED test interface.

2.1.3.5 Active Mic(s) Status

Display the current status of active microphones; include the ID number, gain and lowcut.

ID	1	2	3		
Gain	-12 dB	-2 dB	-10 dB		
Lowcut	On	On	On		

2.1.3.6 Operation Language

Press the "⇧/⇩" button to select an operation language and then press the "MENU" button to confirm.

```
English      中-简      中-繁
```

2.1.3.7 About

CMU information includes: firmware version, corporation information and series number, shown as in the following figure:

```
TAIDEN DCS      HCS-3900MA
Ver: 2.00.01.21   Ser: td0000013f
Gen: Mar 10 2015   13:32:11
```
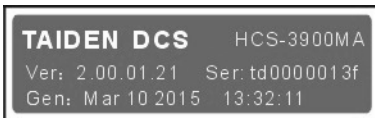
a). Press the "⇩" button to see the version of recording application:

```
TAIDEN DCS      HCS-3900MA
Ver: 2.00.01.21   Ser: td0000013f
RECver: 1.0.2.6
```
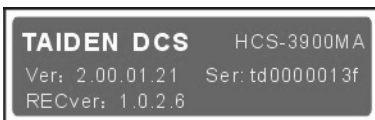
b). Press the "⇧" button to enter the update menu, shown as in the following figure:

```
Ready to update?
        DCSUnit
```

1). Press the "MENU" button to enter and press "⇧/⇩" to select "All" or "Single";

```
Ready to update DCSUnit?
  All            Single
```

2). Press the "MENU" button to confirm and begin update;

```
Prepare update...
```
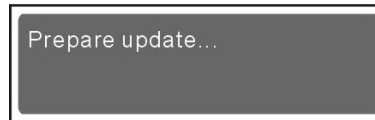
3). When finished, please reboot the CMU.

```
Reboot System
```

2.2 USB Audio

HCS-3900M/20 has a built-in USB Audio (2 Mono channels, 16bit, 32 kHz) which can be connected to the computer through USB cable (software requirement: WindownsXP or higher) for digital audio input/output. In the follow we take Win7 system as an example to introduce the function and operation of the USB Audio.

2.2.1 Installation of USB Audio

Once the HCS-3900M/20 main unit connects to the computer, the HCS-3900M USB Audio will be detected automatically. If it is connected for the first time, the USB device driver will be recognized and installed automatically, as shown in the following figure:

Figure2.8:　Installing USB Audio

After successful installation, the user can check the information of HCS-3900M USB Audio from "Device Manager-Sound, video and game controllers", as shown in the following figure:
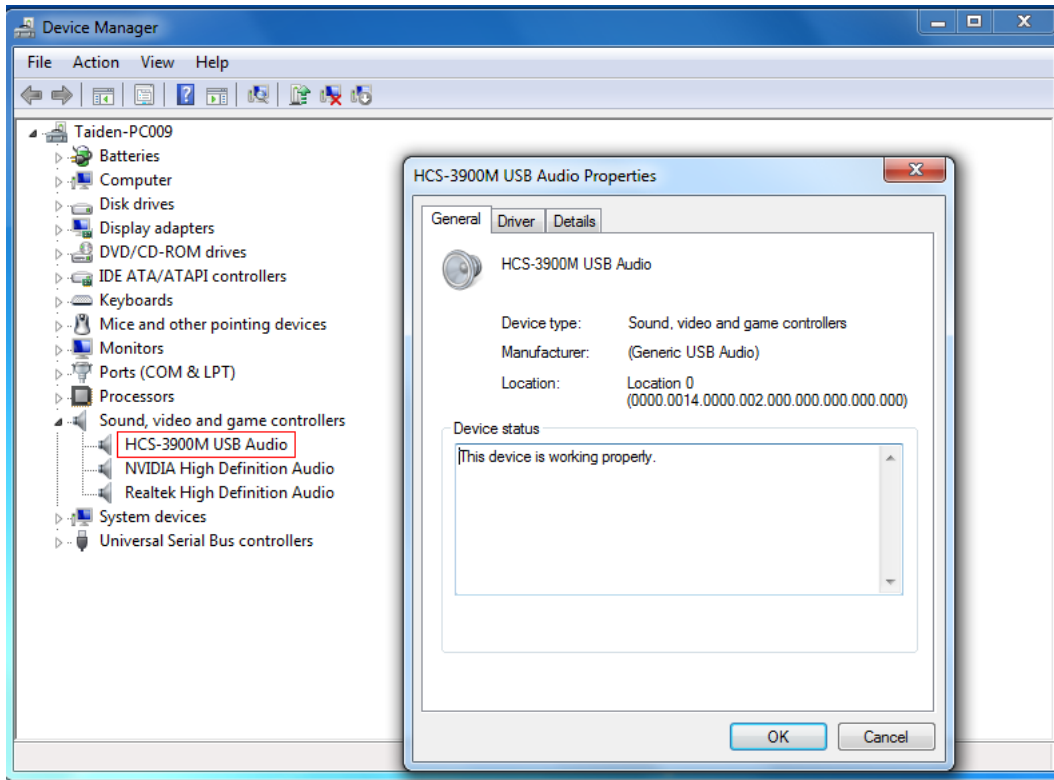
Figurer2.9:　Information of USB Audio

2.2.2 Digital audio input

When the HCS-3900M/20 main unit is connected to the computer, the digital audio can be input. Using the recording software or the third party communication software, such as recorder, Skype or QQ and so on, functions like recording, remote instruction, remote communication can be implemented.

Please adjust and test the HCS-3900M USB Audio to a suitable volume when first using. Adjust method: open the control panel-sound (or right click the volume icon on the taskbar and select sound), and select the Microphone (HCS-3900M USB Audio) and modify its setting on the Recording dialog box. Shown as in the following figure:
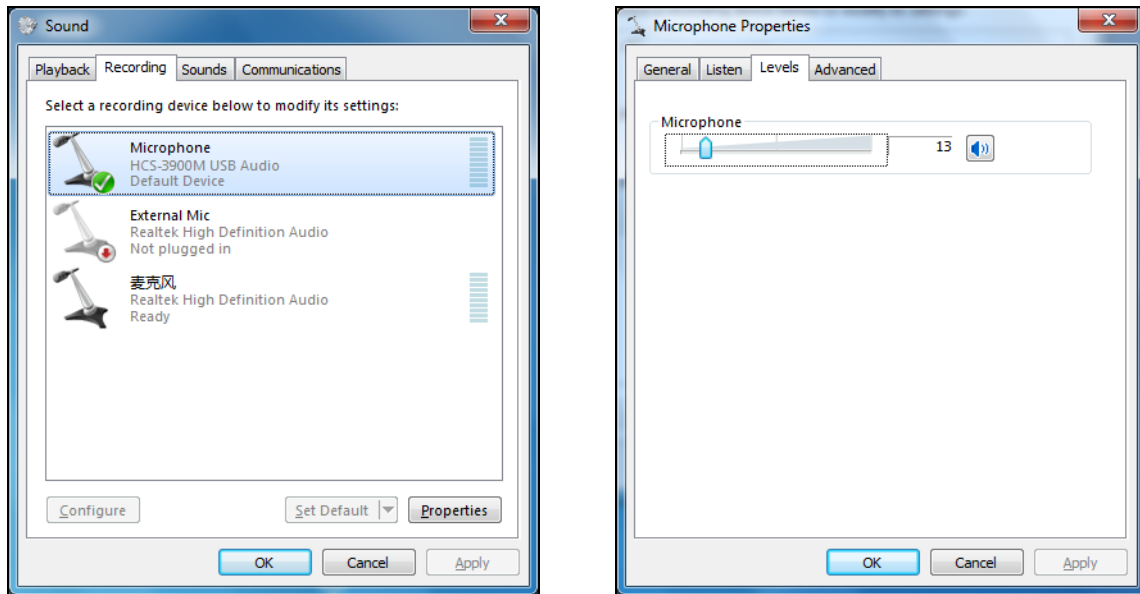
Figurer2.10:   Adjusting microphone volume

Note:

☞ *Too high volume may lead to distortion, so user can confirm a suitable volume through recording and playback when necessary;*

☞ *In "Microphone Properties- Listen", please disable "Listen to this device" (HCS-3900M USB Audio) to avoid have echo.*

☞ *Please select the HCS-3900M USB Audio as the current device on recording or communication. Usually, HCS-3900M USB Audio will be activated instead of the default sound card after connecting to the computer. If there is something wrong in recording, may be the sound card selection made a mistake, please select the sound card manually.*

2.2.3 Digital audio output

The HCS-3900M/20 main unit can be connected to the computer for digital audio output. Please adjust and test the HCS-3900M USB Audio to a suitable volume when first using. Adjust method: open the control panel-sound (or right click the volume icon on the taskbar and select sound), and select the speakers (HCS-3900M USB Audio) and modify its setting in the Playback dialog box, as shown in the following figure:
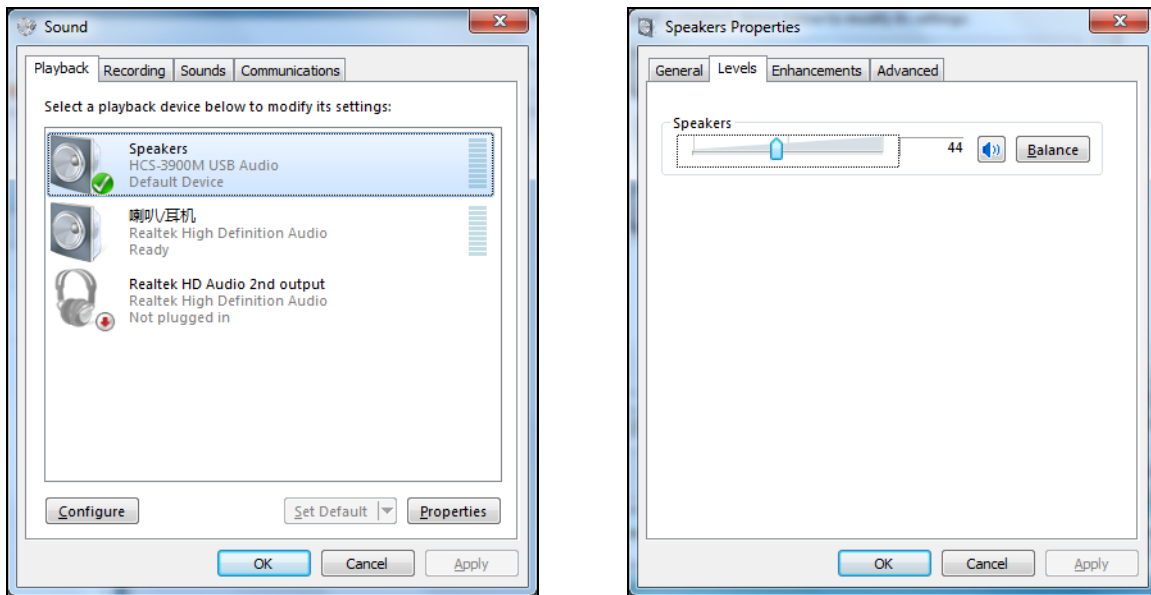
Figurer2.11:   Adjusting playback volume

Note:

☞ *Please select the HCS-3900M USB Audio as the current device on playback. Usually, HCS-3900M USB Audio will be activated instead of the default audio device after connecting to the computer. If there is something wrong about playback, may be the audio device selection made a mistake, please select the HCS-3900M USB Audio manually. Take the Media Player as an example to show the sound card selection:*
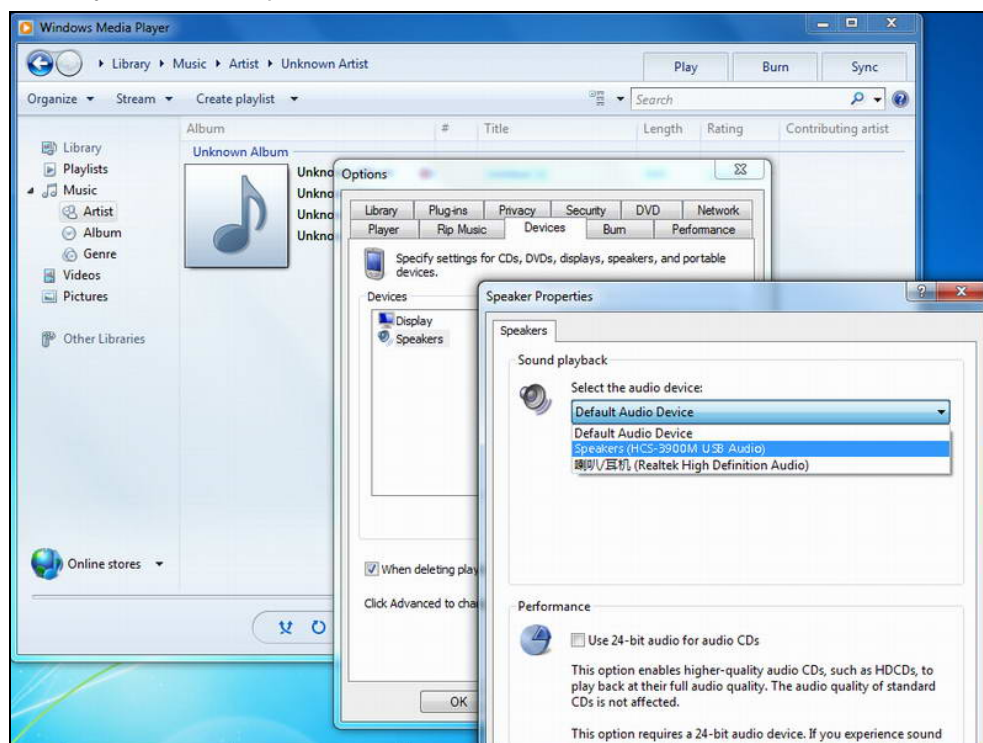
Figurer2.12:   Audio device selection

Chapter 3 Conference units

3.1 Overview

Conference unit is the common name to describe the units used by the attendees to contribute to a conference. The term includes chairman unit, VIP unit and delegate unit.

Product type:

HCS-3938C

Compact Digital Conference System Chairman Unit

HCS-3938D

Compact Digital Conference System Delegate Unit

HCS-3938CF

Compact Digital Conference System Chairman Unit (fixed gooseneck)

HCS-3938DF

Compact Digital Conference System Delegate Unit (fixed gooseneck)

HCS-3940C

Compact Digital Conference System Chairman Unit

HCS-3940D

Compact Digital Conference System Delegate Unit
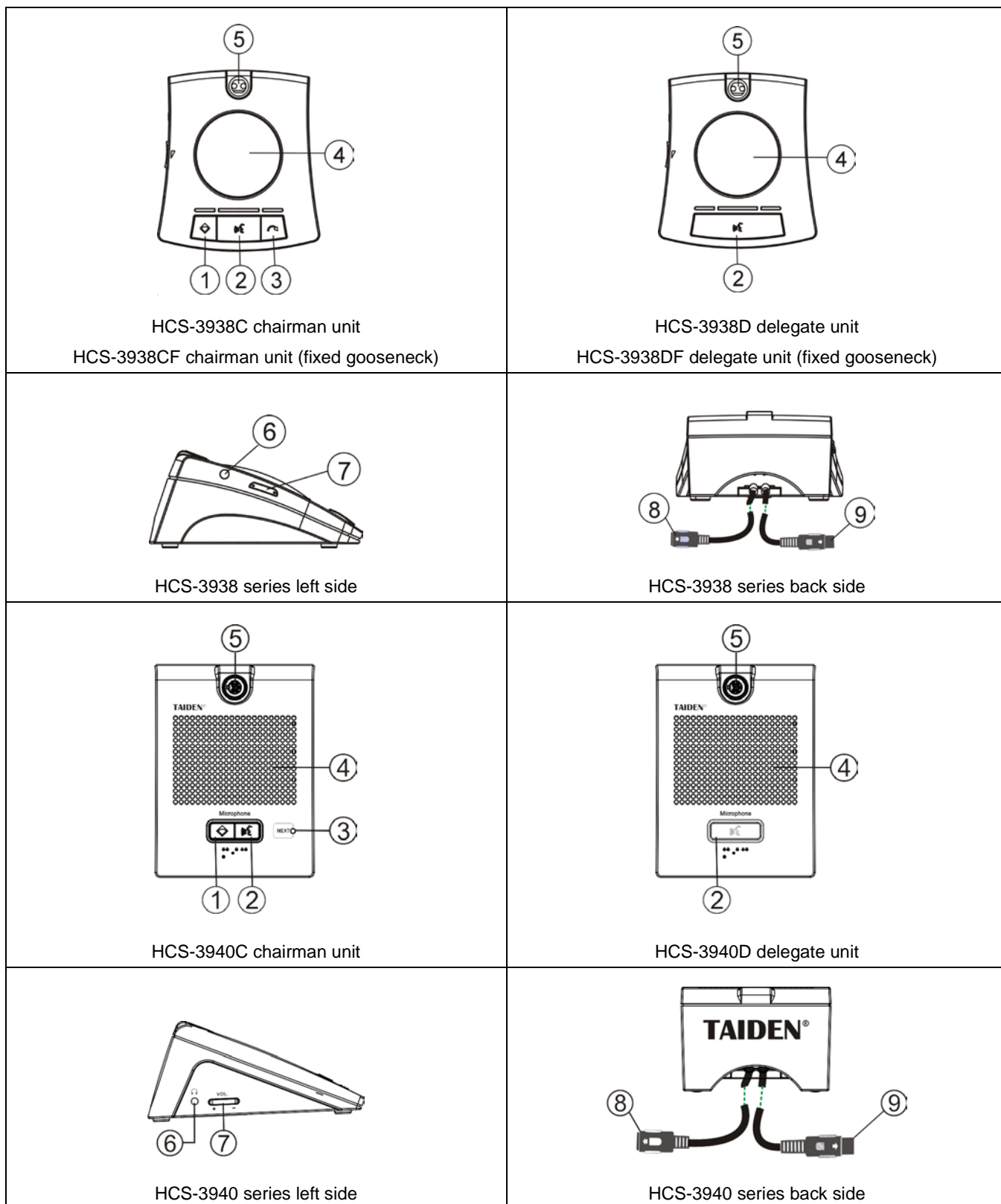
3.2 Functions and instructions

HCS-3938C chairman unit
HCS-3938CF chairman unit (fixed gooseneck)

HCS-3938D delegate unit
HCS-3938DF delegate unit (fixed gooseneck)

HCS-3938 series left side

HCS-3938 series back side

HCS-3940C chairman unit

HCS-3940D delegate unit

HCS-3940 series left side

HCS-3940 series back side

Figure 3.1   HCS-3900 compact digital conference system discussion unit

Figure 3.1:

1.Priority key (for the chairman unit only):

- According to the priority mode configuration on the main unit:

  1. If configured as "Mute All Microphones", all active delegate and VIP microphones will be muted temporarily when this key is pressed and they will resume when the key is released;

  2. If configured as "Turn Off All Microphones", all active delegate microphones will be switched off when this key is pressed. All active VIP microphones will be muted temporarily and will resume when the key is released.

  3. Under "OPEN" and "APPLY" mode, pressing this key will clear the request list (deny all delegates' requests to speak);

- If the chairman microphone is not active, pressing this key will activate it.

2. Microphone On/Off key (for the chairman unit)

   Microphone/request key (for the delegate unit)

- Chairman unit: press this key to activate the microphone and the indicating light;

- Delegate unit: press this key to activate/deactivate the microphone or request/cancel request to speak

(refer to section 3.4 for details).

Work state	Indicating light
Microphone On	Red (on)
Speaking time limit	Red (flash)
First in request list	Green (flash or on, according to setting)
Not first in request list	Green (on)
VIP unit	Yellow (on)

3. Next key with indicator (for the chairman unit only)

- According to the order of requests, press this key once to approve one delegate unit's request and turn off the active delegate microphone at the same time;

4. Built-in loudspeaker

5. Microphone socket (for HCS-3938C/D, HCS-3940C/D)

   Fixed gooseneck (for HCS-3938CF/DF, optional stem length: 410 mm)

6. Earphone jack (Ø 3.5 mm)

7. Earphone volume adjust button

8. 0.6-metre 6P-DIN cable with standard socket (female x 1)

9. 1.5-metre 6P-DIN cable with standard plug (male x 1)

3.3 Connection

3.3.1 Connecting to the CMU

The HCS-3900 compact digital conference system discussion unit is equipped with a 1.5-metre long 6P-DIN cable with a standard male connector. To connect to CMU, just connect the male connector of the first unit to the output of the HCS-3900M/20 main unit.

In case of a long distance between the conference unit and the CMU, use CBL6PS extension cable. One end is equipped with a 6P-DIN male connector and the opposite end with a female connector. Just connect the female connector of the cable to the next conference unit, and connect the male connector to the output of the main unit.
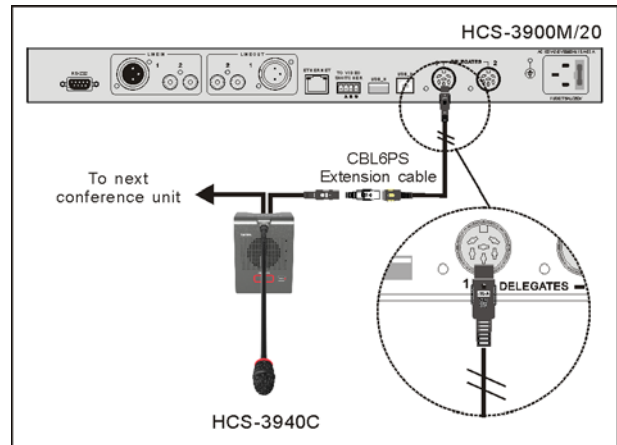

Figure 3.2　HCS-3900 compact digital conference system discussion unit connected to the CMU

3.3.2 Connection between conference units

HCS-3900 compact digital conference system discussion units are daisy-chained easily. When connecting to another 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.
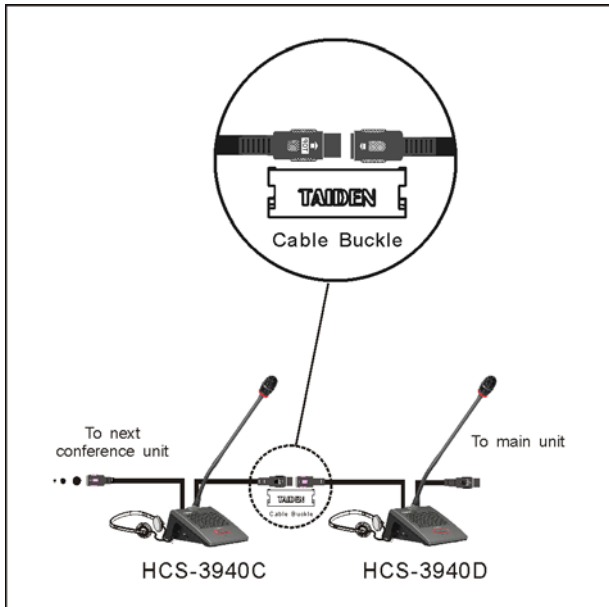
Figure 3.3   Connection between HCS-3900 compact digital conference system discussion units

3.3.3 Connection with external earphone

An external earphone can be connected to the external earphone jack at the lateral side of the conference unit. Its volume can be adjusted by the earphone volume adjust button. The external earphone shall have a Ø 3.5 mm plug, as in the following figure:
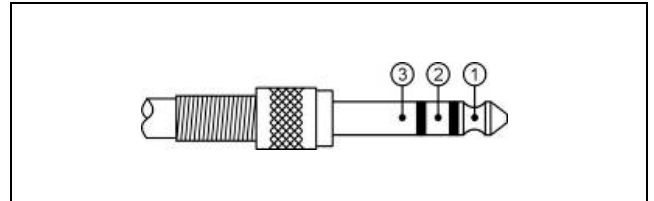
Functions and indications:

1............................Left stereo channel signal
2............................Right stereo channel signal
3............................Power ground/Shield

3.4 Operation

Before a meeting starts, the conference units need to be configured by the operator, including: numbering and testing. During the meeting, the participators use the conference unit to activate microphone, request to speak, etc..

3.4.1 Delegate unit

1. Number

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

After selecting "Unit(s) Numbering" with the "MENU" key, "Press keys one by one" will displayed on the OLED and all the LED indicators on the contribution units connected will blink. Now press the "Mic ON/OFF" keys on the contribution units one by one to number each unit, the button indicating light will be deactivated. Once all conference units are numbered, restart the CMU to update the number information.

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

2. Speaking

Speaking mode is configured on the CMU (refer to section 2.1.4).

A. "Open" mode

■ Active microphone number limitation (1/2/3/4) **NOT reached**:
  a. The microphone will be activated when the microphone ON/OFF key is pressed. The speaker can give his/her speech;
  b. The microphone will be deactivated when the microphone ON/OFF key is pressed again.

■ Active microphone number limitation (1/2/3/4) **reached**:
  a. Press the microphone ON/OFF key to request to speak;
  b. Press this key again to cancel the request to speak;
  c. When an active microphone is turned off, the first request microphone will be activated.

B. "Override" mode

■ Active microphone number limitation (1/2/3/4) **NOT reached**:
  a. The microphone will be activated when the microphone ON/OFF key is pressed;
  b. The microphone will be deactivated when the microphone ON/OFF key is pressed again.

■ Active microphone number limitation (1/2/3/4) **reached**:
  If the microphone ON/OFF key is pressed, its microphone will be activated and the first activated microphone will be deactivated at the same time to maintain the active microphone number limitation. If the number of active microphone (including chairman and VIP unit) reaches 6, turning on another microphone will switch off the delegate microphone turned on first.

C. "Voice" mode

■ Active microphone number limitation (1/2/3/4) **NOT reached**:
  a. The microphone ON/OFF key indicating light remains on. When the delegate speaks into the microphone at a short distance, the microphone will be activated;
  b. If the delegate does not speak during the set time, the microphone will be deactivated automatically;
  c. When the microphone is activated, it can be turned off by pressing the microphone ON/OFF key. When the delegate wants to cough or does not want to talk, press and hold on the microphone ON/OFF key to mute microphone temporarily. If the delegate wants to talk, just release the key and speak to it closely.

- Active microphone number limitation (1/2/3/4) **reached**:

  All other microphones cannot be activated unless one of the active microphones is turned off.

D. "Apply" mode

a. Request to speak when the microphone ON/OFF key is pressed (6 microphones at most). The chairman unit can approve or reject his/her request;

b. When his/her request is approved, he/she can speak and the active one will be turn off at the same time;

E. "PTT" mode

- Active microphone number limitation (1/2/3/4) **NOT reached**:

  a. The microphone will be activated when the microphone ON/OFF key is pressed. The speaker can give his/her speech;

  b. The microphone will turn off when the microphone ON/OFF key is released.

- Active microphone number limitation (1/2/3/4) **reached**:

  Other microphone will not be turn on until any active microphone turn off.

Note:

☞ "Voice" speaking mode: the chairman unit and the VIP unit count in the active microphone number limitation (1/2/3/4), if the active microphone number limitation reached, the microphones of the chairman unit and the VIP unit cannot be turned on;

☞ Other speaking mode: the chairman unit and the VIP unit do not count in the active microphone number limitation (1/2/3/4), at most 6 microphones can be activated at the same time in a system.

A camera can focus an activated microphone automatically (camera position preset by Web page). Speaker's video can be exported to and displayed on large screen(s).

3. Volume control

- The volume of the built-in loudspeaker can be adjusted by the master volume control knob on the main unit or by menu operation on the CMU front panel or by the Web page;

- When the earphone is plugged, its volume can be adjusted by the earphone volume control on the lateral side of the unit.

4. VIP unit

- Any delegate unit can be assigned as a VIP unit by the CMU. At most 32 VIP units can be assigned;

- As long as the active microphone capacity is not full, the microphone of the VIP unit can be activated freely;

- If the active microphone capacity is full, the microphone of the VIP unit cannot be turned on unless one of the active microphones is deactivated;

- If the priority mode is configured as "Turn Off All Microphones", all active delegate microphones will be turned off when the chairman presses his priority key, and all active VIP microphones will be muted temporarily. They will resume when the chairman releases his priority key.

3.4.2 Chairman unit

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

1. Priority

- If the priority mode on the main unit is configured as "Mute All Microphones", all active delegate and VIP microphones will be muted temporarily when this key is pressed and they will restore when this key is released;
- If configured as "Turn Off All Microphones", all active delegate microphones will be turned off and the request-to-speak list will be purged when this key is pressed. All active VIP microphones will be muted temporarily when this key is pressed and they will resume when this key is released.

2. Speaking

- If the active microphone capacity is not full, the chairman can activate his/her microphone normally, the operation is the same as for the delegate unit (refer to section 3.4.1).
- If the active microphone capacity is full, the chairman cannot activate his/her microphone. But he/she can use the "Priority" key to "Mute All Microphones" or "Turn Off All Microphones" and give his/her speech.

3. Controlling delegate unit

A. Approve delegate unit's request to speak

Under "Apply" mode, when a delegate requests to speak, both the Mic indicating light and the NEXT key indicator of the chairman unit will blink. At most 6 microphones can request at the same time.

The chairman can reject delegate's request by pressing the priority key ($\diamondsuit$).

The chairman also can approve delegate's request and activate delegate's microphone by pressing the next key ($\frown$ / NEXT). According to the order of requests, press the next key once to approve one delegate unit's request and turn off the active delegate microphone at the same time.

B. Turn off or mute delegate microphone

The chairman can use the "Priority" key to execute "Mute All Microphones" or "Turn Off All Microphones" operation.

Chapter 4 System connection

4.1 Summary

HCS-3900 Compact Digital Conference System has a simple but efficient structure. Its installation is simple, quick and does not need special training. Daisy-chain connection is adopted between conference units as well as to CMU via dedicated extension cable.

TCP/IP protocol is adopted for Ethernet connection between the CMU and the PC. As a result remote control and remote update can be achieved. Access the CMU through Web page, operator can control the conference neatly.

In this chapter, the connections of HCS-3900 Compact Digital Conference System are introduced by diagrams.

4.1.1 Connection principles

The Conference Main Unit forms the core of the entire conference system. It provides power supply to all contribution units and serves as key component to link system hardware to Web page control.

The conference unit is powered by the CMU, and up to 52 conference units can be connected within one system (refer to table 4.1). Any delegate unit can be set as VIP unit. As long as the number of active microphones in the system is less than 6 (including chairman, delegate and VIP), a VIP microphone can be activated freely (except Voice mode).

The CMU can work alone to achieve basic control functions; when through Web page to access the HCS-3900MA/MB, more powerful and versatile management and control functions are accessible.

4.1.2 Connection cables

HCS-3900 Compact Digital Conference System conference unit is equipped with a 1.5 m 6P-DIN standard plug cable and a 0.6 m 6P-DIN socket cable. When the units are connected one by one, connect the first unit to the outlet connector of the CMU, and following 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 - thus contribution units are daisy-chain connected. CBL6PS extension cables can be used between contribution units and the CMU.

4.1.3 Extension cable

If the distance between the CMU and the contribution unit or one contribution unit to another one exceeds 2.1-metre, an extension cable is needed. Due to the voltage drop in the extension cable caused by the ohmic resistance, the number of contribution units available for each outlet connector will be reduced according to the length of the cable connected to trunk-line. The relationship is described as table 4.1:

The extension cable connected between the CMU and the first contribution unit carries the current of all subsequent units and influences at the same time the maximum possible load of the CMU. However, the influence of a cable connected between the last two contribution units, is insignificant because it carries only the current for the last unit.

Table 4.1　Quick lookup table of HCS-3900M CMU/EMU load capability　（unit：piece）

Type No.	The extension cable length between the CMU and the first Congress Unit connected to the socket			
	20 m	40 m	60 m	80 m
HCS-3900MA/20	26	25	24	22
HCS-3900MB/20	26	25	24	22

4.2 Connection between the CMU and the contribution units

All contribution units of HCS-3900 system adopt dedicated 6-pin cable and are daisy-chained, which makes the installation handy and effortless.

Connect the first unit to the outlet connector of the CMU, and following connect the plug of the cable of the second unit to the socket of the first unit. Proceed one by one in a series configuration. CBL6PS extension cables can be used between contribution units and the CMU. As shown in the figure 4.1.
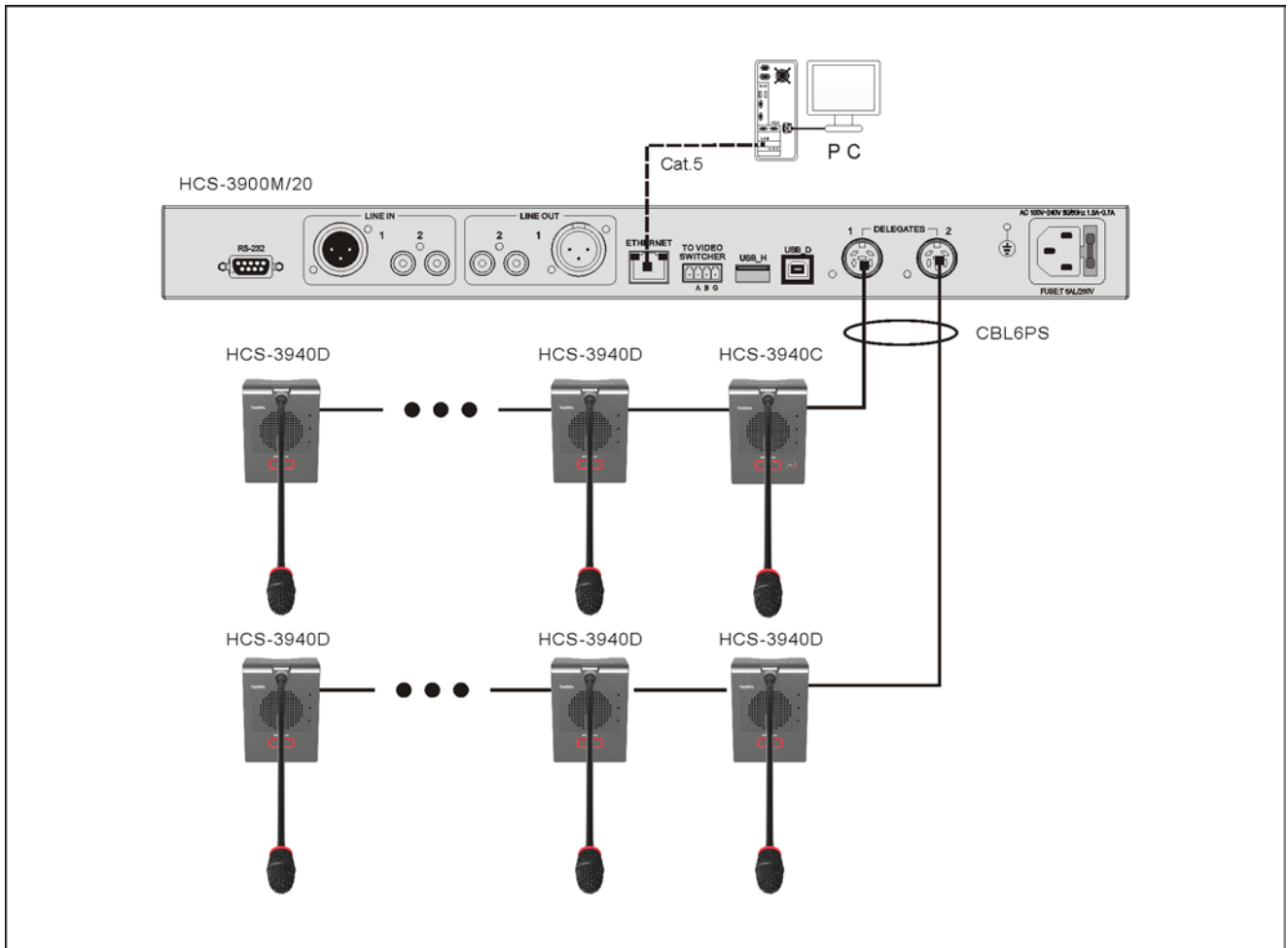
Figure 4.1   Connection between the CMU and the conference units

4.3 Connection between CMU and automatic video tracking system

HCS-3900 series Compact Digital Conference System can be connected to an automatic video tracking system. For video tracking purposes, the Web page control can set camera presets for every conference unit. If the conference unit is switched on, video tracking system will automatically find the appropriate preset and focus on the speaker. The view of the speaker will be displayed on large screen or other display devices. The automatic video tracking system is compatible with several kinds of video signals and operates automatic video switching. The video tracking system is composed of video switcher, button board and high-speed dome camera.

Use a RS-485 cable and connect HCS-3900 Main unit (port "TO VIDEO SWITCHER") to the corresponding port at the rear panel of the video switcher as shown in the following figure.
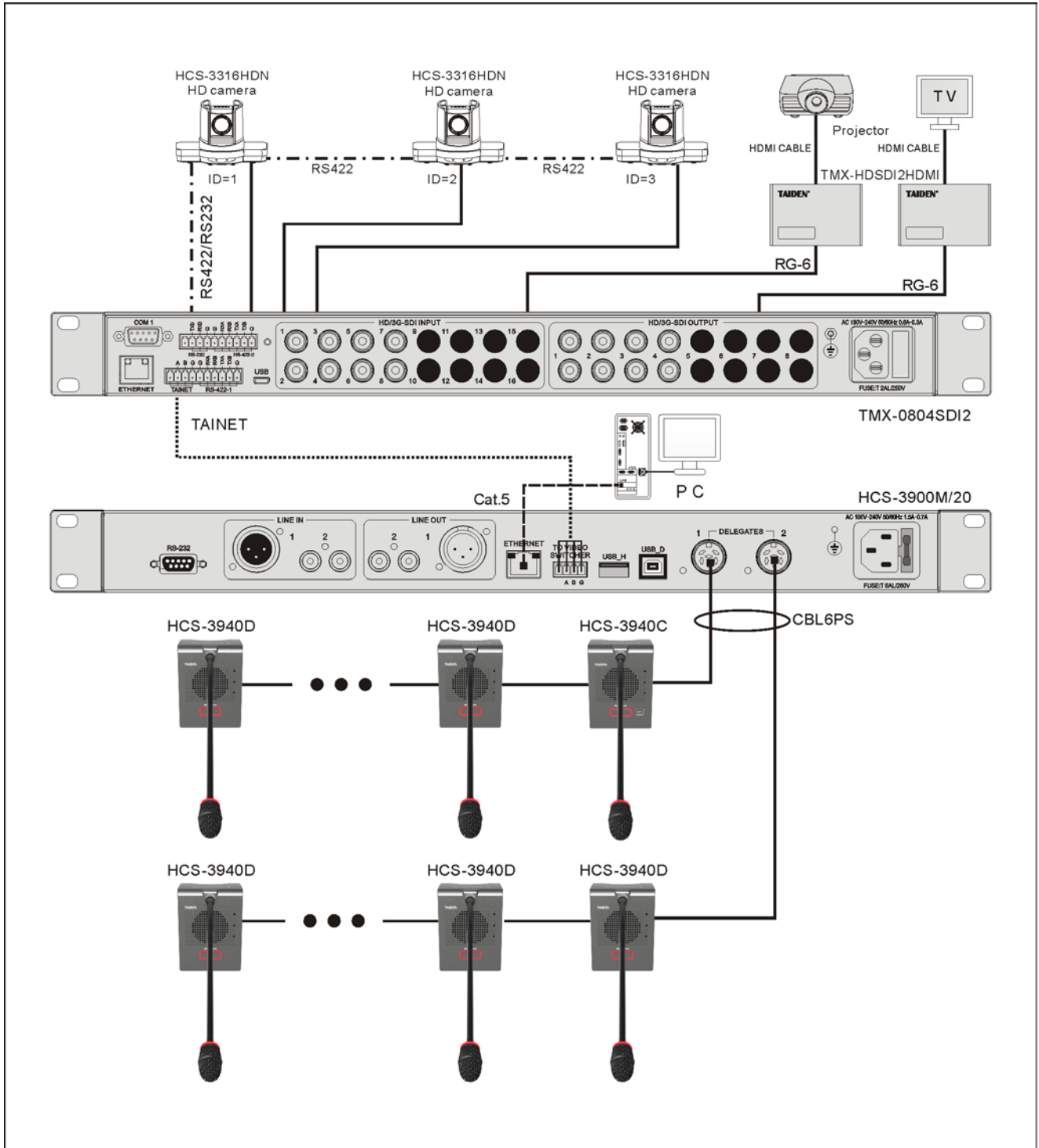
Figure 4.2   Connection between CMU and automatic video tracking system

4.4 Connection between CMU and network central control system

TAIDEN intelligent central control system is an advanced comprehensive control system. It can link together various devices, hardware and environment equipment from different manufacturers. The central control system can operate the conferencing devices through wired Ethernet or wireless bidirectional communication by wired/wireless touch panel. Features include power controlling, environment light adjustment and on-off, electric curtain or projector screen open-close and on-off, system PA volume controlling and controlling various electric devices, such as DVD, VCR, TV, projector, etc. RS-232C or RS-485 interfaces are available. Remote controlling, even from distant places, can be achieved through LAN or internet.

TAIDEN HCS-6100 network central control system and **TAIDEN** HCS-3900 series conference system can be joined together seamlessly. In addition to standard functions of a normal central touch panel control system, it can also control:

♦ Switch on/off microphone of conference unit;

♦ Control video camera;

If using **TAIDEN** intelligent central control system touch panel to control conference units, ID of each conference unit should be known.

The connection of HCS-3900 series conference system and the network central control system is shown in figure 4.3.
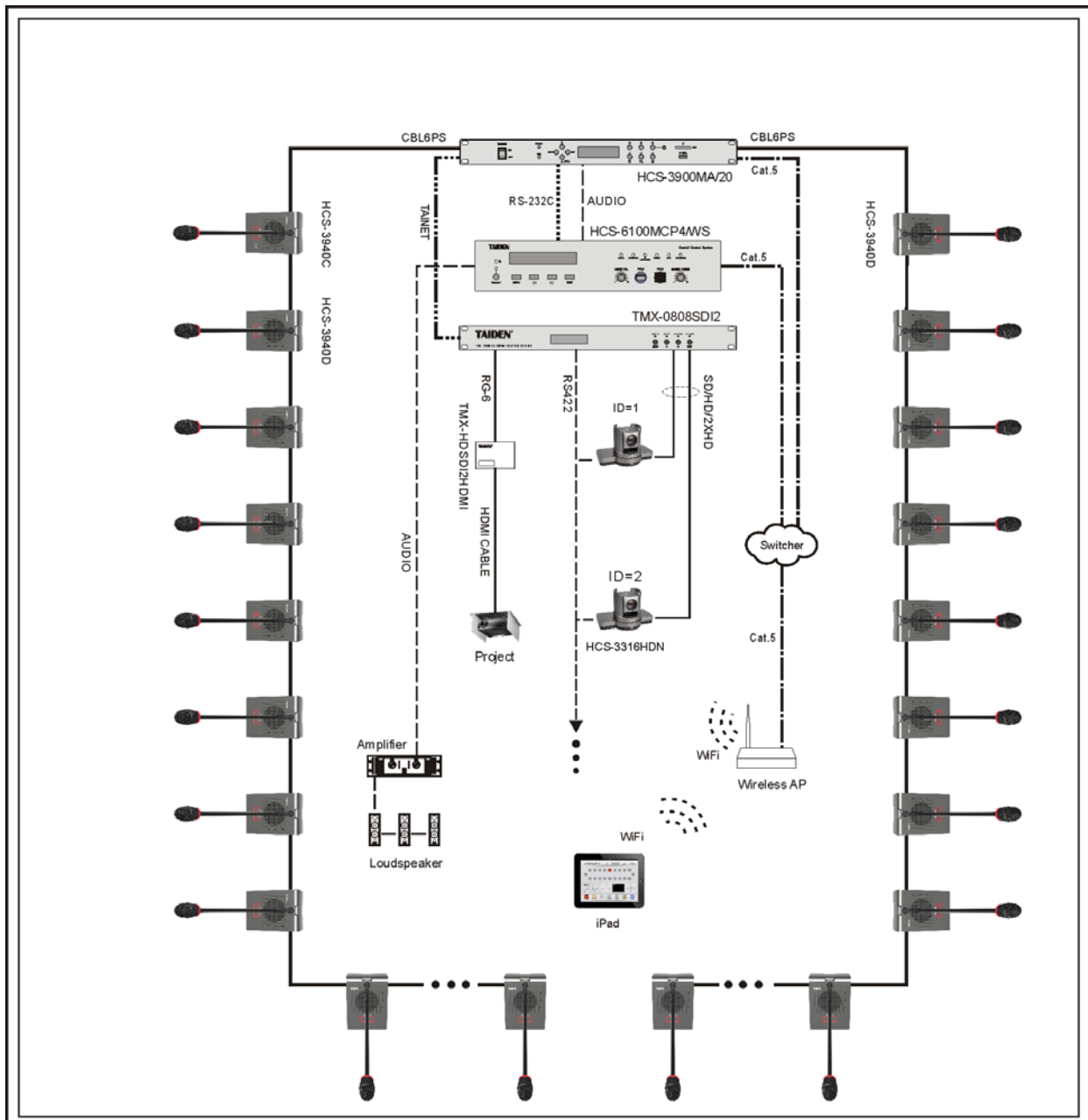

Figure 4.3   Connection between CMU and network central control system

Chapter 5 Web control

Running environment: browser for Firefox, Google, IE10 or higher.

5.1 Login and exit

The user inputs the IP address of CMU into the Web browser to login. The default UserName is "admin" and default Password is "123456", the password can be changed after login. The default username is administrators that can not be deleted. The login interface is shown in the following figure:
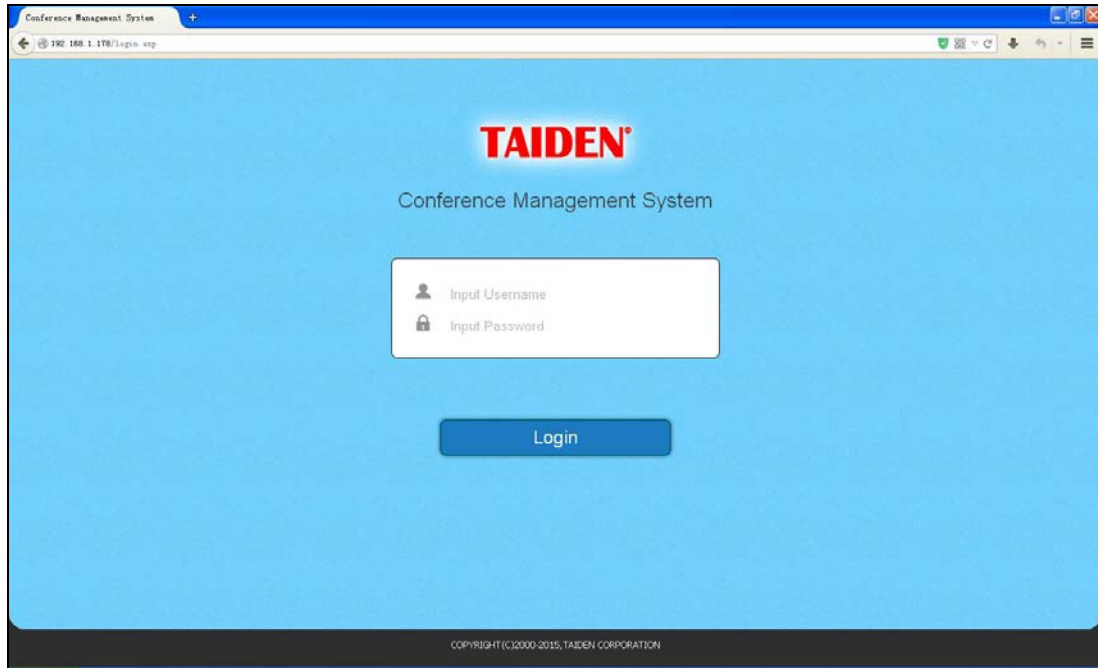

Figure 5.1   Login

Input the UserName and Password, then click the "Login" button and it will enter the conference management system interface automatically.
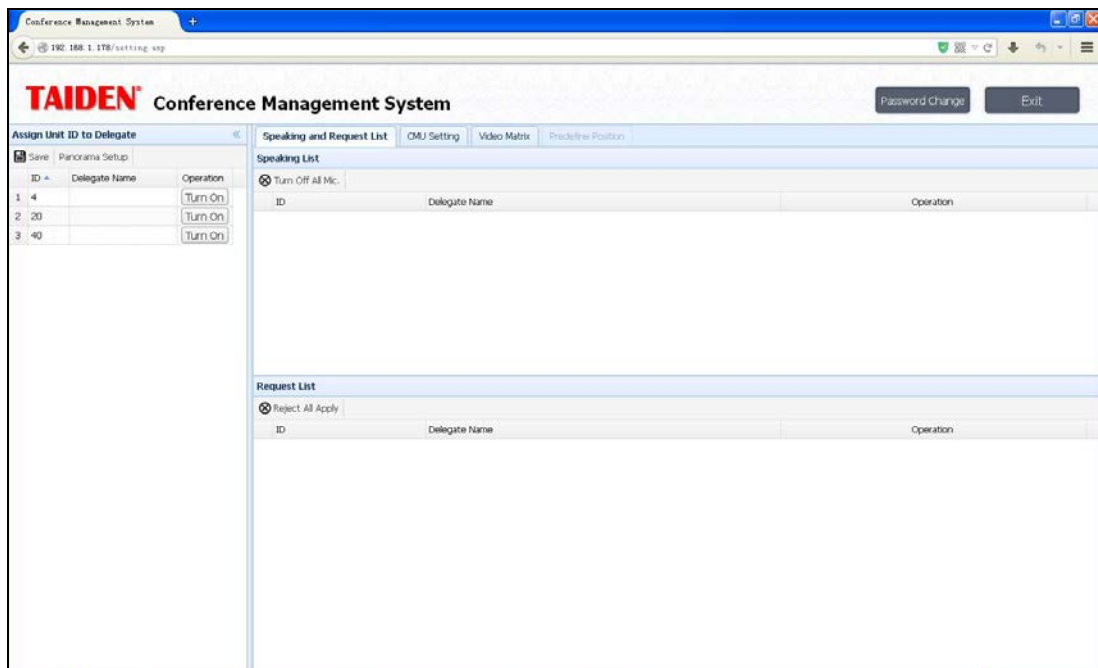
Figure 5.2   Conference Management System

There are two buttons in the right top of the interface:

- **Password Change:** click this button and the below dialog box is shown:

Input the Old Password, New Password and Password Confirm, then click the "OK" button to change the password.

- **Exit:** exit the conference management system.

5.2 Conference management

On the left of conference management system interface is Assign Unit ID to Delegate which can be hided by clicking the "<<" button, on the right there are CMU Setting, Speaking and Request List, Video Matrix and Predefine Position, etc..

5.2.1 Assign Unit ID to Delegate

It will list all ID of connective units in the system. User can assign them to delegates, open microphones, set up the camera predefine position, etc.. The interface is shown in the following figure:
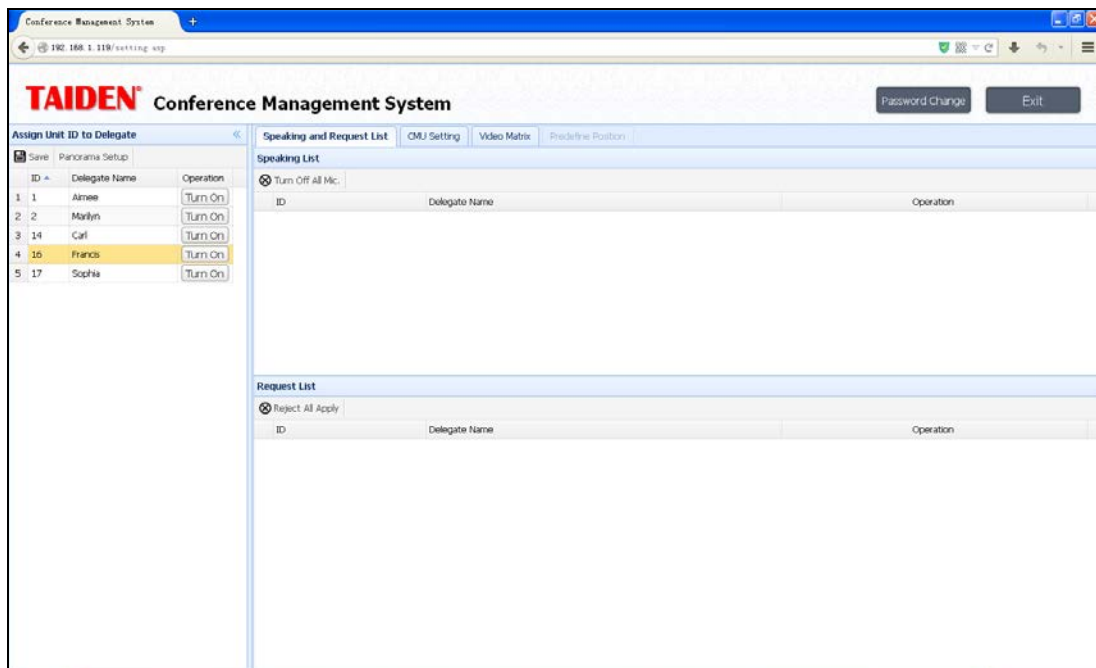

Figure 5.3   Assign Unit ID to Delegate

- **ID:** IDs of all microphones, can be listed in ascending or descending order by clicking the triangle icon;
- **Delegate Name:** double click and input a name (at most 128 characters) to assign the unit to the delegate;
- **Operation:** turn on the microphones:

  "Turn On":   click this button to open the microphone;
- **Panorama Setup:** set up the Panorama (refer to 5.2.5);
- **Save:** save the delegate names and predefine position setup.

5.2.2 Speaking and Request List

Speaking and Request List displays the information of the active and requested microphones, includes Mic. ID and delegate name. It also can turn off the microphones, accept or reject the requests.
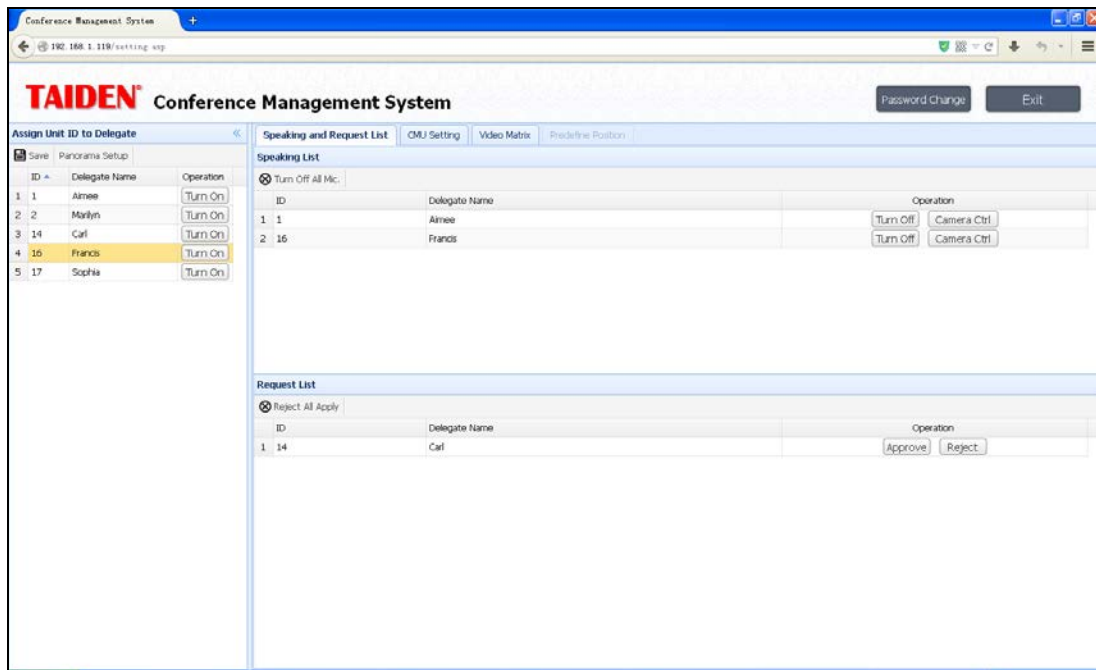

Figure 5.4   Speaking and Request List

- ■   **Turn Off All Mic.:** turn off all the microphones on the speaking list and request list;
- ■   **Turn Off:** turn off the selected microphone;
- ■   **Camera Ctrl:** click this button and set up the camera predefine position on the right side (refer to 5.2.5).
- ■   **Reject All Apply:** reject all the requests on the list;
- ■   **Approve:** accept the selected unit's request, after clicking, the microphone is active and its information will be displayed on the speaking list;
- ■   **Reject:** reject the selected unit's request.

5.2.3 CMU Setting

CMU Setting includes Operation Mode, Active Microphones, Loudspeaker Volume and Speech Timing. The CMU Setting interface as shown in the following figure:
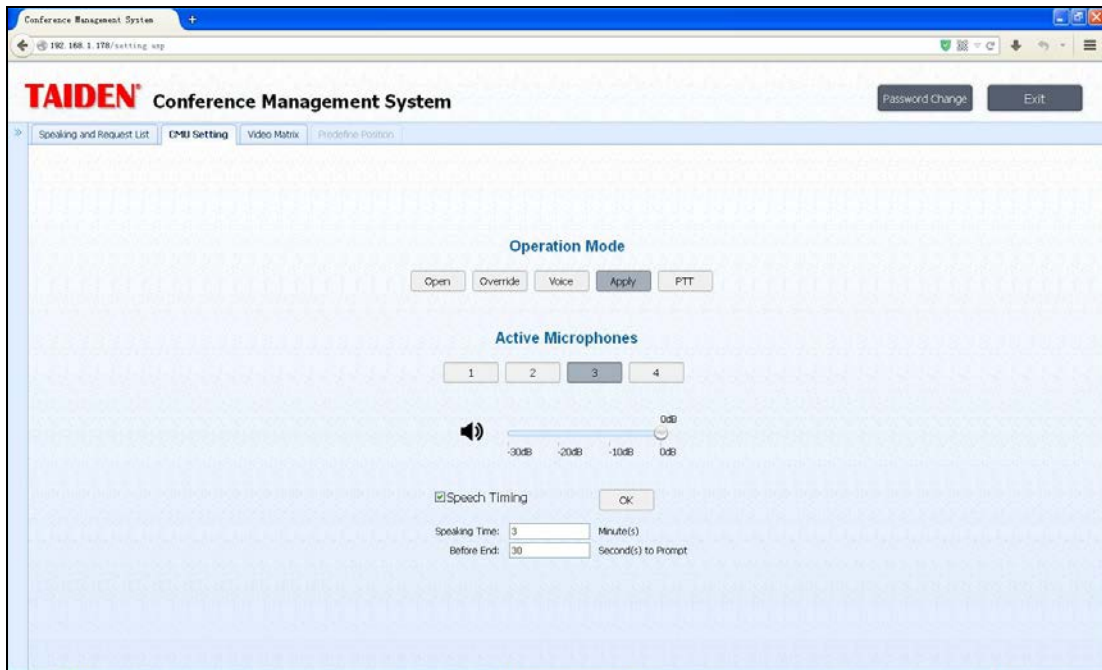

Figure 5.5   CMU Setting

■   **Operation Mode:** set up the speaking mode, include Open/ Override/ Voice/ Apply/ PTT;
- ♦   **"Open":** if the number of active microphones reaches the limit, the rest of the delegate microphones enter the request-to-speak state and the operator can approve the request;
- ♦   **"Override":** if the number of active delegate microphone reaches the limit (1/2/3/4), turning on another delegate microphone will switch off the delegate microphone turned on first: delegates speak in FIFO mode; if the number of active microphone (including chairman and VIP unit) reaches 6, turning on another microphone will switch off the delegate microphone turned on first;
- ♦   **"Voice":** voice control mode, the microphone On/Off is controlled by voice: participator speaks towards the microphone and turns it on. In case of a speech pause, the microphone will turn off automatically;
- ♦   **"Apply":** apply mode, the delegate applies to speak by pressing the microphone ON/OFF key. The delegate can only speak when the operator or the chairman approved his application;
- ♦   **"PTT":** When the delegate presses and holds the microphone ON/OFF button, the microphone will be activated; when the microphone ON/OFF button is released, the microphone will be deactivated.
■   **Active Microphones:** the number of maximum active microphones (1/2/3/4 pcs);
■   **Volume:** drag the dollop to adjust the volume (-30 dB to 0 dB) of the loudspeakers of HCS-3938 units, or click the loudspeaker icon to mute them;
■   **Speech Timing:** tick the "Speech Timing", input the speech time and end prompt time and then click the "OK" button to save.
    Note:
    Speech Timing setting is only available for delegate units.

5.2.4 Video Matrix

It includes Video Matrix and Video Switch. The matrix, TMX-0804, is a high definition video matrix which includes one 8x4 video matrix.

5.2.4.1 Video Matrix

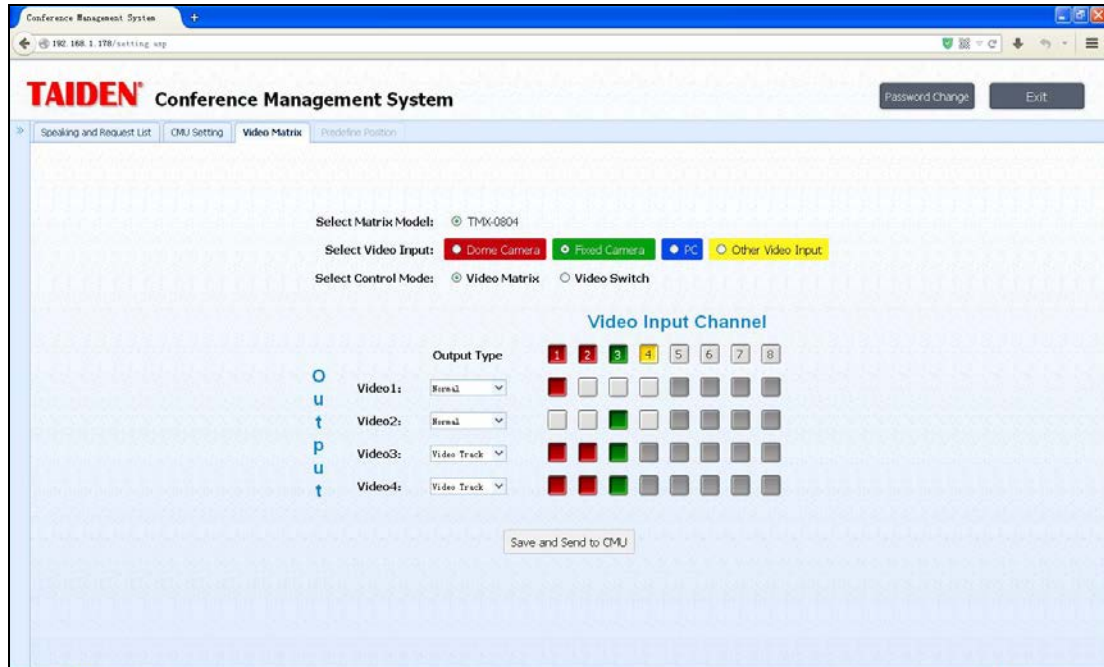The setup of Video Matrix interface is shown in the following figure:

Figure 5.6   Video Matrix

- ■ **Select Video Input:** include Dome Camera, Fixed Camera, PC and Other Video Input;
- ■ **Output Type:** include Normal and Video Track:
- ■ **Save and send to CMU**

TMX-0804 matrix setup:
1. Assign video input type according to the actual situation;
2. Assign video output type;
3. Assign output channel for "normal" video output by clicking on the cross point of input and output;
4. Click "Save and Send to CMU" button to save current video matrix.

5.2.4.2 Video Switch

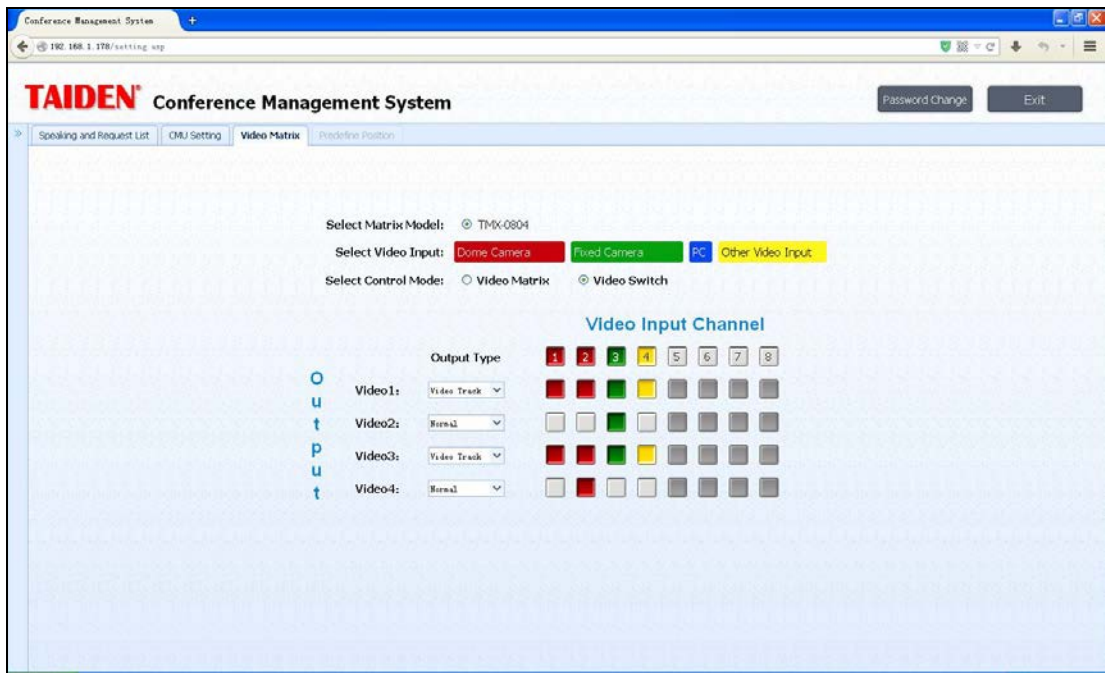The interface of Video Switch is shown in the following figure:

Figure 5.7   Video Switch

TMX-0804 matrix switch:

1. According to the setup of video matrix, the video input type will be displayed automatically;
2. Assign corresponding output channel by clicking on the cross point of input and output;
3. Select "Video Track" under video 1~4 output line doubler, the selected output channel will be switched to the video track.

5.2.5 Predefined Position

If the conference system is equipped with cameras, the system can carry out automatic video tracking, i.e. display the image of the speaking participator to the display devices (large screen, TV, and so on). Predefine Position is to set the predefined position of each microphone.
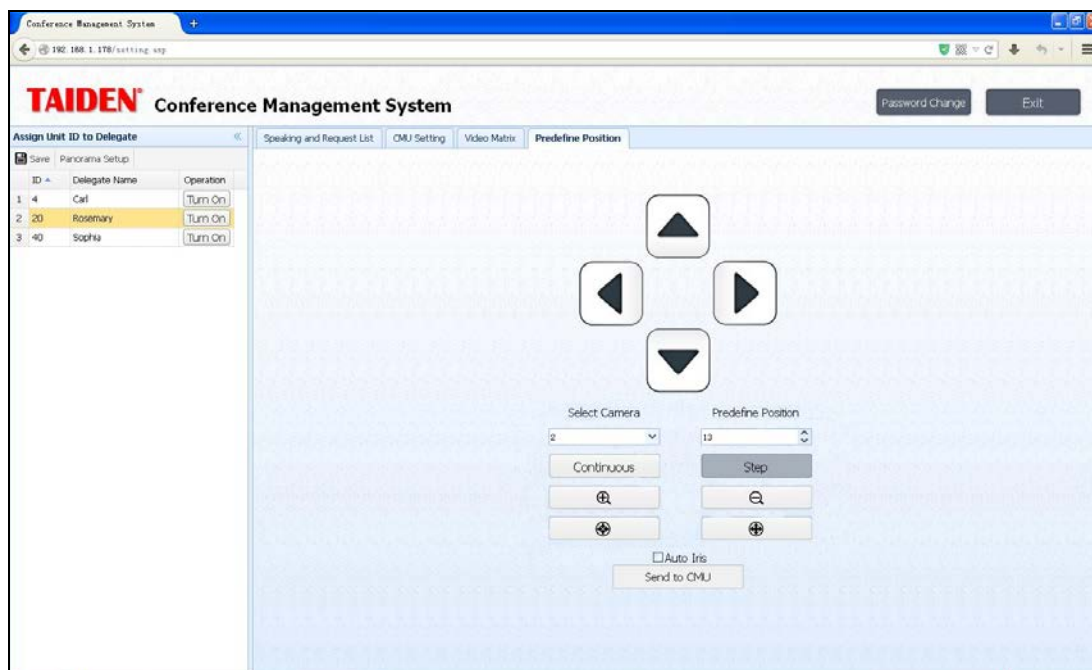

Figure 5.8   Predefine Position

■ **Microphone predefined position setup:**
   1． Select a microphone on the speaking list, then click the "Camera Ctrl" button to open the "Predefine Position" interface;
   2． Select the proper camera in the Select Camera combo box (since each conference can be equipped with multiple cameras, the operator shall select the proper camera to give the best image of each participator);
   3． Select the predefine position number (each camera can accommodate 64 positions);
   4． Adjust the camera angle by the four direction buttons, and click zoom in/out button to adjust the size of the video image;
   5． Click the "Send to CMU" button to send the current predefined position to CMU if the adjustment is done;
   6． Repeat the above steps to set the predefined position for other seats/microphones;
   7． Click the "Save" button on the left top side to save the setup above.

During the conference, if all microphones are configured with predefined positions, the camera will aim at the speaking participator automatically (when video tracking setting in menu of main unit is "turn on"), i.e. automatic video tracking.

Note:

If the camera with auto iris, you can select the "Auto Iris" that is applied for all predefined positions. If "Auto Iris" option is checked, then all predefined positions will use auto iris; if not checked, the iris for each predefined position can be adjusted and saved respectively.

■ **Panorama setup:** select proper camera and predefine position number, then adjust the camera angle by the four direction buttons, and click zoom in/out button to adjust the size of the video image, then click the "Send to CMU" button to sand the panorama to CMU if the adjustment is done, at last, click the "Save" button on the left top side to save the setup.

Chapter 6 Accessories

6.1 Pluggable stem microphone

● MS33/41/47EGE1B/S stem microphone

Functions and instructions:

1. Electret condenser cardioid microphone

2. Two-color microphone on/off LED ring

Work state	Indicating light
Microphone On	Red (on)
Speaking time limit	Red (flash)
*First in request list	Green (flash or on)
*Not first in request list	Green (on)

*Note: The * according to the setup of "Mic LED Setting" menu on the front panel of CMU.*

3. Metal stem with goose-neck to adjust angle and direction freely

4. Socket with screw thread. The stem microphone can be removed and collected during the adjournment

6.2 6-pin dedicated extension cable

● CBL6PS 6-pin dedicated extension cable

- ①. Female
- ②. Male
- Seven types are available: 3-meter, 5-meter, 10-meter, 20-meter, 30-meter, 40-meter and 50-meter.

6.3 Earphones

The jack plug of the stereo headphone can be inserted into a Ø 3.5 mm stereo headphone jack socket. Applicable types include:

● EP-820AS Single earphone

● EP-830 Single earphone

● EP-960BH Interpreter headset (stereo)

● HCS-5100PA Headphone

● Other compatible types please refer to chapter eight.

Chapter 7 Working environment and maintenance

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

7.1 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 and the interpreter units are 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.

Due to the directivity of the microphone used in the discussion units, every speaker should face the microphone at a convenient distance when speaking, to achieve both best audibility and intelligibility.

7.2 Technical rooms

It is recommended to meet the following conditions for technical rooms where HCS-3900 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 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!

7.3 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.

7.4 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.

7.5 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 8 Technical specifications

8.1 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 with EN 60065
EMC emission: Compliant with EN 55022
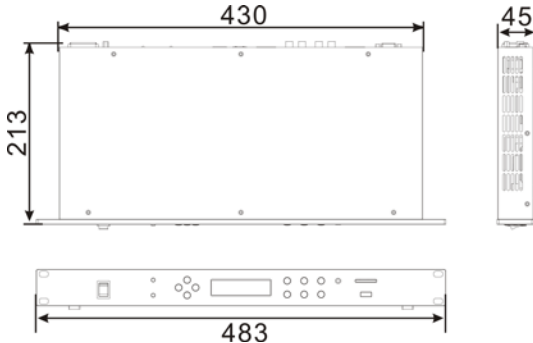**EMC immunity:** Compliant with EN 55024
EMC approvals: CE, FCC
Power harmonic: Compliant with EN 61000-3-2
Voltage fluctuations and flicker: Compliant with EN 61000-3-3

8.2 Conference system main unit

8.2.1. Main unit

8.2.1.1 Physical characteristics

Conference system main unit	HCS-3900MA/MB/20
Installation	Tabletop
Dimensions (mm)	
Color	Grey
Weight	3.2 kg

8.2.1.2 Electrical characteristics

Conference system main unit	HCS-3900MA/MB/20	
Microphone capacity	≤ 255	
Frequency response	40 -16000 Hz	
SNR	≥ 90 dBA	
Dynamic range	≥ 94 dB	
Total harmonic distortion	≤ 0.05%	
Mains power supply	100 -240 V AC, 50/60 Hz	
Audio input	LINE IN 1: +18 dBu balanced	LINE IN 2: +18 dBu unbalanced
Audio output	LINE OUT 1: +18 dBu balanced	LINE OUT 2: +18 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	152 W	
Connection	Dedicated cable (6 PIN)	
Connector	DIN6P with buckle	

8.3 Conference unit

8.3.1 HCS-3938、HCS-3940 series conference unit

8.3.1.1 Physical characteristics

Conference unit	HCS-3938 series	HCS-3940 series
Installation	Tabletop	
Dimensions (mm)	* HCS-3938CF/DF with fixed gooseneck	
Color	Charcoal gray	
Weight (Incl. Mic.)	0.9 kg	0.75 kg (excl. stem microphone)

8.3.1.2 Electrical characteristics

Conference unit		HCS-3938 series	HCS-3940 series
Output frequency response		40 - 16000 Hz	40 - 16000 Hz
Earphone load		≥ 16 Ω	≥ 16 Ω
Earphone volume		10 mW	10 mW
Earphone output		Ø 3.5 mm stereo jack	Ø 3.5 mm stereo jack
Max. power consumption		2 W	2 W
Connection		6P-DIN dedicated cable with buckle	6P-DIN dedicated cable with buckle
Microphone	Type	Uni-directional electret condenser microphone	Uni-directional electret condenser microphone
	Sensitivity	-46 dBV/Pa	-46 dBV/Pa
	Frequency response	80 - 18000 Hz	80 - 18000 Hz
	Input impedance	2 kΩ	2 kΩ
	Directivity 0°/180°	≥ 20 dB (1 kHz)	≥ 20 dB (1 kHz)
	Equivalent noise	20 dBA (SPL)	20 dBA (SPL)
	Maximum sound pressure level	125 dB (THD<3%)	125 dB (THD<3%)

8.3.2 Pluggable stem microphone

8.3.2.1 Physical characteristics

Pluggable stem microphone	MS33/41/47EGE1B/S	MS33/41/47EGA1B	MS33/41/47EGB1B
Installation	Insert microphone and tighten		
Length	330/410/470 mm		
Color	Gray/Silver		
Weight	85 /95 /105 g		

8.3.2.2 Electrical characteristics

Pluggable stem microphone	MS33/41/47EGE1B/S	MS33/41/47EGA1B	MS33/41/47EGB1B
Microphone type	Uni-directional electret condenser microphone		
Sensitivity	-46 dBV/Pa		
Frequency response	80 - 18000 Hz		
Input impedance	2 kΩ		
Directivity 0°/180°	≥ 20 dB (1 kHz)		
Equivalent noise	20 dBA (SPL)		
Maximum sound pressure level	125 dB (THD<3%)		

8.4 Earphone

■ **EP-820AS single earphone**

- Cooperates with the infrared receiver or the congress unit
- Hi-Fi sound quality
- 32 Ω, Ø 3.5 mm stereo jack
- Frequency response: 50 Hz - 20 kHz
- Sensitivity: ≥ 102 dBA/1 mW
- Weight: 20 g

■ **EP-830 Single Earphone**

- Used with the conference unit
- Hi-Fi sound quality
- Assembled with detachable shell, cable and earphone
- The shell can be removed and cleaned separately
- The cable can be replaced separately by customer if breaks
- Ø 3.5 mm stereo plug (TRS)
- 32 Ohm (Tip and Sleeve, Ring: NC)
- Frequency response: 20 Hz to 20 kHz
- Sensitivity: ≥108 dBA/1 mW
- Weight: 25 g

■ **EP-960BH interpreter headset**

- Used with the receiver/conference unit
- Hi-Fi sound quality
- 150 Ohm×2, Ø 3.5 mm stereo jack
- Frequency response: 20 Hz to 20 kHz
- Sensitivity: ≥108 dBA/1 mW
- One sided wire
- Weight: 90 g

■ **HCS-5100PA headphone**

- Cooperates with the infrared receiver or the congress unit
- Hi-Fi sound quality
- 32 Ω×2, Ø 3.5 mm stereo jack
- Frequency response: 20 Hz - 20 kHz
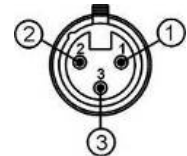- Sensitivity: ≥ 108 dBA/1 mW
- Weight: 70 g

8.5 System connection

● **Mains cables**

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

● **Audio cables**

3-pole XLR connector (female)

Pin 1 Earth
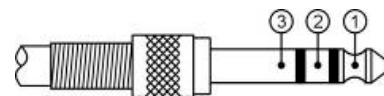Pin 2 Signal +
Pin 3 Signal -

Chinch connector (male)

Pin 1 Signal +
Pin 2 GND

● **Earphone**

3.5 mm Jack plug

Tip (1) Signal left
Ring (2) Signal Right
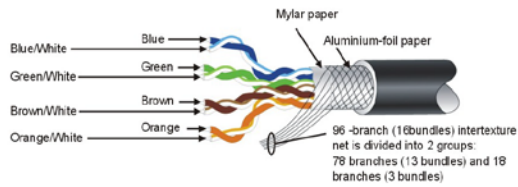Sleeve (3) Electrical earth/screen

Appendix

Dedicated 6 PIN Extension Cable

Case 1: Soldering of S-UTP Cable and 6PIN plug/socket

1.(S-UTP) Core 4×2×(7×0.203) with 96-branch intertexture net

Blue/White → Blue
Green/White → Green
Brown/White → Brown
Orange/White → Orange

Mylar paper
Aluminium-foil paper

96 -branch (16bundles) intertexture net is divided into 2 groups: 78 branches (13 bundles) and 18 branches (3 bundles)

2.6P DIN Male Plug

3. 6P DIN Female Socket (insulation ring)

Front view   Rear view

4.Soldering
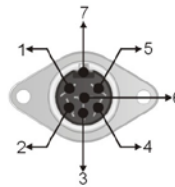
Socket (rear view)   Plug (rear view)
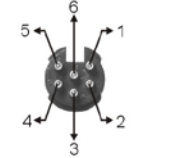
5.Soldering between dedicated 6P DIN plug/socket and the core of (S-UTP) cable

| Mark (plug/socket)	Corresponding (S-UTP) core
1	Blue/White
2	Brown/White
3	Brown
4	78-branch (13-bundle) weave
5	Green, Green/White Orange, Orange/White
6	Blue
7	18-branch (3-bundle) weave

Case 2: S-UTP Extension cable jointing

1.Strip 30 mm insulation of both cable sheaths;
2.Fan out the wires, twist the braided shield into a bundle, and cut off unnecessary foil paper and Mylar paper;
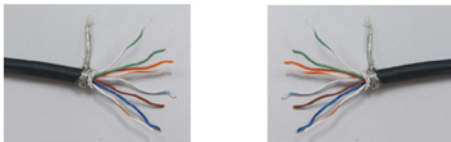
3.Strip 2 mm insulation of the 8 wires; pre-tin the strands and the braided shields appropriately;
4.Preassemble the heat-shrinkable tubes as in the following figure:
   put the φ 2.0 heat-shrinkable tubes over the 8 wires,
   put the φ 4.0 heat-shrinkable tube over the braided shield,
   put the φ 11.0 heat-shrinkable tube over the cable sheath;
5.Solder together wires having the same color (8x);
   solder together the braided shields;
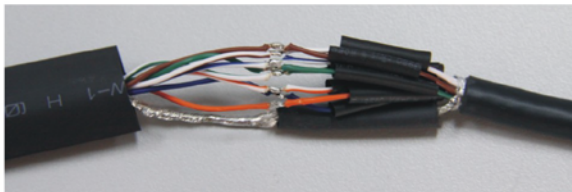
6.Cover the solder joints of the 8 wires and of the braided shields with the heat-shrinkable tubes and shrink them with the electric hot-air blower;
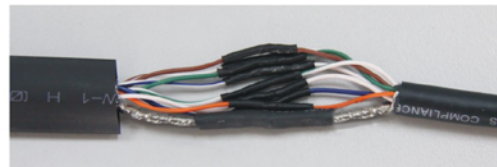
7.Shrink the heat-shrinkable tube which covers the 8 wires, the braided shield and the cable sheath with the electric hot-air blower.