

# *Installation and Operating Manual*

## *Fully Digital Conference system HT-9500*

---

---



## 1. IMPORTANT SAFETY INSTRUCTIONS



**CAUTION:** To reduce the risk of electric shock do not remove cover (or back panel). No user serviceable parts inside. Refer servicing to qualified personnel only.

**WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.



This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user of the presence of important operating and maintenance (servicing) instruction in the literature accompanying the appliance. Please carefully read the owner's manual.

### INSTRUCTIONS:

All safety and operating instructions should be read before the product is operated.

#### Retain these instructions:

All safety and operating instructions should be retained for future reference.

This owner's manual should be considered as a part of the product, it must accompany it at all times, and it needs to be delivered to the new user when this product is sold. In this way the new owner will be aware of all the installation, operating and safety instructions.

#### Heed all warnings:

All warnings on the product and in owner's manual should be adhered to.  
Heed all warnings.

#### Follow all instructions:

All operating and user's instructions must be followed.

Sentences preceded by  symbol contain important safety instruction. Please read it carefully.

### DETAILED SAFETY INSTRUCTIONS.

#### Water and moisture:

This apparatus should not be used near water (i.e. bathtub, kitchen sink, swimming pools, etc.)

#### Ventilation:

This apparatus should be placed in a position that doesn't interfere with its correct ventilation. This unit, for example, should not be placed on a bed, sofa cover or similar surfaces that could cover ventilation openings, or placed in a built-in installation, such a bookcase or a cabinet that could block air flow through ventilation openings.

#### Heat:

This apparatus should be placed away from sources of heat, like radiators, heat registers, stoves or other products (including amplifiers) that produce heat.

**Power sources:**

- This apparatus should only be connected to a power source of type specified in this owner's manual or on the unit.
- If the supplied AC power cable plug is different from wall socket, please contact an electrician to change the AC power plug.

**Grounding or Polarization:**

- All precautions must be observed in order to avoid defeating grounding or polarization.
- Unit metal parts are grounded through the AC power cord.
- If the AC power outlet doesn't have grounding, consult an electrician for outlet grounding.

**Power cable protection:**

The power cable should be routed in such a way that it will not be walked on or pinched by items placed upon or against it, paying particular attention to cables at their connections, receptacles and wall outlet.

**Cleaning:**

- You can clean the exterior of the unit with compressed air or a damp cloth.
- Don't clean the unit using solvents like hydroelectricity, thinners, alcohol, or other volatile or flammable fluids.

**Non use periods:**

The unit AC power cable should be unplugged from the outlet if it's unused for long periods.

**Objects or liquid entry into the unit:**

Be careful that no objects fall into the unit or that no liquid is spilled inside the unit through ventilation openings.

**Safe power line use:**

- Hold the plug and the wall outlet firmly while disconnecting the unit from AC power.
- When the unit will not be used for a long period of time, please unplug the power cord from AC power outlet.
- To avoid power cable damage, don't strain the AC power cable and don't bundle it.
- In order to avoid damage to the unit's power cable, be sure that the power cable is not walked on or pinched by heavy objects.

**Unit relocation:**

Before relocating the unit, please control the unit is turned off. The power cord must be unplugged from the wall outlet, and all the connecting cables should be disconnected as well.

**Do not open this unit:**

Do not attempt to open or repair this unit yourself. For any problem not described in this owner's manual, please refer to qualified personnel only or consult us or your National Distributor. Any improper operation could result in fire or electric shock.

**Damages requiring services:**

- Do not attempt to perform operations not described in this user's manual.
- In the following cases please refer to an authorized service center or skilled personnel:
  - When the unit works improperly or it doesn't work at all.
  - If power cord or plug is damaged.
  - If liquid has spilled, or objects have fallen into the unit.
  - The unit has been exposed to rain.
  - The unit doesn't operate normally or exhibits a marked change in performance.
  - If the product has been dropped or has been damaged in any way.

## Maintenance:

The user shouldn't attempt maintenance not described in this user's manual. All maintenance should be performed by qualified personnel only.

## IMPORTANT SAFETY INSTRUCTIONS:

- Install this unit following owner's manual instructions.
- Do not install, connect or disconnect power supply when the unit is powered, otherwise there is a high risk of electric shock.
- Do not open the unit, there are no user serviceable parts inside.
- If you detect a particular smell from the unit, please immediately turn it off and disconnect the AC power cord.
- Don't block the unit's ventilation openings.
- Avoid using this unit in overload for a long period.
- Don't force commands (switches, controls, etc.)
- To obtain good speaker wire contact, please tighten the screw terminals firmly.
- **▲** For safety reasons, do not defeat the grounding connection. Grounding is for user safety.
- Use only connectors and accessories suggested by the manufacturer. .
- This unit should be fitted in an equipment rack (see INSTALLATION) and kept far from:
  - Wet places
  - Direct exposure to heat sources (like sun light)
  - Improperly ventilated places
- Disconnect the power cord during storms or when the unit is not in use.
- **▲** In order to prevent fire and reduce risk of electric shock, it is necessary to keep the unit far from dripping water. Please don't put cups, vases or other object containing liquids over the unit. In case of interference from source signal, THD value will raise over 10%. Don't place this unit in a bookshelf or in other enclosed spaces.
- HTDZ is not responsible for any damage that occurs due to a incorrect installation of the unit.

## Remark:

- All rights reserved for translation, reprint or reproduction.
- Content may change without prior announcement
- All technical specifications are guideline data and not guaranteed featured

## **About this manual**

This manual is a comprehensive guide to the installation and operation of fully digital conference system. It includes the detailed description of the functions and interfaces of the 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 fully 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 and extension unit of fully 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 fully digital conference system.

### **Chapter 4: Conference connection**

Descriptions in detail of the connection between system devices

### **Chapter 5: Software control**

Descriptions in detail of the function and operation of software control of fully digital conference system.

### **Chapter 6: Accessories**

In introduction to the accessories of fully digital conference system, e.g. system microphone

### **Chapter 7: Environment and maintenance**

In introduction to the work environment and maintenance of fully digital conference system.

### **Chapter 8: Specification**

In introduction to the work environment and maintenance of series fully digital conference system.

## **This manual is applicable to:**

### **Conference Main Units:**

Fully Digital Conference System Main Unit (Discuss, recording, video tracking, voting, monitoring, 4.3 inch TFT touch display, Ethernet interface)

Fully Digital Conference System Main Unit (Discuss, recording, video tracking, voting, monitoring, 4.3 inch TFT touch display, Ethernet interface, **Dante** interface)

Fully Digital Conference System Extension Unit.

### **Conference Microphone Units:**

Fully Digital Conference System microphone units. Discuss & voting & video-tracking function. (Microphone without built-in speaker).

### **Accessories**

FTP CAT6

Terminal unit

Single Earphone

Headphone

# Chapter 1 Introduction

## 1.1 Summary

Based on digital control technologies, fully Digital Conference System is flexible and reliable for any conference of mini/medium/large meeting. The system features include: microphone management, automatic video tracking, conference audio recording, voting, etc.

This fully Digital Conference System is also provided with function that to access and control main unit through software, 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 fully Digital Conference System .

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

### Conference Main Units:

Fully Digital Conference System Main Unit (Discuss, recording, video tracking, voting, monitoring, 4.3 inch TFT touch display, Ethernet interface)



Fully Digital Conference System Extension Unit.



### Conference Microphone Units (Embedded):



Fully Digital Conference System microphone units. (Sensitive condenser microphone, 5 keys to vote, Ethernet interface)

### **Accessories**

FTP CAT6  
Single Earphone  
Terminal unit  
Headphone

## **1.2 System Equipment**

### **1.2.1 Conference Main Unit (CMU)**

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

By use fully digital audio transmission technologies, 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.

The FTP Cat6 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 "hand-in-hand" design of contribution unit s enables the units to be added into the system at any desired point, and simplifies equipment extension and maintenance significantly.

### **1.2.2 Conference Microphone Unit**

All conference units of this series are supplied by the main unit's Ethernet interfaces is limited, it must be ensured during installation that the added up values of the total power consumption of all conference units connected in each path and the power loss in extension cables do in no case exceed the maximum possible value delivered by each Ethernet interface. Otherwise the system will not work properly or automatic protection will be triggered. The last mic of each Ethernet outputs must connect one terminal unit.

### **1.2.3 Accessories**

Relevant accessories connected or used in this series include: connection cables, terminal units, software, etc.

## **1.3 Conference Management Software**

This series conference system can be controlled by software that is comprehensive, reliable and eco-friendly. The user can access the the software to manage centrally all aspects of the conference. The operation turns out to be easy and efficient.

By software control, function of this series conference system include CMU setting, Speaking and Request list, Video Tracking, Edit Data of Participants, etc...

## **1.4 Functions and Features**

### **1.4.1 Set up numbers of active microphones and operation modes**

a) Active microphone limit (1/2/3/4) and speaking time limit.

b) Three operation modes can be set via the main unit

✧ "Limit" mode: When this mode is selected, this display will show LIMIT MODE, plus the number of delegates that can speak simultaneously. Once this number of delegates is reached, no further delegates will be allowed to intervene until the number of active delegate microphones again falls below this limit

✧ "FIFO" mode: When this mode is selected(First In-First Out), the display will display FIFO MODE, plus the number of delegates who can speak simultaneously. In this mode, the keeps track of the order in which the delegate microphones are activated. Once the preset limit of simultaneous delegates has been reached, and a new delegate presses the **MIC ON/OFF** key on his microphone, the FIRST



microphone that was active when this limit was reached will be made inactive, and the new delegate microphone will be activated.

- ◇ “Request” mode: When this mode is selected, only controlled by the software operator to decide the request microphone on/off

#### **1.4.2 Set up of chairman microphone**

- a) Chairman microphone is unlimited by conference mode, only controlled by itself or software.
- b) Chairman Priority: Chairman priority key has two functions (Mute All/Close All) when “Chairman Only” function is active, all delegate microphones will be off or mute when priority key pressed (Delegate microphone IPS display will show “Chairman Only”), and the delegate microphones will not reactivate when their **MIC ON/OFF** key is pressed. These will remain excluded until the chairman again presses the **MIC ON/OFF** key to release this mode.
- c) We suggest 3 chairman microphone maximum installed in one system, as maximum active microphones in one system is 4, if active chairman microphones more than 3, then delegate microphones can not active.

#### **1.4.3 Software Control**

- a) Active microphone limit and microphones mode selection.
- b) Microphone ID list, speaking and request list can be displayed on the software and through which the operation can turn/on/off the microphones
- c) Set up microphone functions ( such as speaking, sign in, ballot rights)
- d) Speaking time and warning time limit.
- e) Predefined position setting, video tracking (support PELCO-D and VISCA), maximum 8 cameras can be controlled
- f) Edit conference data ( such as conference heading, proposal, sub-screen display, delegates data, ballot information
- g) System line detect to check microphone status.

#### **1.4.4 Conference recording**

- a) USB interface for conference recording
- b) The TFT display will show the recording information and USB flash disk remaining recording time

#### **1.4.5 Video Camera Auto-tracking**

- a) Built-in video camera auto-tracking function to support camera track the last active microphone and display video-Home image (the image when all microphones off) to sub-screens
- b) Support up to 8 cameras with video matrix

#### **1.4.6 Conference Monitoring**

Built-in 3.5mm phone jack for monitoring the conference.

#### **1.4.7 Seamlessly integrated with central control system**

The seamless integration of CMU (Via RS232C interface of main unit) and central control system provides comprehensive conference system solution. Besides the basic conference management (discussion, video tracking, ballot, etc.), it also manages peripheral multimedia equipment, surrounding lights, projector display and sound equipment.

#### **1.4.8 Excellent immunity to RF interference from mobile phones**

## Chapter 2 Conference Main Unit

### 2.1 Conference Main Units

The Conference Main Unit forms the core of the entire conference system. It provides power supply to all contribution unit and serves as key component to link system hardware to software control. The CMU adopt DSP techniques such as feedback suppression, noise cancellation, automatic gain, and digital equalization. It's flexible and reliable for any conference of mini/medium/large meeting.

#### Product Include:

Fully Digital Conference System Main Unit (Discuss, recording, video tracking, voting, monitoring, 4.3 inch TFT touch display, Ethernet interface)

Fully Digital Conference System Extension Unit.

#### 2.1.1 Main Features and Specifications of CMU

- a) FTP Cat6 cables are introduced for data transmission and power supply, supporting message transmission with a fast internet service 100M. Thus, audio signals could be delivered perfectly in a long distance.
- b) A sampling frequency of 48kHz is supported by the system.
- c) In order to ensure a clear, highly sensitive, and perfect sound quality, CMU built-in high-performance dual-core CPU, 32 bit high-speed DSP technologies, feedback suppression, noise cancellation, automatic gain, and digital equalization are all available.
- d) TCP (transmission control protocol) and IP (internet protocol) are all available, enabling a reliable and safe management.
- e) Built-in video tracking control and ballot processor, high definition switching matrix are available for auto video tracking with HD video matrix.
- f) The CMU owns a built-in USB, allowing the realizing of recording and monitoring.
- g) Audio could be outputted in balanced or unbalanced way.
- h) Different kinds of interfaces, like, Ethernet, RS422 and RS232, could meet requirements towards different devices.
- i) Three modes are available, including REQUEST(1-4),LIMIT (1-4), and FIFO (1-4). They all support speech timing function.
- j) Multiple conference functions could be realized when CMU is connected to computer.
- k) Power Input: 220-240V,AC 50/60Hz
- l) Static Power: 12W
- m) Maximum Output Power: 350W
- n) Frequency Response: 20Hz-20KHz
- o) S/N: > 80dB
- p) T.H.D: <0.05%
- q) Dimensions: 484x 88 x 360 mm, 2 U rack 19"

## 2.1.2 Functions and Instructions of CMU

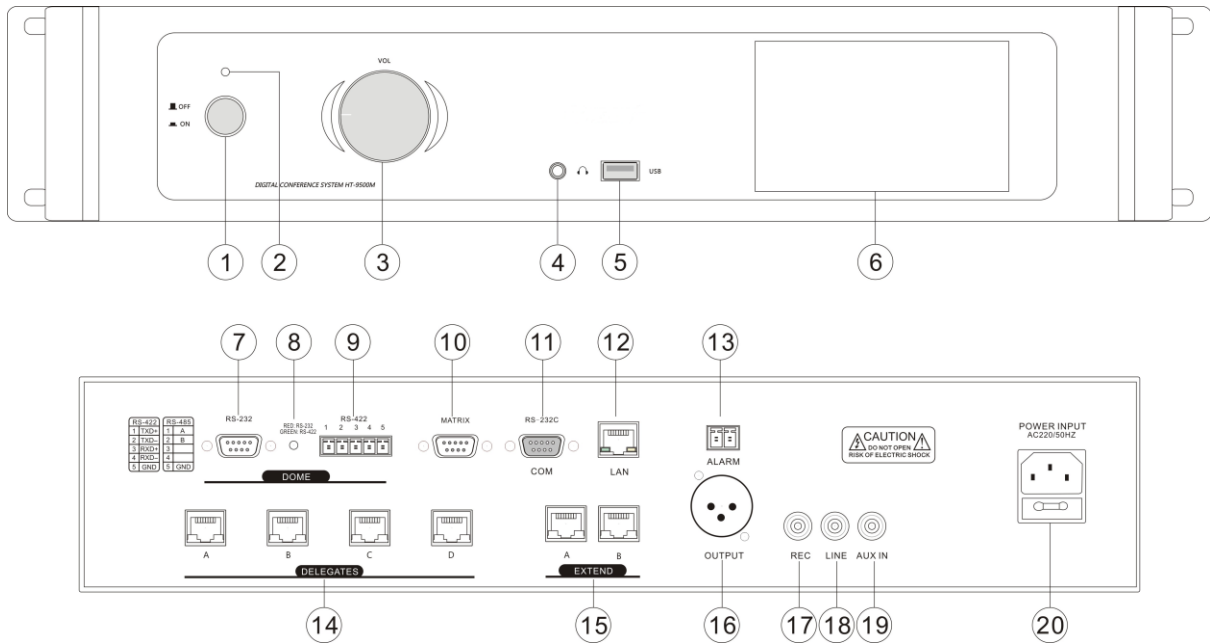
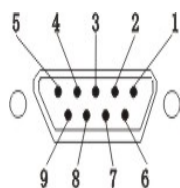


Figure 1

- ① Power Switch: Use this button to switch on or to switch off the main unit
- ② Power Indicator light
- ③ Volume: Master volume control the level on output (figure 1 – ref. 16,17,18 )
- ④ Monitoring earphone interface (Φ3.5 mm)
- ⑤ UBS interface: Be connected to USB drive for MP3 recording
- ⑥ Display: 4.3 inch TFT touch control display for basic system setting and recording control
- ⑦ RS-232 camera control interface
- ⑧ Camera data control indicator
- ⑨ RS422/485 camera control interface
- ⑩ Matrix control interface: When cooperating with seamless video matrix and dome camera, auto video tracking can be realized.
- 11 RS232C interface to support central control system
- 12 LAN: Ethernet interface for communication between the CMU and the PC
- 13 ALARM: Emergency signal interface, for connection to public emergency system
- 14 Delegates: 4 path microphones output interface (Ethernet ) to connect system microphones.
- 15 Extend: Dual connection Ethernet interface to the extension main unit
- 16 Output: Balanced signal output (male XLR3). Connect mixer or amplifier to this output
- 17 Recording output (RCA). To record a conference, connect a recorder to this output
- 18 Line: Unbalanced line level output (RCA)
- 19 AUX IN: Line level input (RCA). Connect this input to an audio source such as a CD player, etc.
- 20 AC POWER SOCKET: Power 230VAC 50/60Hz

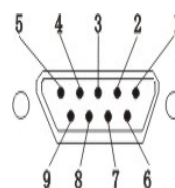
## 2.1.3 Description of Control Interface of CMU

- ① Central control connector RS232C



### RS-232C Male

1- NC	6- NC
2- TXD	7- NC
3- RXD	8- NC
4- NC	9- NC
5- GND	



### RS-232C Female

1- NC	6- NC
2- RXD	7- NC
3- TXD	8- NC
4- NC	9- NC
5- GND	

Figure 2

- ② Camera control connector RS232 and RS-422  
 If you use dome camera in place of camera you can control pan and tilt move directly from software. Connect this socket to the control connector of domes.  
 Note : To know connections, read the user manual of the dome.

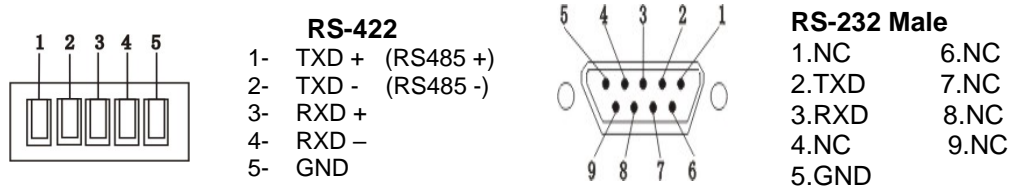


Figure 3

**2.1.4 Instruction of TFT Touch Display of CMU**

The display will light after turn on the main unit with power switch and enter main interface as below:



**Instruction of TFT touch display menu**

The display include 2 menu interface, user can select it with ◀ and ▶ to switch the menu

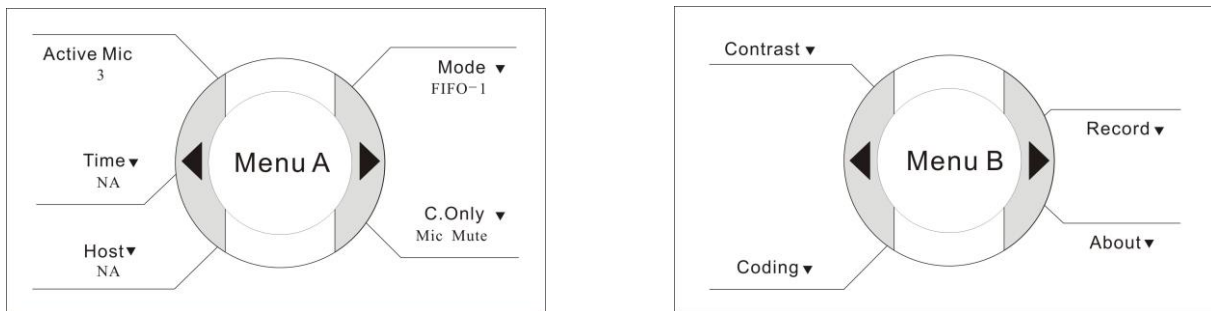
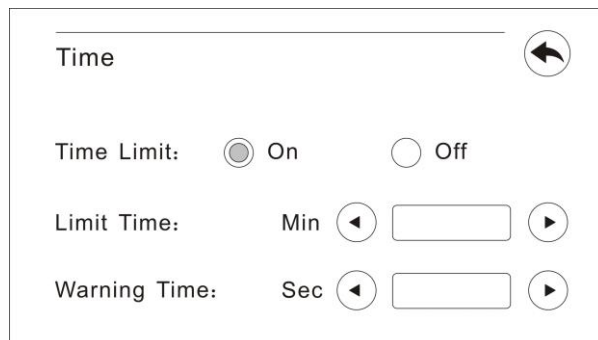


Figure 4

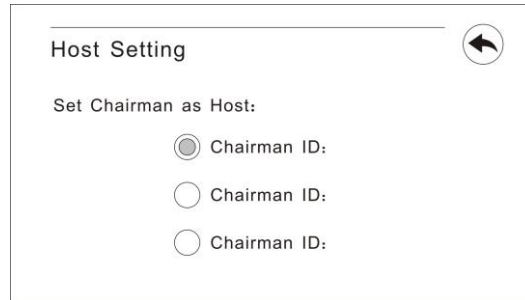
- a) Active microphone number (Menu A): To display real time active microphone number in the system
- b) Time Limit (Menu A)



**Figure 5**

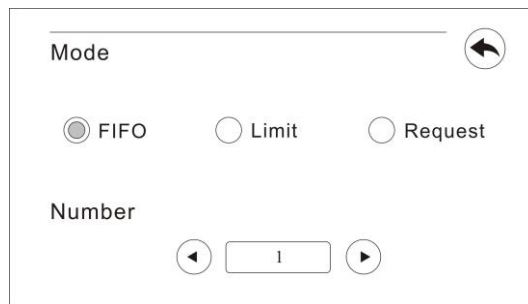
- ✧ User can set speak limit time in this interface, when this function is on, system will start counting the time if microphone is on and will close this microphone when the limit time is over.
- ✧ Limit time range: 1-60 minutes
- ✧ Warning time range: 1-60 seconds: the microphone led will start to flash when the remaining time reach to the warning time range

c) Moderator setting (Menu A)



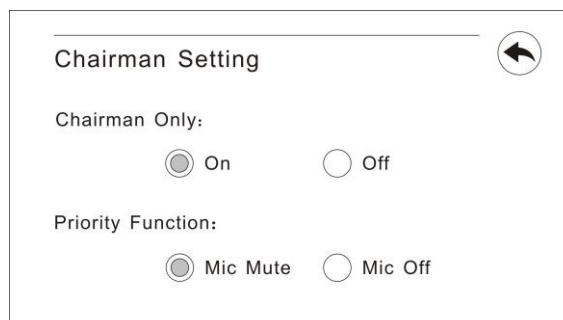
If system has more than 1 chairman microphone, user can set one of them as moderator, this chairman microphone can control sign-in/ballot function.

d) Conference Mode (Menu A)



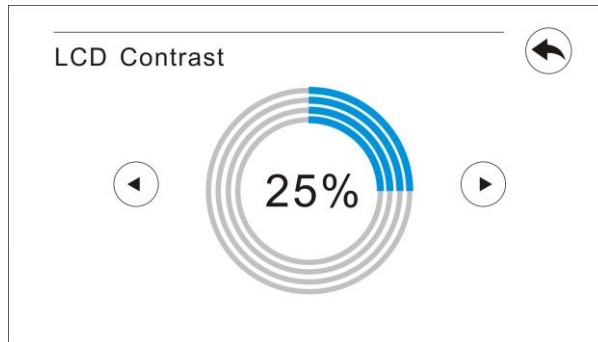
- ✧ “Limit” mode (1-4): When this mode is selected, this display will show LIMIT MODE, plus the number of delegates that can speak simultaneously. Once this number of delegates is reached, no further delegates will be allowed to intervene until the number of active delegate microphones again falls below this limit
- ✧ “FIFO” mode (1-4): When this mode is selected(First In-First Out), the display will display FIFO MODE, plus the number of delegates who can speak simultaneously. In this mode, the keeps track of the order in which the delegate microphones are activated. Once the preset limit of simultaneous delegates has been reached, and a new delegate presses the **MIC ON/OFF** key on his microphone, the **FIRST** microphone that was active when this limit was reached will be made inactive, and the new delegate microphone will be activated.
- ✧ “Request” mode (1-4): When this mode is selected, only controlled by the software operator to decide the request microphone on/off, there is no limitation of the request microphone number, but only 4 delegate microphone can be on maximum at the same time.
- ✧ Chairman microphone is unlimited by conference mode,only controlled by itself or software.

e) Chairman only Mode (Menu A)



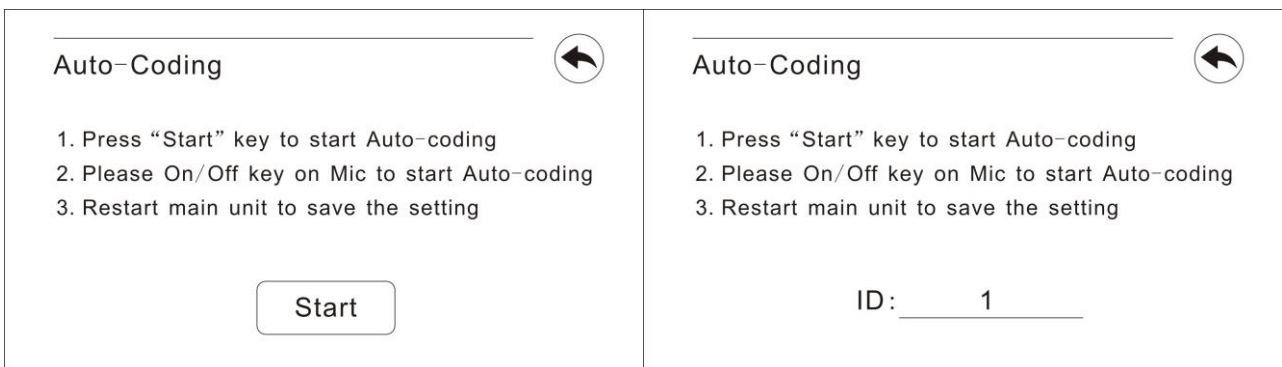
- ✧ Chairman Priority: Chairman priority key has two functions (Mute All/Close All) when “Chairman Only” function is active, all delegate microphones will be off or mute when priority key pressed (Delegate microphone IPS display will show “Chairman Only”), and the delegate microphones will not reactivate when their **MIC ON/OFF** key is pressed. These will remain excluded until the chairman again presses the **MIC ON/OFF** key to release this mode.

f) Contrast (Menu B)



- ✧ User can set the display contract with select it with ◀ and ▶

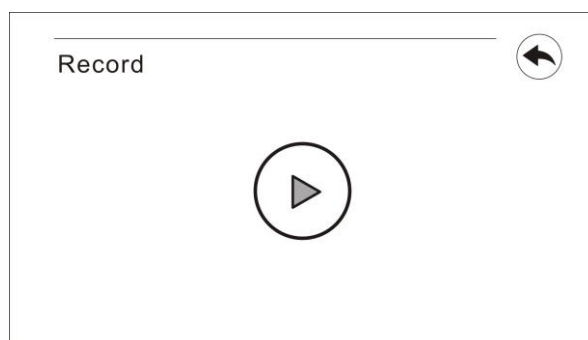
g) Auto-coding (Menu B)



Each mic has a number ID which is affected (very important to setup the discuss, auto-track and voting function ), user can set the microphone id after setup the system.

- ✧ This coding information is displayed on all the microphone LCD, press the on/off button of the corresponding mic to the affected the number.
- ✧ The other mics are always show the coding information but with an incremented number of a unit.
- ✧ Please make sure the microphone id number should be different in one system
- ✧ Please make sure the terminal unit connect to the last microphone of each line before auto-coding.

h) Recording (Menu B)



After connect USB flash disk to USB recording interface of the CMU, user can start audio recording, the record file will save in the folder named "Record", the file format is \*.mp3. Please connect USB flash disk to CMU at Menu A or Menu B interface, then enter recording interface, or CMU can not find the disk  
 i) About ( Menu B)

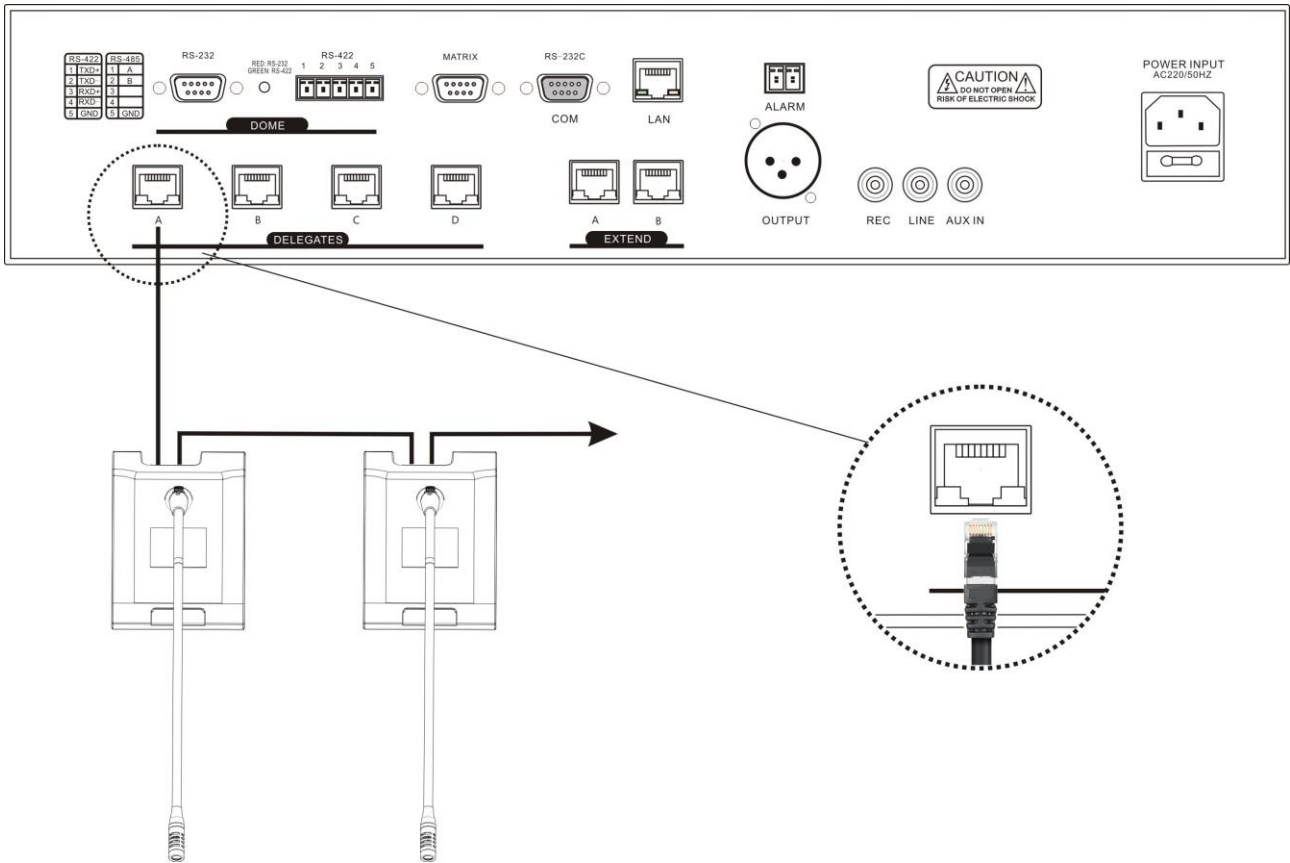


This will display the version/function of CMU.

**2.1.5 Installation and connection of CMU**

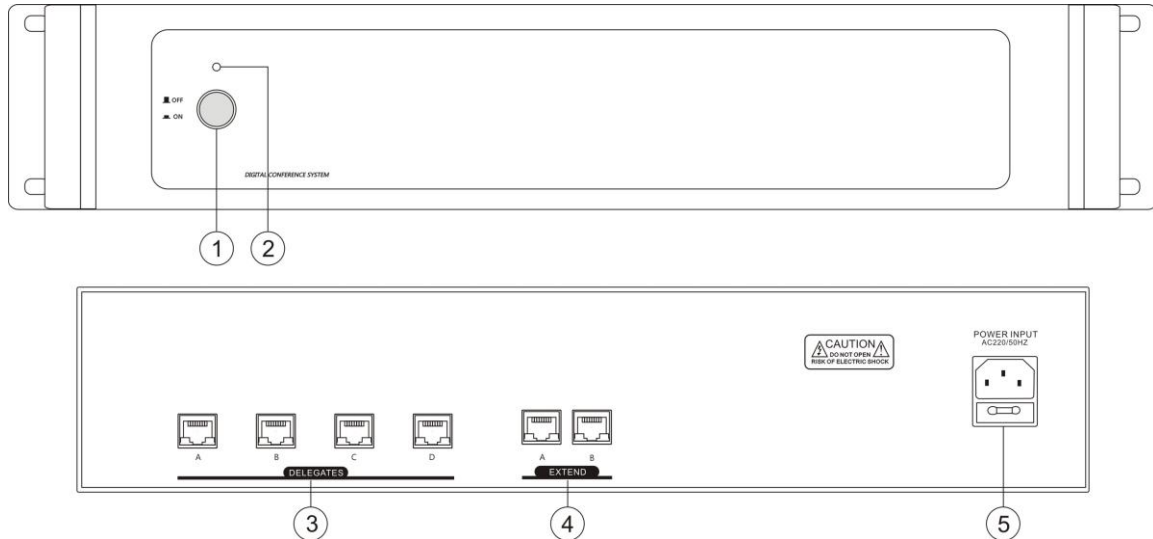
HT-9500 series conference main unit is stylish and cabinet design that can be install on table or standard cabinet.

HT-9500 series CMU has 4 outlet (Ethernet interface) cable connectors for microphones (figure 1 – ref. 14). When connecting the main unit to the microphone units, just connect the RJ45 connector of the first unit to the output of the main unit. For longer distance between the microphone unit and CMU/Extension Unit, a FTP cat6 cable ( both end of this cable equipped with RJ45 connector) is used. Just connect the RJ45 connector of the cable to the microphone unit, and connect the other side to the output of the main unit.



## 2.2 Fully Digital Conference System Extension Unit.

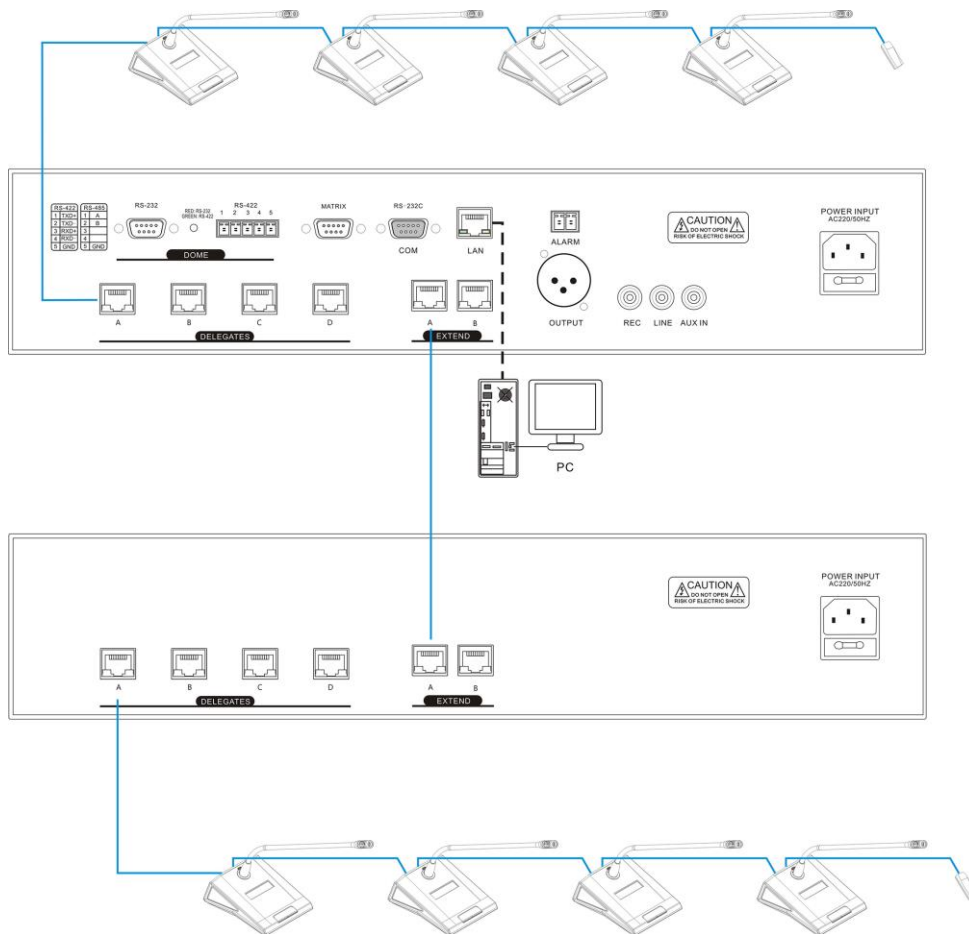
### 2.2.1 Functions and Instructions



- ① POWER: Main power on/off switch
- ② Power light
- ③ System outlet (Ethernet interface) to connect microphones (A B C D)
- ④ Extension input/output A/B: Connecting to CMU or next extension unit
- ⑤ AC POWER SOCKET: Power 230VAC 50Hz

### 2.2.2 Connection to the CMU and microphones





## Chapter 3 Conference Microphone Units

### 3.1 Conference Microphone Units

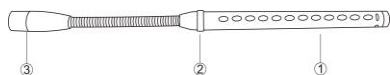
The conference microphone units is the common name to describe the unit used by the attendees to contribute to a conference. The term includes chairman unit and delegate unit.

#### Product Type:

Fully Digital Conference System Chairman Unit. (2.4 inch IPS Display, Monitoring Speaker, Ethernet interface)

Fully Digital Conference System Delegate Unit. (2.4 inch IPS Display, Monitoring Speaker, Ethernet interface)

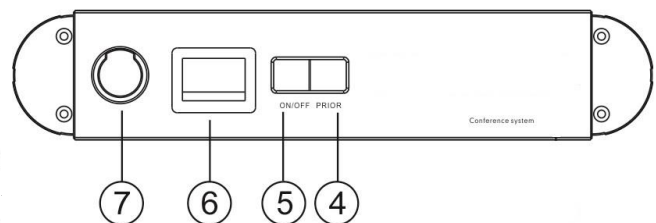
### 3.2 Functions and instructions



Option 1: Short Gooseneck Mic



Option 2: Long Gooseneck Mic



- ① Electret condenser cardioid microphone
  - ② Indicator light on active microphone: When microphone is active, indicator light switches on
  - ③ Gooseneck microphone connector (Male)
  - ④ Microphone On/Off key for the chairman microphone, Microphone On/Off/Request key for the delegate Microphone
  - ⑤ Priority key ( for chairman unit only). According to the priority mode configuration on the main unit .When press and hold this key 1 second on chairman
  - ⑥ OLED display : To display the microphone status
  - ⑦ Microphone socket to fixed the gooseneck microphone
- ✧ Chairman microphone: Press this key to activate the microphone and the indicating light
  - ✧ Delegate microphone: Press this key to activate/deactivate the microphone or request/cancel request to speak.

<b>Work State</b>	<b>Indicating light</b>
Microphone On	Red (On)
Speaking time limit warning	Red (Flash)
Limited Mic	Green (Flash)
Request On	Green (Flash)
Autocoding	Red (Flash)

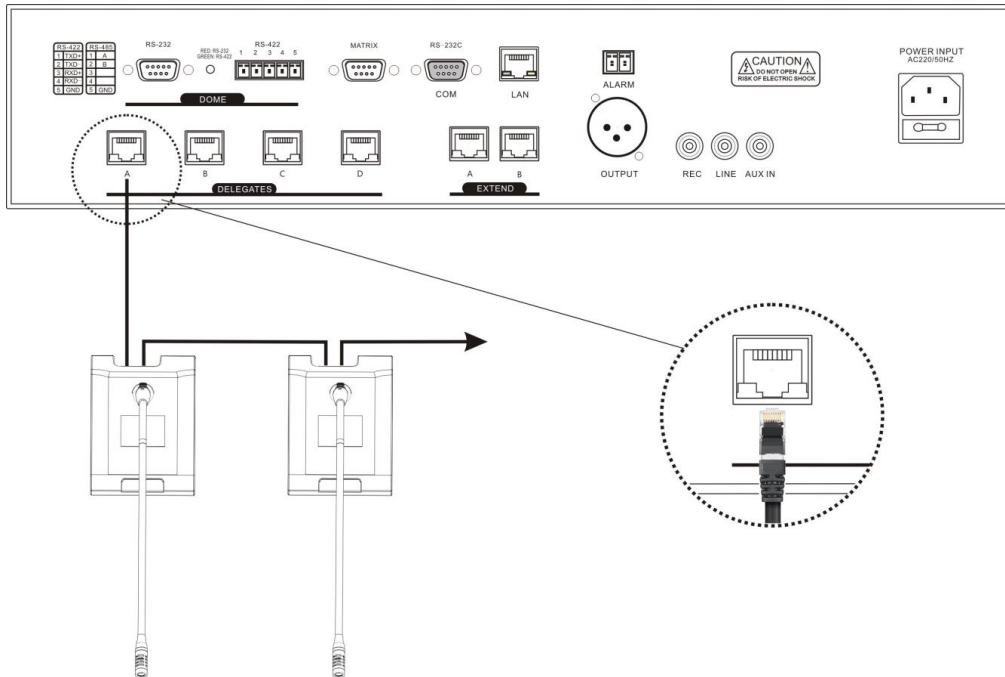
- Noted: There has two gooseneck microphone options for the microphone unit, long one and short one.
- ✧ If configured as “ Mic Mute”, all active delegate microphones will be muted when this key pressed and they will resume when pressed the on/off key to released this mode.
- ✧ If configured as “ Mic Off”, all active delegate microphones will be switched off when this key pressed and they will resume when pressed the on/off key to released this mode.
- ✧ Under “Request” mode, pressing this key will clear the request list
- ✧ If chairman microphone is not active, pressing this key will activate it.

### 3.3 Connection

#### 3.3.1 Connection to the CMU

The HT-9200/9500 series microphone unit is equipped with a 2 meter long FTP cat6 cable with a standard RJ45 connector. To connect to CMU, just connect the RJ45 connector of the first unit to the output of the main unit.

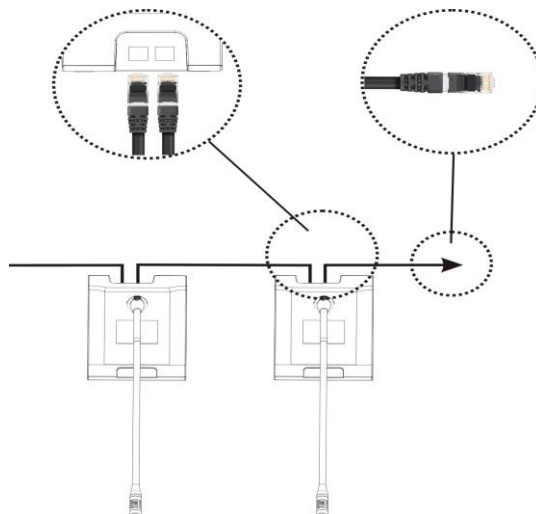
In case of a long distance between the conference unit and the CMU, use FTP Cat6 extension cable. Just connect the RJ45 connector of the cable to the microphone unit, and connect the other side to the output of the main unit.



#### 3.3.2 Connection between the microphone units

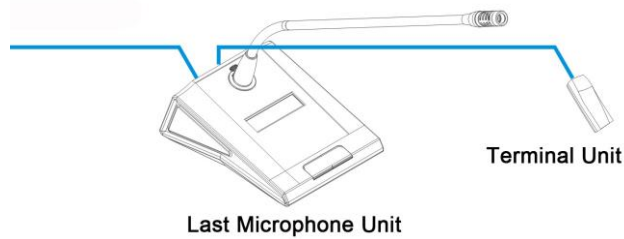
The conference microphones of the Fully Digital Conference System are daisy chained easily.

When connecting to another unit, just connect the RJ45 connector on the 2 meter FTP cat 6 cable to any Ethernet interface of the microphone unit.



### 3.3.3 Connection of the terminal unit

For this series digital conference system, The last microphone unit of each Ethernet outputs must connect one terminal unit. -----For example:



## 3.4 Operation

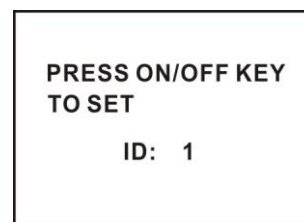
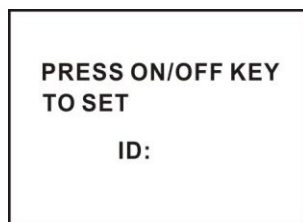
Before a meeting starts, the conference units need to be configured by the operator, include: coding and testing. During the meeting, the participators use the conference unit to activate microphone, request to speak, etc.

### 3.4.1 Microphone Coding

First of all, make sure that conference microphones are connected properly to the CMU. All conference microphones must be coding when the system is used for the first time or when adding or replacing conference microphones. The coding number can be activated by the menu operation on the CMU TFT touch panel.

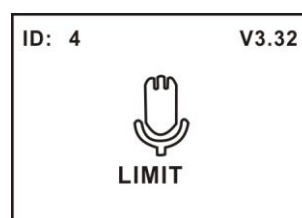
After selecting “ Auto-coding” from the CMU TFT touch panel “Auto-coding” and the coding number will displayed on the IPS display and all the LED indicators on the microphone units connected will blink, Microphone display will show “Press on/off key to set ID”. Now press the “Mic On/Off” key on the microphone units one by one to the coding each unit, the button indicating light will be deactivated, microphone IPS display also will show the microphone ID. Once all conference microphone units finish coding, restart the CMU to update the coding information.

- When system under coding, please coding the conference microphones one by one and do not press the “ Mic On/Off” key of several conference microphones at the same time.



### 3.4.2 Delegate Microphone

1. Speaking: Speaking mode is configured on the CMU
  - Limit 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
      - 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



■ FIFO mode

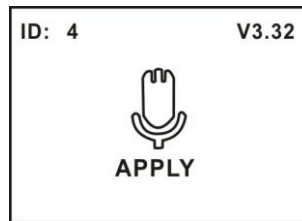
- Active microphone number limitation (1/2/3/4) not reached
  - a. The microphone will be activated when the microphone on/off key is pressed.
  - b. The microphone will be deactivated when the microphone on/off key is pressed again.

- 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 activated microphone (include chairman microphone) reaches 5, turning on another microphone will switch off the delegate microphone turned on first

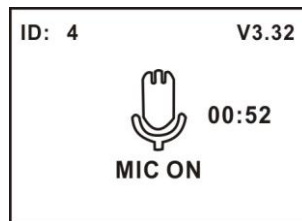
■ Request mode

Request to speak when the microphone on/off key is pressed ( 4 microphones at most)



- The chairman microphone do not count in the active microphone number limitation (1/2/3/4), at most 5 microphones can be activated at the same time in a system.
- A camera can focus an activated microphone automatically ( camera position preset by software). Speaker's video can be exported to and displayed on large screen(s).

2. Speaking: Speaking mode is configured on the CMU, when speaking time limit set, system will count the microphone speaking time, and microphone LED will flash when reach to warning time, the microphone will be off automatically when time is up.



3. Volume control

The volume of the built-in loudspeaker and earphone (when the earphone is plugged) can be adjusted by the volume control on the lateral side of the microphone unit. (HT-9500 series microphone)

### 3.4.3 Chairman Microphone

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

1. Priority

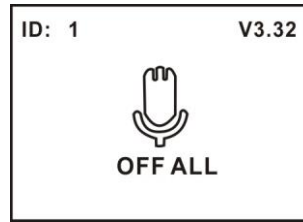
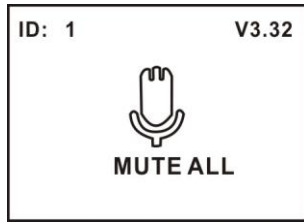
- If the priority mode on the main unit is configured as " Mic Mute" , all active delegate microphones will be muted temporarily when this key is pressed and they will restore when pressed the on/off key to released this mode.
- If t configured as " Mic Off" , all active delegate microphones will be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

2. Speaking

The chairman microphone is unlimited by the system mode, it can turn on/off its microphone at any time.

3. Turn off or mute delegate microphone

The chairman can use the "Priority" key to execute "Mic Mute" or "Mic Off" operation



## Chapter 4 System Connection

### 4.1 Summary

HT-9500 series Fully 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 unit as well as to CMU via Ethernet cable.

In this chapter, the connections of HT-9500 series Fully 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 microphone units and serves as key component to link system hardware to software control.

Since microphone units are powered by the CMU, thus, the total number of microphone units in any installation is limited by the maximum power handling capacity and control capacity of the CMU. In one system, up to 320 units can be connected by adding extension unit.

The CMU can work alone to achieve basic control functions, when through software control, more powerful and versatile management and control functions are accessible.

#### 4.1.2 Connection cables

All microphone units equipped with a 2 m FTP Cat6 cable, when the microphones are connected one by one, connect first unit to the outlet socket (Ethernet interface) of the CMU, and then connect this microphone to the next one via any Ethernet interface on the microphone- thus microphone units are daisy-chain connected. FTP Cat6 cable can be used between microphone units and the CMU.

- The last microphone unit of each Ethernet outputs must connect one terminal unit.

#### 4.1.3 Extension cable

If the distance between the CMU and the microphone unit or one microphone unit to another one exceeds 2 meter, an extension cable is needed. Due to the voltage drop in the extension cable caused by the ohmic resistance, the number of microphone units available for each outlet connector will be reduced according to the length of the cable connected. The relationship is described as below.

The extension cable connected between the CMU and the first microphone unit carries the current of all subsequent units and influences at the same time the maximum possible load of the CMU.

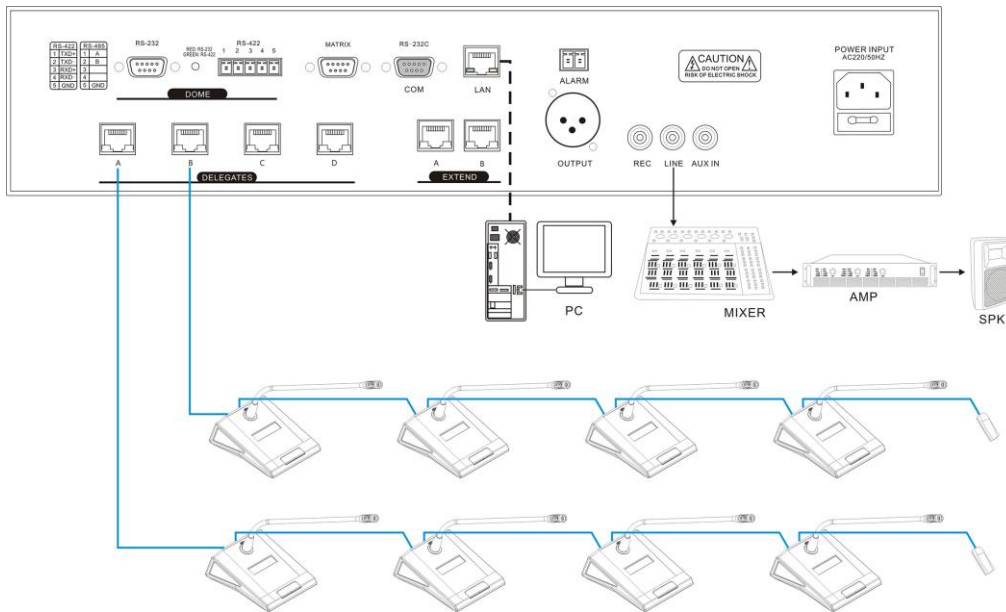
Type No	The extension cable length between the CMU/Extension unit and the first microphone connected to the outlet Ethernet interface								
	10 m	15 m	20 m	25 m	30 m	35 m	40 m	45 m	50 m
series	15	13	11	10	9	8	7	6	6

## 4.2 Connection between the CMU and the microphone units

All microphone units of the system adopt FTP Cat6 Ethernet cable and are daisy-chained, which makes the installation handy and effortless.

Connect the first microphone to the outlet port of the CMU ( both of them are Ethernet interface) via FTP Cat6 Ethernet cable with RJ45 connector, and then connect the first microphone to the second one with the same type cable with RJ45 connector. Proceed one by one in a series configuration. The FTP Cat6 Ethernet extension cables can be used between microphone units and the CMU.

**For example:**

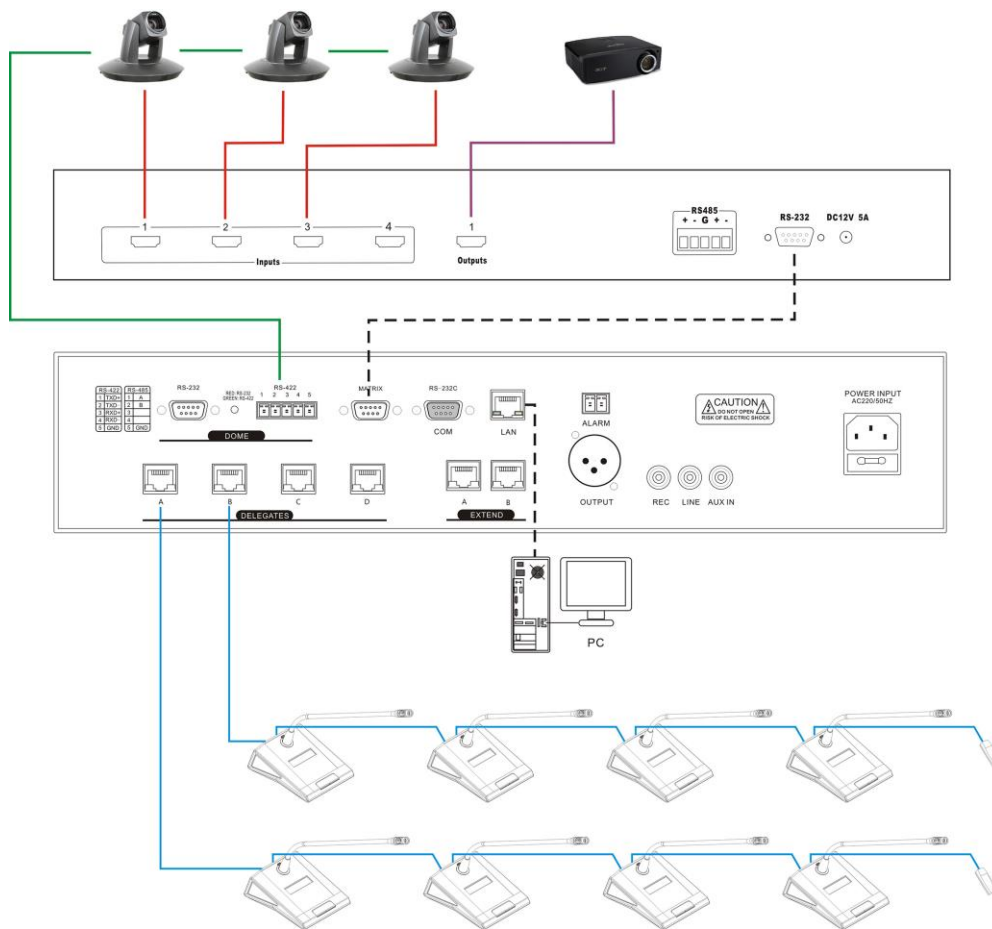


### 4.3 Connection between the CMU and automatic video tracking system

HT-9500 Series Fully Digital Conference System can be connected to an automatic video tracking system. For video tracking purposes, the software control can set camera presets for every conference microphone. If the conference microphone is switched on, video tracking system will automatically find the appropriate preset and focus on the speaker. The view of the speaker will be display 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 RS485 cable and connect to main unit (port RS422) to corresponding port at the rear panel of the video switcher as show in the following figure.

For example:





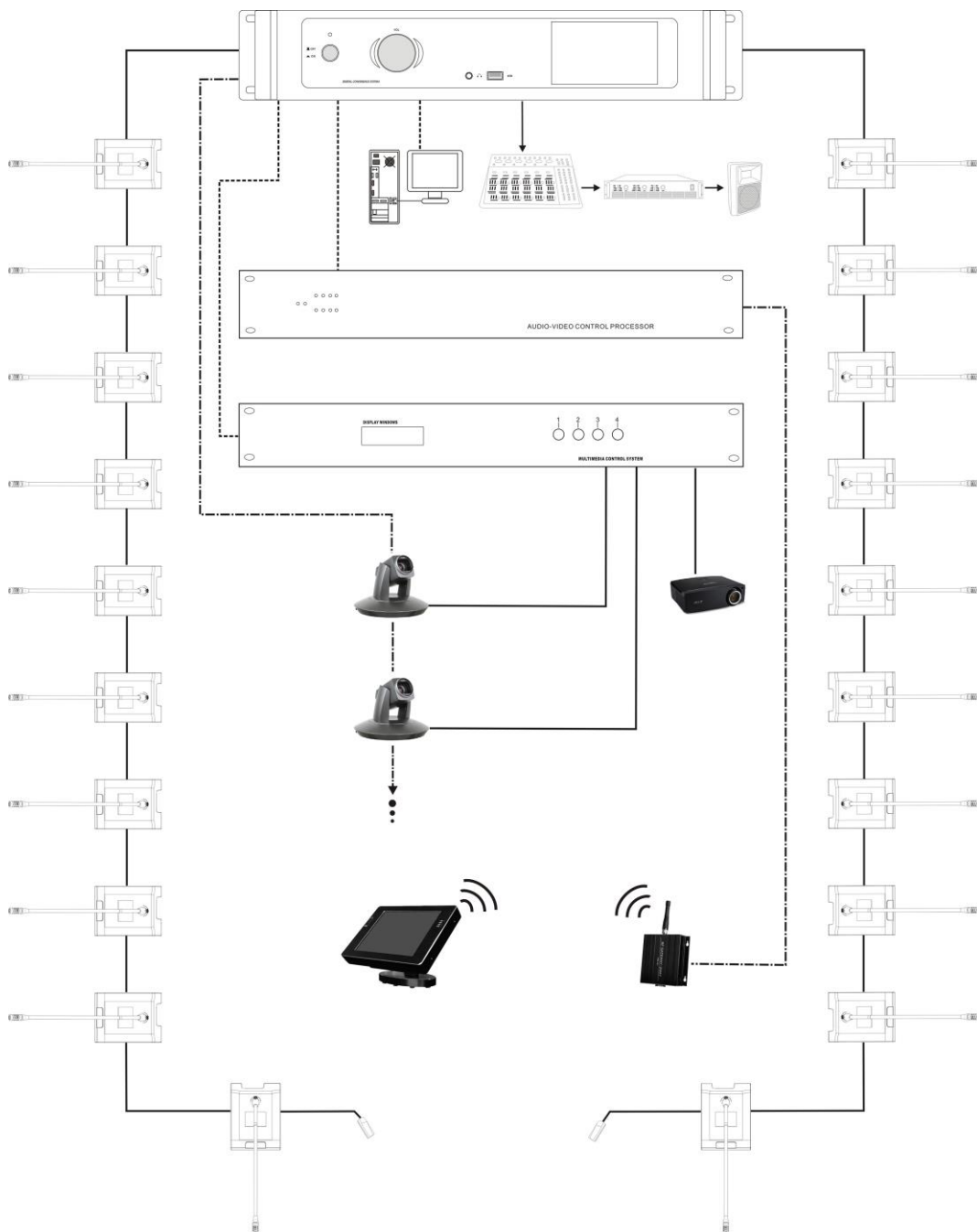
## 4.4 Connection between the CMU and network central control system

The 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 and controlling various electric devices, such as DVD, DVR, TV, projector, etc. RS232C or RS485 interfaces are available. Remote controlling, even from distant places, can be achieved through LAN or internet.

The central control system and this 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 and control video camera.

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

The connection of this series conference system and the central control system is shown in the following figure.

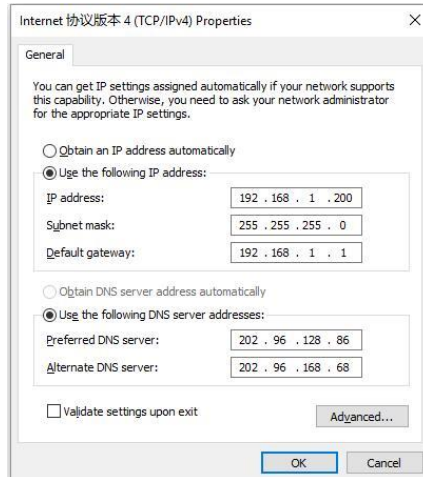


## Chapter 5 Software Control

Operation environment: Win/7/8/10

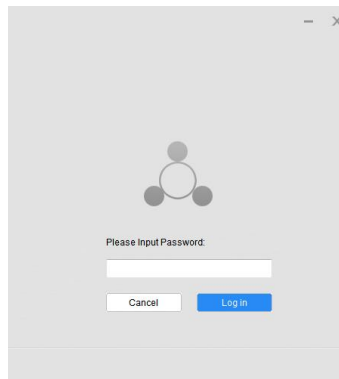
### 5.1 Settings before login

Before login the software, please change your network settings first, choose “change adapter options” set the PC Ethernet Properties first, set IP address: 192.168.1.200, then then connect from main unit Ethernet interface (LAN) to the operation computer.



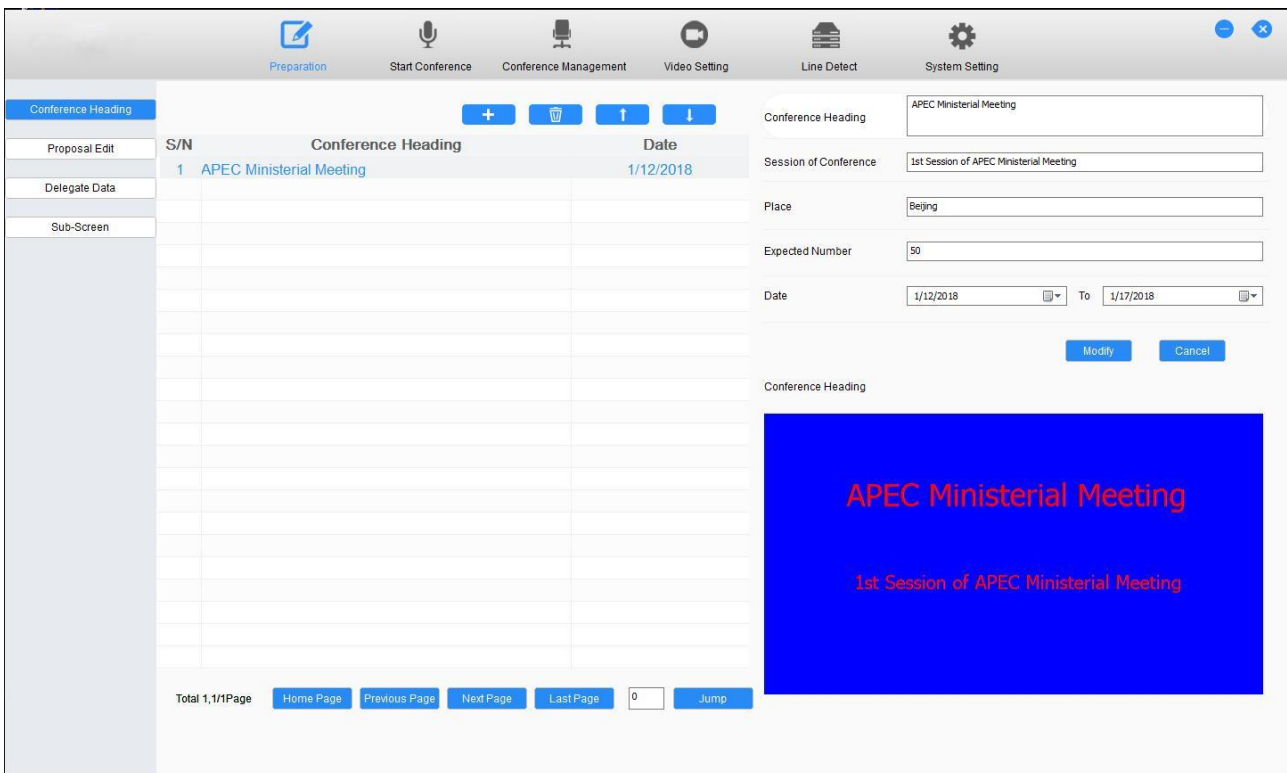
### 5.1 Login

Copy the software to computer, the default password is “ 12 ”, the password can be changed after login. The login interface is shown in the following figure:



Input the password, then click the “Login”, the software will start searching the CMU with the preset IP address and loading initial data. If system can not searching the CMU or there has some connection problem between CMU and computer, software will always stay at this loading interface.

If the setting and connect is correct, it will enter the conference management system interface automatically. There are six main menu of the software main interface - "Preparation", "Start Conference", "Conference Management", "Conference Management", "Video Setting", "Line Detect" and "System Setting"

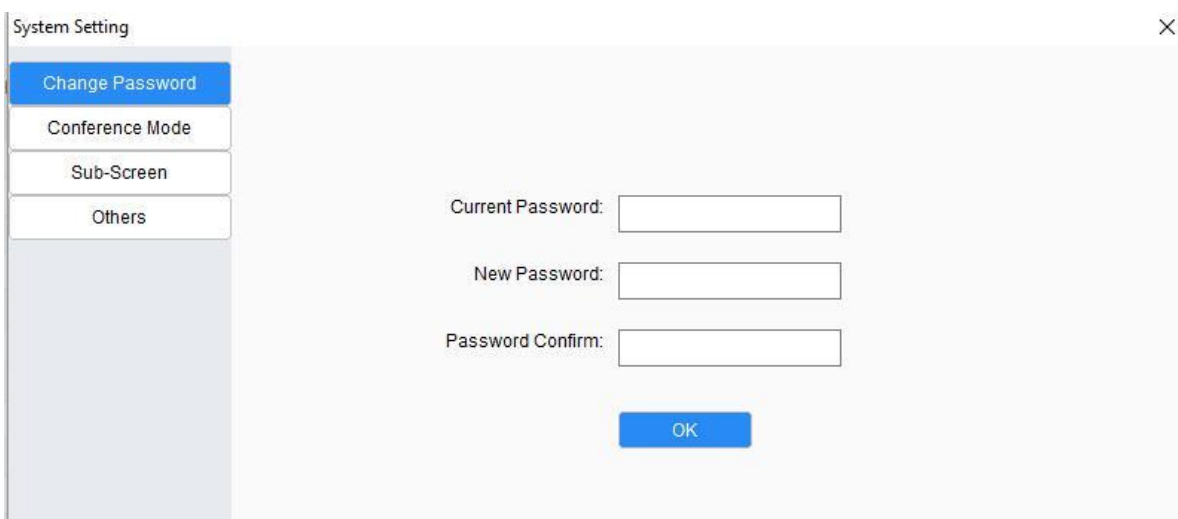


## 5.2 Operation

### 5.2.1 System Setting

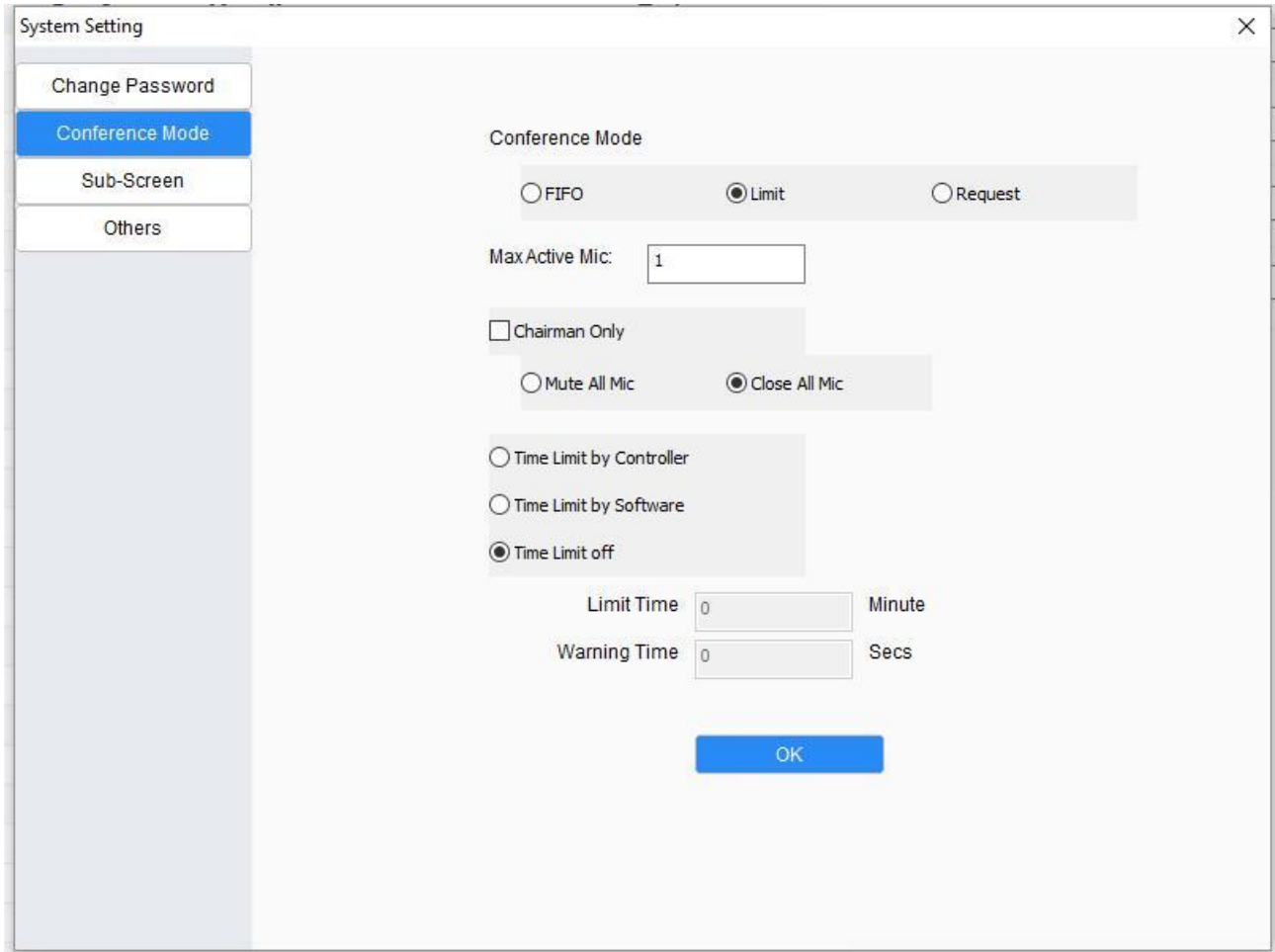
Clicking "System Setting" to enter system setting interface, there are four sub-menu in this part: "Change Password - Conference Mode - Sub-Screen - Others"

- **Change Password**



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

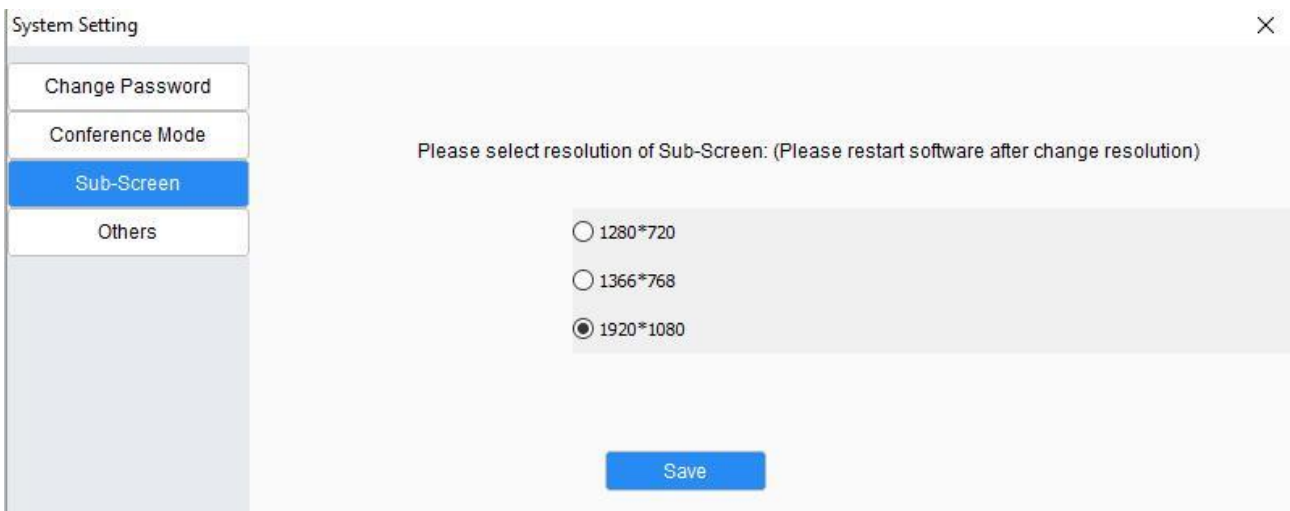
● **Conference Mode**



You can set conference mode in this interface, such as FIFO/Limit/Request, Max. Active Mic number (1-4), Chairman only function , Limit time (1-60 minutes) and warning time (1-60 seconds)

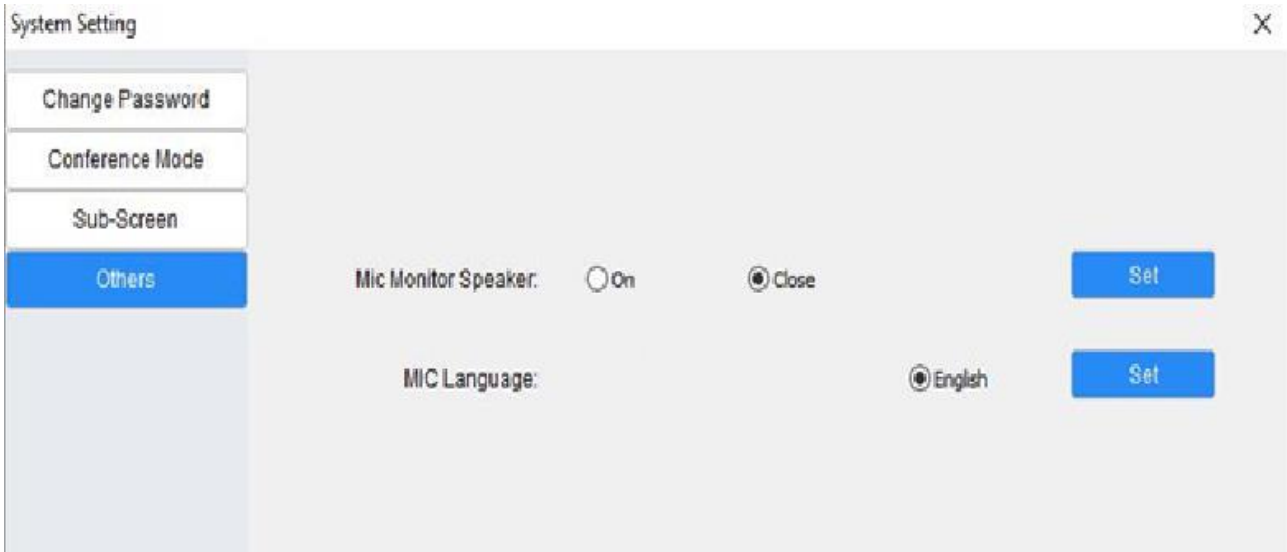
- When set time limit by software, the limit time will not show on microphone display when microphone is on, only Sub-screen display the limit time

● **Sub-Screen**



You can select the resolution of sub-screen ( projector/TV/LCD display...), Please restart the software after change the resolution.

- Others

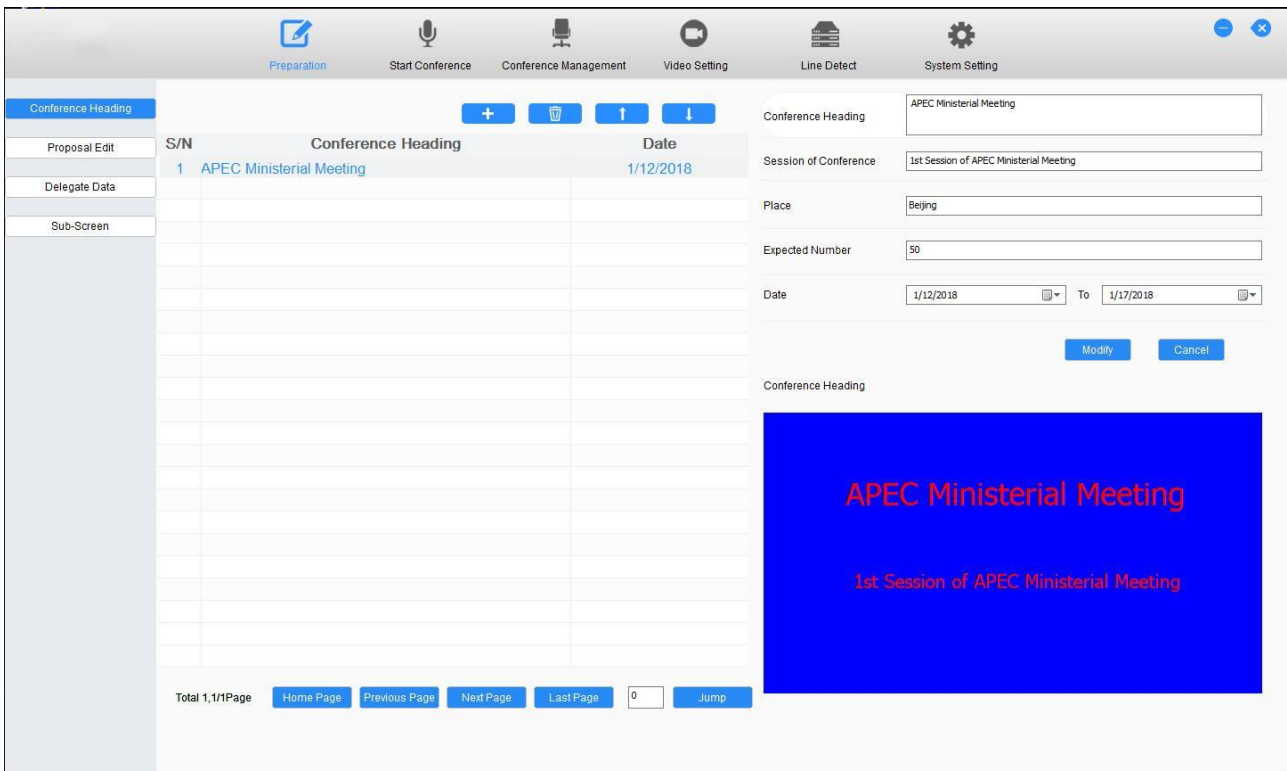


If the microphone built-in monitor speaker, you can set the speaker on/close in this interface, you also can set the microphone language if microphone with display panel.

### 5.2.2 Preparation

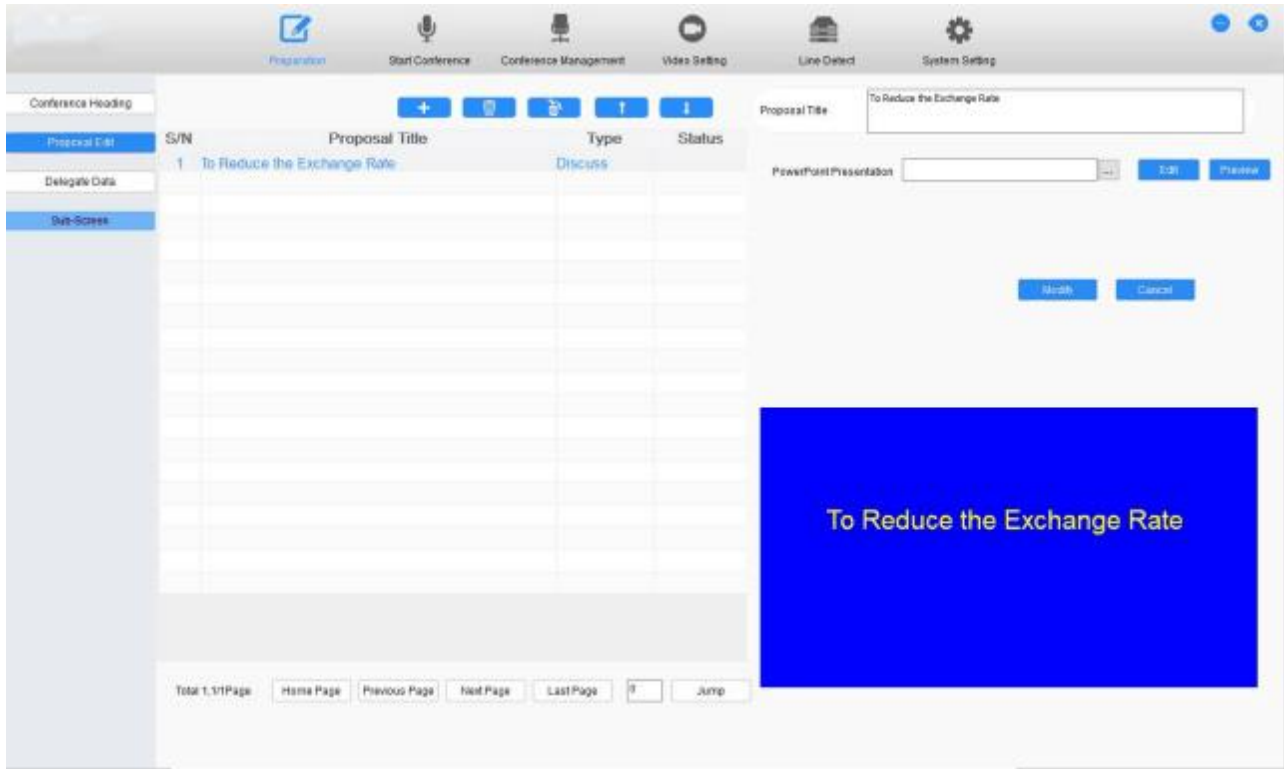
Clicking “Preparation” to enter system setting interface, there are four sub-menu in this part: “Conference Heading - Proposal Edit - Delegate Data - Sub-Screen”

- Conference Heading



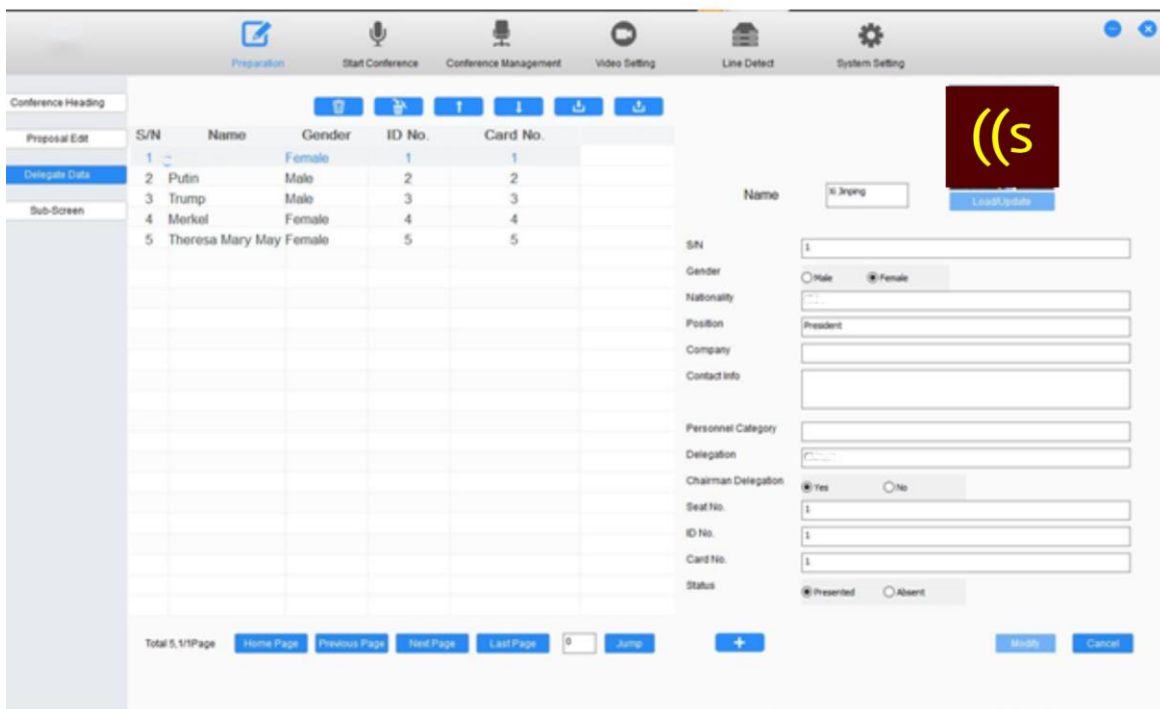
You can create/delete/modify a conference heading in this interface, the created conference heading will display in the bottom right corner according to the sub-screen setting.

- **Proposal Edit**












You can select one of the conference heading, and then create proposals for this conference heading, in this interface you can create/delete/delete all/modify the proposals, and the created conference proposal will display in the bottom right corner according to the sub-screen setting.

- **Delegate Data**



You can create and edit delegate data of the selected conference heading. The Delegate name can be displayed under microphone icon in conference control interface.

Items	Description and Function
	To create a new delegate data, please click this icon, input all necessary information in the text box and then save it
	Delete the selected delegate data
	Delete all delegate data
	Move up the selected delegate data ( change the S/N)
	Move down the selected delegate data ( change the S/N)
	Load the delegate data from computer. Operator can create a file named “ delegate data” in xls format and input all delegate data first, then load the data when prepare the meeting.
	Save all delegate data to computer in xls format
	Load/update delegate's photo ( photo must in bmp format)
	To modify the selected delegate data

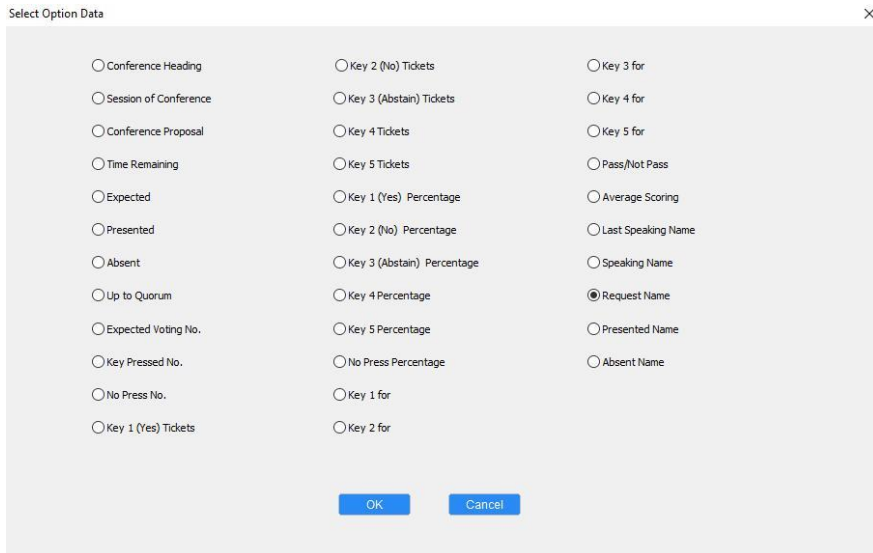
● **Sub-Screen**



Operator can set/edit display template for “Conference Heading - Conference Proposal - Last speaking Name - Current Speaking Name - Request Name”, the Sub-screen will display the Corresponding information according to the setting.

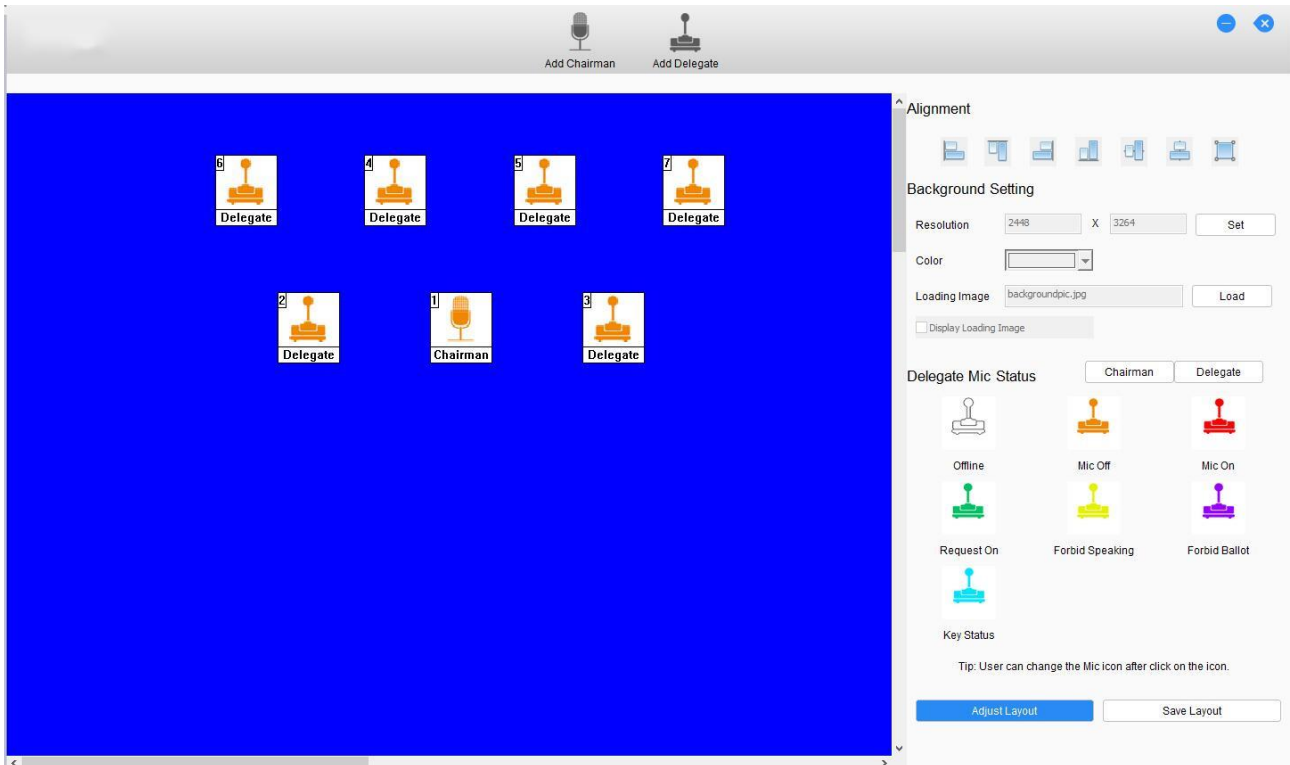
**Text Label:** Operator can create/edit text label for the display and input the necessary information in “Text Setting - Content” text box to update the display.

**Data Label:** Operate can create a data label and select the option data from the software to display on the sub-screen.



### 5.2.3 Conference Management

Clicking “Conference Management” to enter conference management interface, operator can add chairman/delegate mic icon for the conference and adjust the layout in the software, operator also can change the chairman/delegate status icon by himself. All setting/edit must after clicking “Adjust Layout”




**Add Chairman/Delegate:** Operator can add the chairman and delegate microphone icon for the conference.



### Add Chairman Icon

Tips: Please input the ID number in the text box you want to add, and input same ID number in both text box if there is only 1 mic icon to be add.




Click to change icon

Chairman ID:

 To

### Add Delegate Icon

Tips: Please input the ID number in the text box you want to add, and input same ID number in both text box if there is only 1 mic icon to be add.



Click to change icon

Delegate ID:

 To

**Alignment:** Set the microphone icon position in the control interface

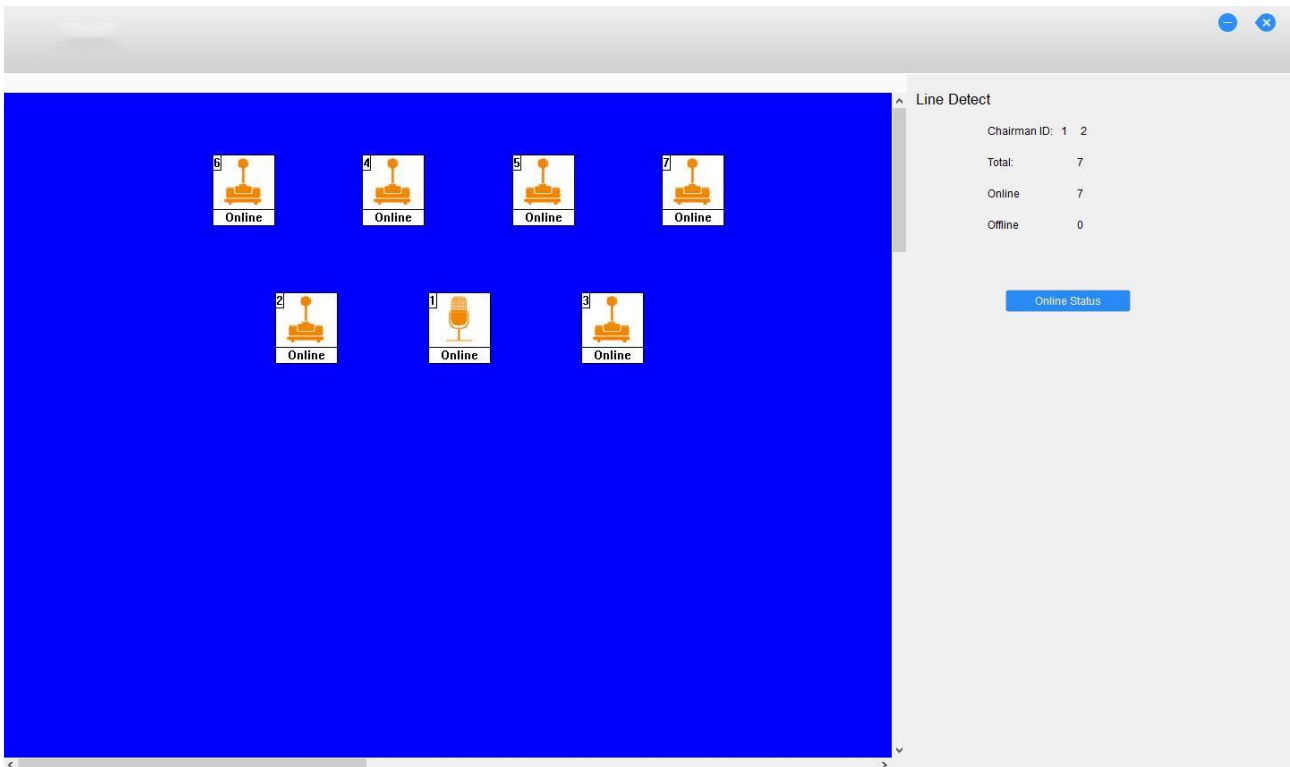
#### Background Setting

- Resolution: Set the background size
- Color: Set the background color
- Loading Image: Operator can add the background image for the conference layout, for example, the conference table/ emblem (the image resolution should same as background setting)
- Display loading image: to display or hide the background image

**Delegate Mic Status:** There are several default microphone icons with different color to show chairman and delegate microphone status, operator can edit them with user-defined icons

#### 5.2.4 Line Detect

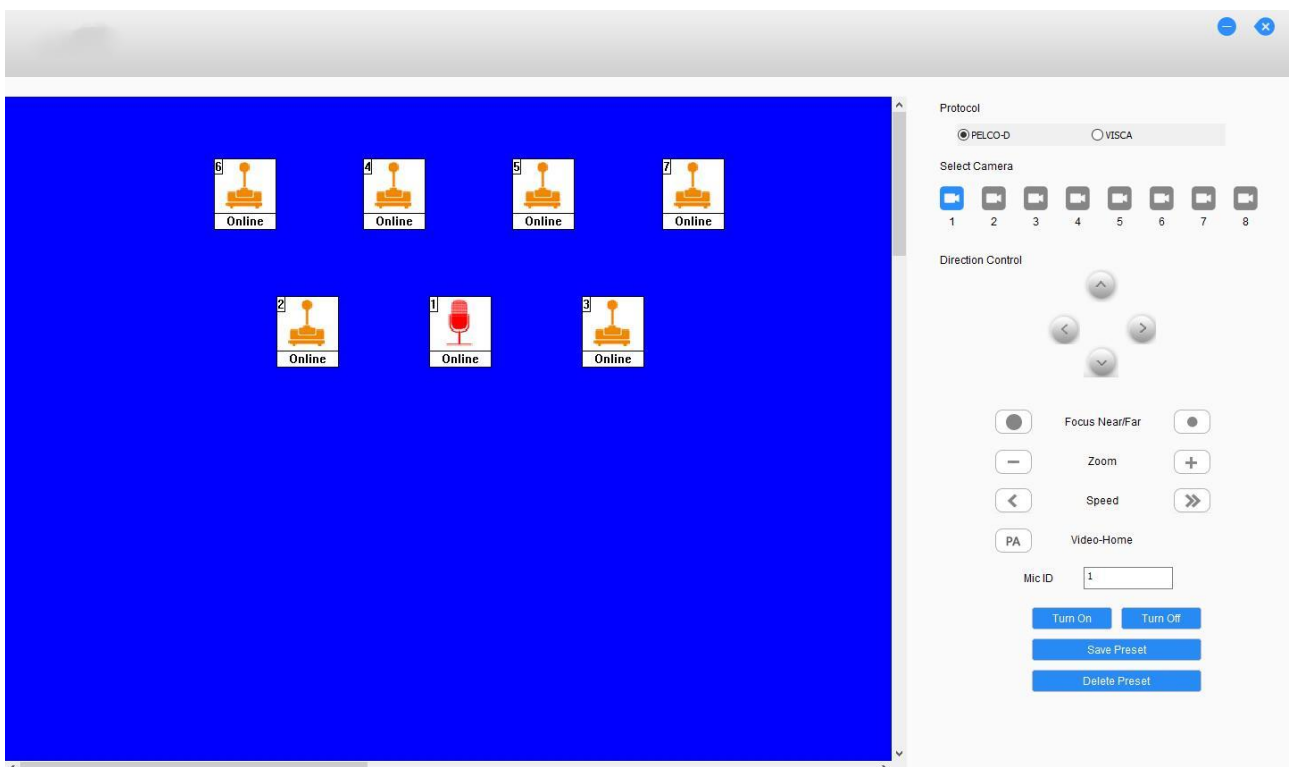
Before start conference, we suggest run line detect function to check the system microphone status first. Offline means that microphone has data communication problem. Chairman ID will display in the line detect results.



### 5.2.4 Video Setting

The software control can set camera presets for every conference microphone. If the conference microphone is switched on, video tracking system will automatically find the appropriate preset and focus on the speaker. The view of the speaker will be display 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.

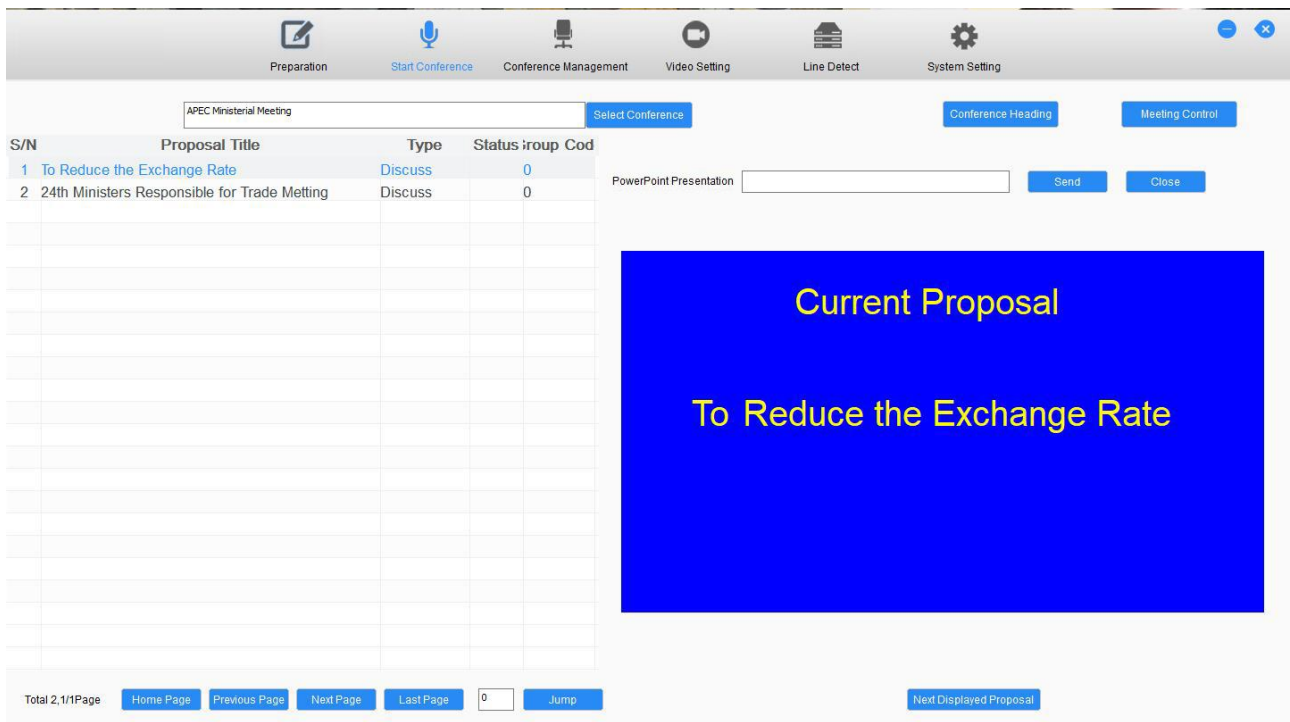
If the conference system is equipped with cameras, the system can carry out automatic video tracking, i.e. display the image of the speaking participator to the display devices ( large screen, TV and so on). Preset position is to set the preset position of each microphone



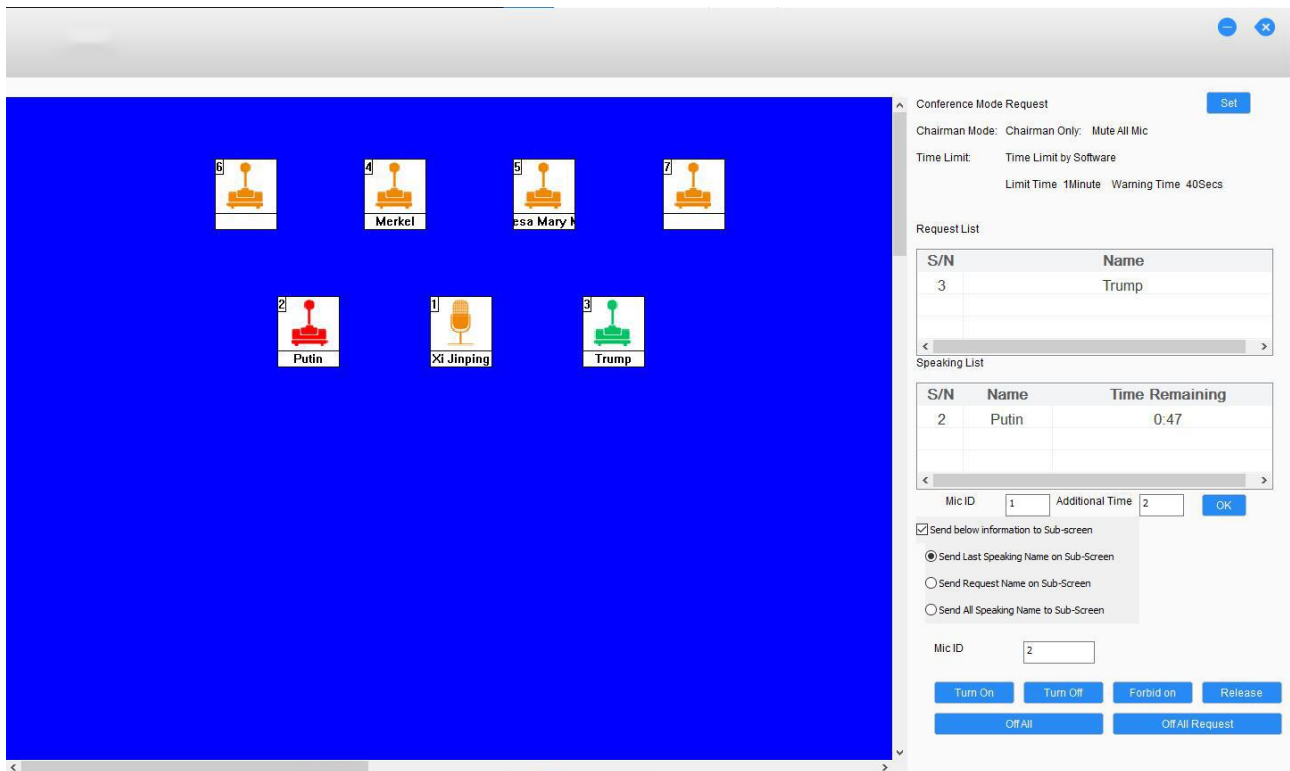
- **Protocol:** Select camera communication protocol (Pelco-D/Visca)
- **Microphone preset position setup**
  - a. Turn on the microphone with microphone id by software or by microphone on/off key first
  - b. Select the proper camera in the software,system support 8 high speed dome camera maximum, please select the proper camera to give the best image of each participator.
  - c. Adjust the camera angle by the four direction buttons, and click zoom in/out button to adjust the size of the video image
  - d. Clive the " Save Preset" button to save the current preset position to CMU if the adjustment is done;
  - e. Repeat the above steps to set the preset position for other microphones
- **Video-Home:** If operator wants to setup video-Home function, please select the proper camera to get the best image , and them click "PA" button to save the data to CMU. (Video-Home is the image on the display screen when all microphone off)
- The camera only tracking the last turned on microphone, if the last turned on microphone is off, camera will track the previous on microphones.

### 5.2.5 Start Conference

Clicking "Start Conference" to enter conference start interface, and then select the conference that operator want to start, all prepared proposal title will be display in this interface, operator can select one of them to displayed the title on the sub-screen. Operator also can load the presentation docs from the computer ( such as PPT) and send it to sub-screen.



After select the proposal title, operator can enter the meeting control interface to control this meeting, such as microphone on/off, conference mode, request list.



**Conference Mode:** All details of the conference mode will be displayed on the top right corner of the software, operator can change and reset the mode by "Set" Button.

**Request List:** If set the conference with request mode, the request microphone id and request participators name will display in the request list, operator can permit or refuse the request.

**Speaking List:** This part can display speaking participants microphone id number and name, if system set the speaking limit time, the remaining time also will display in this part, operator can give additional speaking time for any participants if necessary.

**Sub-screen Info:** Operator can set and choose the speaking/request name displayed on the sub-screen.

**Microphone control:** Please choose the microphone icons ( the icon will display the microphone id and participants name ) on the left part of the software or input the microphone id in the text box, operator can turn on/turn off/Forbid on/Release the microphone by the control button. The icons will display the microphone status with user-defined color

## Chapter 6 Accessories

### 6.1 Plug-gable stem microphone

➤ **Plug-gable stem microphone**



Option 1



Option 2

Functions and instructions

1. Electret condenser cardioid microphone
2. Two-color microphone on/off LED ring

Work State	Indicating light ( for long gooseneck)
Microphone On	Red (On)
Speaking time limit warning	Red (Flash)
Limited Mic	Green (Flash)
Request On	Green (Flash)
Auto coding	Red (Flash)

3. Metal stem with gooseneck to adjust angle and direction freely

➤ **Foam windshield**

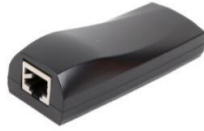


For gooseneck option 1

For gooseneck option 2

## 6.2 Terminal unit

The terminal unit must connect to the last microphone of each output path



## 6.3 Accessories

FTP Cat6 Ethernet cable is involved in the connection of conference system devices

Eleven types are available: 2 meter, 5 meter, 10 meter, 15 meter, 20 meter, 25 meter, 30 meter, 35 meter, 40 meter, 45 meter and 50 meter.



## 6.4 Earphones

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



Single earphone



Dual headphone

## 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's recommended that the chairman unit and the interpreter units are connected at the beginning of the output 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 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 unit, 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 HTDZ 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 lateral of the main unit. This unit should be placed in a position that doesn't interfere with its correct ventilation. This unit, for example, should not be placed on a bed, sofa cover or similar surfaces that could cover ventilation openings, or placed in a built-in installation, such a bookcase or a cabinet that could block air flow through ventilation openings.

### 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 environment conditions

Working conditions fixed/stationary/portable

Temperature range

- Transportation: -40 °C to +70 °C

- Operation: 0 °C to + 45 °C

Max.relative humidity: < 95% ( not condensing)

Safety: Compliant with CE,FCC,RoHS,(ISO9001:2015,14001:2015,45001:2018, 27001:2022 -IAF Certified)

EMC emission: Compliant with EN 55032

EMC immunity: Compliant with EN 55020

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	
Installation	Standard 19" rack
Dimensions (mm)	<p>The drawing shows a front view of the conference system main unit. It is a rectangular device with a width of 484 mm and a height of 88 mm. The depth is 15.80 mm. The drawing includes details of the front panel, such as a microphone grille, a display screen, and various control buttons and indicators.</p>
Color	Black
Weight	7.6 kg

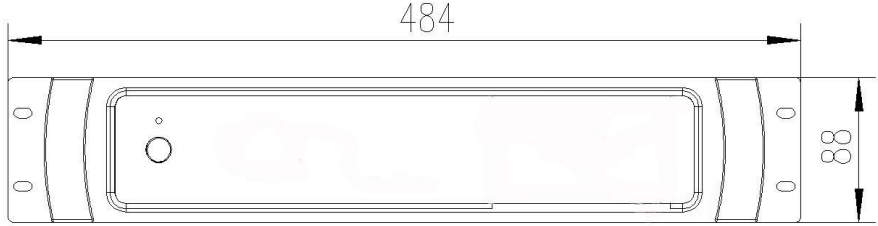
##### 8.2.1.2 Electrical characteristics

Conference system main unit	
Microphone capacity	≤ 350
Frequency response	20Hz-20KHz
SNR	> 96dB
T.H.D	<0.05%
Mains power supply	230V AC 50/60Hz
Audio output	+ 10dBu balanced
Output Voltage	24VDC
Control Interface	9 PIN, D-type (female), connecting the central control system main unit (RS232C)
	RJ45 Ethernet, Connecting to PC
	RS422 connecting to high speed dome camera
Maximum power consumption	300W
Connection	FTP Cat6 Ethernet cable
Connector	RJ45 Ethernet



## 8.2.2 Extension unit

### 8.2.2.1 Physical characteristics

Conference system main unit	
Installation	Standard 19" rack
Dimensions (mm)	
Color	Black
Weight	7.2 kg

### 8.2.2.2 Electrical characteristics

Conference system main unit	
Mains power supply	230V AC 50/60Hz
Output Voltage	24VDC
Maximum power consumption	300W
Connection	FTP Cat6 Ethernet cable
Connector	RJ45 Ethernet

## 8.3 Conference System microphone units

### 8.3.1 Electrical characteristics

Conference system mic unit	
Frequency response	20Hz -20Khz
Connection	FTP Cat6 Ethernet cable
Type	Uni-directional electret condenser microphone
Sensitivity	-44dB ± 2dB
Max power consumption	Series - 2.5W;
Directivity	> 20dB (1 kHz)
Equivalent noise	20 dBA (SPL)
Max. SPL	125dB (THD < 3%)
Gooseneck Length	Option 1: 30 cm ; Option 2: 42 cm

## 8.4 Earphone

### ■ single earphone

- Cooperates with the IR receiver or the conference unit
- Hi-Hi sound quality
- 32 Ohm ± 10%, Φ 3.5mm stereo jack
- Frequency response: 20Hz - 20KHz
- Nominal Input Power: 20mW (1KHz at 0.8V)
- Max. Input Power: 60mW
- Distortion: Within 5% (5mW, 1KHz)
- Sensitivity: 111dB ± 3dB/0.179V/ at 1KHz 5mW

■ **single earphone**

- Cooperates with the IR receiver or the conference unit
- Hi-Hi sound quality
- 8 Ohm  $\pm$  10%,  $\Phi$  3.5mm stereo jack
- Frequency response: 20Hz - 20KHz
- Nominal Input Power: 20mW (1KHz at 0.8V)
- Max. Input Power: 60mW
- Distortion: Within 5% (5mW, 1KHz)
- Sensitivity: 111dB  $\pm$  3dB/0.179V/ at 1KHz 5mW

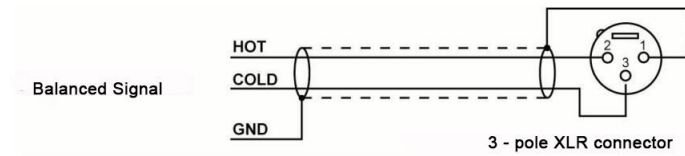
**8.5 System connection**

● **Mains cables**

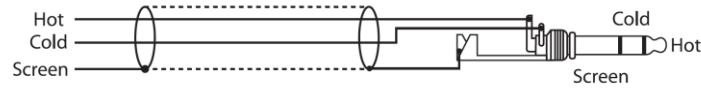
Blue: Neutral  
 Brown: Hot (Phase)  
 Green/Yellow: Earth/Ground

● **Type of connections**

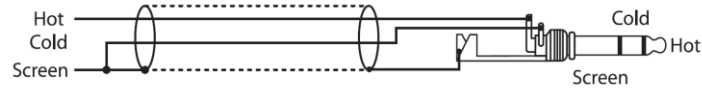
Balanced connection:



Balanced connection with TRS jack



Unbalanced connection with TRS jack



RCA Connection

