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# **Digital Conference System**

## **User Manual**

**TS-W100MD**

**Before using this system, please read this manual carefully**

## Notification



### WARNING

To ensure the reliability of the equipment and the safety of personnel, please observe the following when installing, using and maintaining:

- If any of the following conditions are found, please immediately turn off the power, plug out and quickly contact your nearest dealer. Do not continue using this unit, which may cause a fire or electric shock.
  - If you find smoke or have a strange taste from the machine.
  - If water or metal falls into the machine.
  - If the unit is dropped or the case is damaged.
  - If the wire is damaged (wire core exposure, broken wire, etc.).
- If the machine contains high-pressure parts, in order to avoid the fire or electric shock, absolutely don't open the case, if any questions please inform your nearest dealer.
- Do not place cups, bowls, vases or metal and other water-filled substances on the unit. Serious spilled liquid may cause a fire or electric shock.
- Never expose the unit to rain and any moisture or water, which may cause electric shock or fire.
- Do not place metal objects or flammable materials from the vents on the machine cover, nor place coins, which may cause fire or electric shock.
- Do not place heavy objects on the unit to avoid personal injury or property damage when the unit is slipping.
- Make sure that the volume is turned on at the beginning of the boot, and the high volume of the boot may cause hearing problems.
- Make sure that the volume is turned on at the beginning of the boot, and the high volume of the boot may cause hearing problems.
- For long-term accumulation of dust to be cleaned, please inform your dealer to regularly clean the machine, so as to avoid damage to the machine or cause a fire.
- The battery must be replaced with the same type of product and the correct installation should be made in order to avoid electrical damage and explosion hazard.
- The product is a Class I device. The device must be well connected to ground. The power plug must be connected to a power outlet with a grounding device to ensure that the equipment is fully grounded.

- This product uses a power plug or appliance input socket as a disconnecting device with the power supply, and must be disconnected if necessary for safety reasons.



- This equipment is only suitable for safe use at altitudes under 2000 meters.

## Precautions

### 1. The installation environment

When installing the unit, in order to ensure the normal cooling of the host, should avoid the poor ventilation of the place or high temperature environment, to avoid direct sunlight.

Recommend to install cabinet or other well-ventilated place indoor. If you use the machine in the outdoors, please pay attention to waterproof, moisture, lightning protection measures.

Avoid installing in a violent place of vibration; do not place other equipment on the machine.

Working temperature : -10°C~ 60°C.

Humidity is limited to 5% to 90% (non-condensing).

### 2. To avoid electric shock and fire

Do not touch the hands and the source with wet hands

Do not spill liquid on the machine, so as to avoid short-circuit or fire inside the machine.

Do not place other equipment directly on the top of the unit.

Non-professional service personnel Do not disassemble the unit yourself to avoid damage and electric shock.

### 3. Transport and handling

The packaging of the machine is designed and tested to ensure that the host will not be accidentally damaged during transport. It is best to use the original packaging when handling the unit.

Do not move the host device between the place or cold or over hot to avoid condensation inside the machine, affecting equipment life.

### 4. Please follow the warning instructions on this product, the warning signs on behalf of:

	Applicable to 2000 meters above sea level and below safe use
	Safe use only in non-tropical climates

## 5. Agreement

Please strictly follow the instructions in this manual. The software, hardware and appearance of this product will be upgraded and updated continually. The above changes will be made without notice.

Non-professional maintenance personnel, do not remove the product, to avoid damage and electric shock.

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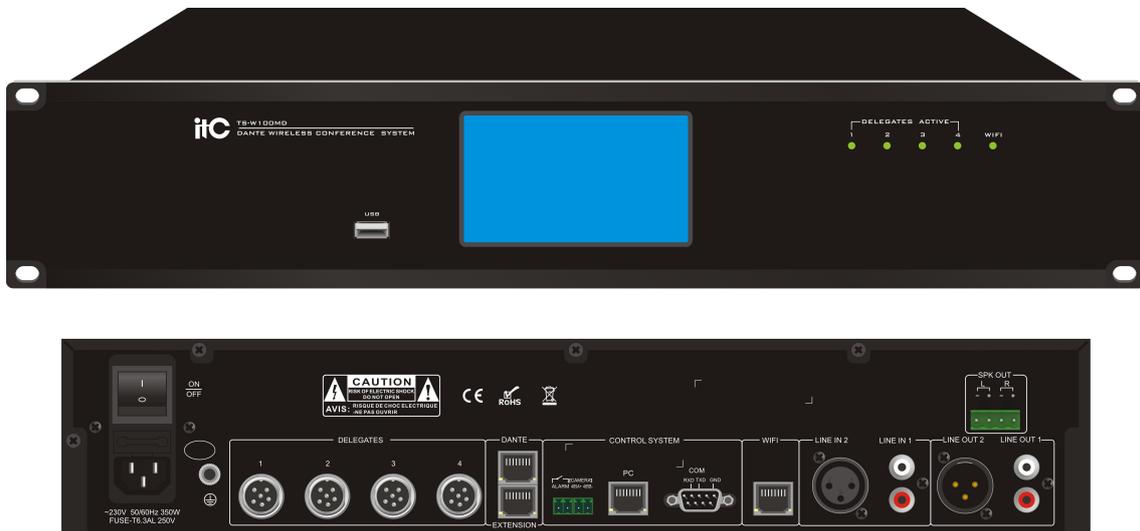
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## 1. System profile

The TS-W10 series full digital conference system adopts ITC original independent intellectual property rights of network communication and digital transmission processing technology. This system applies digital technology and network technology, and perfect combination and wired full digital technology to make a breakthrough on conference filed.

## 2. Product description

### TS-W100MD Full digital conference system controller

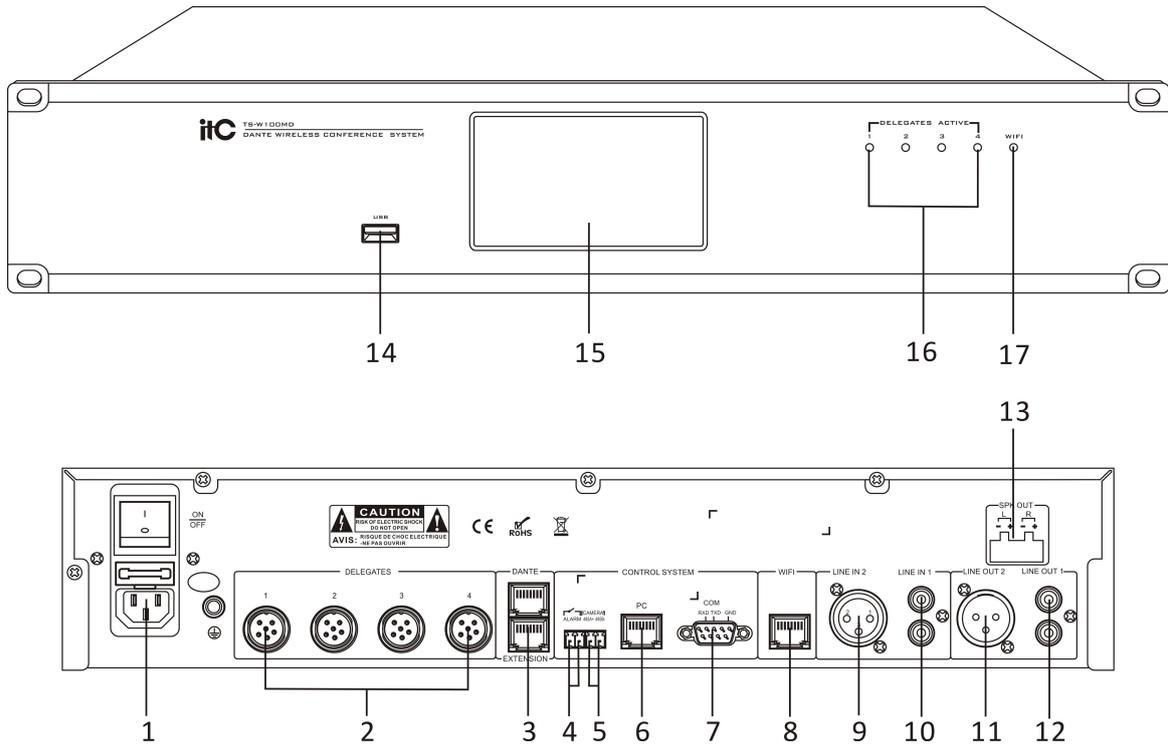


### Feature:

1. Adopts 5GHz communication band; With stronger anti-interference capability; with greater bandwidth and transmission speed; No interference by mobile phone and other Bluetooth device to make sure the best receiving signal.
2. It adopts the 128 bit AES encryption technology, supports WPA/WPA2 wireless security technology to prevent eavesdropping and unauthorized access to provide a higher confidentiality of conference system.
3. Built in high-performance dual CPU processor, superior processing capabilities, support conference system and full digital wired conference system
4. With extra-large capacity, the system supports the maximum 4096 delegate units, and support up to 300 wireless conference units, the system can open maximum 8 microphones, and for wireless delegate unites, support to open maximum 6 microphones at the same time.

5. With original digital processing and transmission technology, 48K sampling rate and uncompressed audio transmission with 20Hz~20KHz. Adopts CAT5 shielding line to ensure the reliable transmission of long-distance information conference to ensure the perfect sound quality.
6. With network interface, connected to the POE network switch to expand wireless AP quantity, and to provide much wider coverage
7. With manual / automatic ID setting function, convenience for quick layout of conference.
8. Audio interface with DANTE network, support dante network protocol.
9. Support interface switch of English and Chinese language.
10. PC software can view battery power status of the wireless unit, signal and other information.
11. One button to switch off all wireless units function.
12. Supports simultaneous interpretation function, supports 63+1 simultaneous interpretation with cable.
13. Built-in high performance DSP processor, stereo audio ADC and DAC supports the sampling rate of 8 kHz to 96 kHz and supports digital volume control, built-in 28/56 bit, 50 MIPS digital audio processor. All input and output audio volume can be adjusted. Supports equalizer, multi band compression, clipping and denoising processing algorithm, to provide better sound quality experience (It can control the audio parameters by PC software).
14. Support PC software uniform management system and fault analysis. Adopts TCP/IP network protocol to ensure the reliability and stability of the system, while supporting the system to separate from the PC software to work independently.
15. With fire alarm linkage trigger interface to provide fire alarm information, which remind the venue staff to evacuate ensure the safety of the participants at first time.
16. Support PELCO-D, VISCA camera control protocol, which can cooperate with high-definition camera tracking host, to achieve automatic camera tracking.
17. Four microphone management mode: FIFO/NORMAL/ VOICE (voice control) / APPLY.
18. Supports RCA, XLR audio input and output, and adopts the 3 pin XLR balanced audio line, to improve the anti-interference ability of the system.
19. Compatible with IEC 60914, GBT 15381-94 standard.
20. With recording function.
21. With 2x25w power amplifier.

## Products Features:

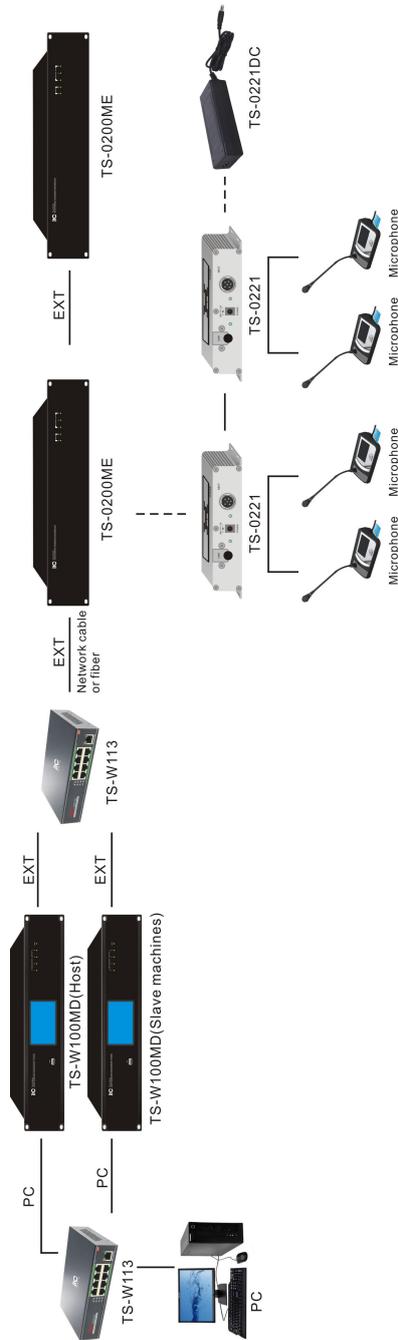


1. The power switch and the power input socket, support AC 110V~240V input
2. DELEGATES 1~4— use to connect conference units
3. Connect with the expansion controller, can realize controller connect “hand in hand” in series
4. Short circuit trigger fire alarm interface
5. Camera 485/422 communication interface
6. LAN network interface
7. RS-232 serial port, connect the camera
8. Wireless communication interface
9. Line audio XLR balanced input
10. Line audio RCA unbalanced input
11. Line audio XLR balanced output
12. Line audio RCA unbalanced output
13. Amplifier output interface
14. Recording storage U disk interface
15. LCD screen, used to display the current working state
16. Wired conference unit communication indicator
17. Wireless device input indicator

**Specification:**

Model	TS-W100MD
Microphone Capacity	≤4096
Channel Quantity	64CH
Frequency Response	20Hz~20KHz
SNR	>85 dB(A)
Dynamic Range	>80 dB
THD	<0.05%
Power supply	90~132VAC/180~264VAC by switch
Audio Input	LINE IN 1: 350mV balanced LINE IN 2: 350mV unbalanced
Audio Output	LINE OUT 1: 1V balanced LINE OUT 2: 1V unbalanced
Output Load	>1KΩ
Static power consumption	35W
Output Power Consumption	250W
Connection method	Specified Cable (6 Core)
Connector Reliability	Reliable
Standard	IEC60914
Working temperature	-10℃~+45℃
Working humidity	20%~80% relative humidity, no condensation
Touch screen control	4.3 inch TFT touch screen
Color	Black
Weight	About 3Kg
Dimension (L*W*H)	484 x 298 x 88mm
Installation method	19-inch standard cabinet
Recording	With recording function (support 2.0 U disk storage)
Amplifier (SPK OUT)	2x25W(4ΩBTL)

### 3. System connection diagram



Note: 1. The wired unit can be expanded to 4096 units by connecting TS-0200ME expansion host.

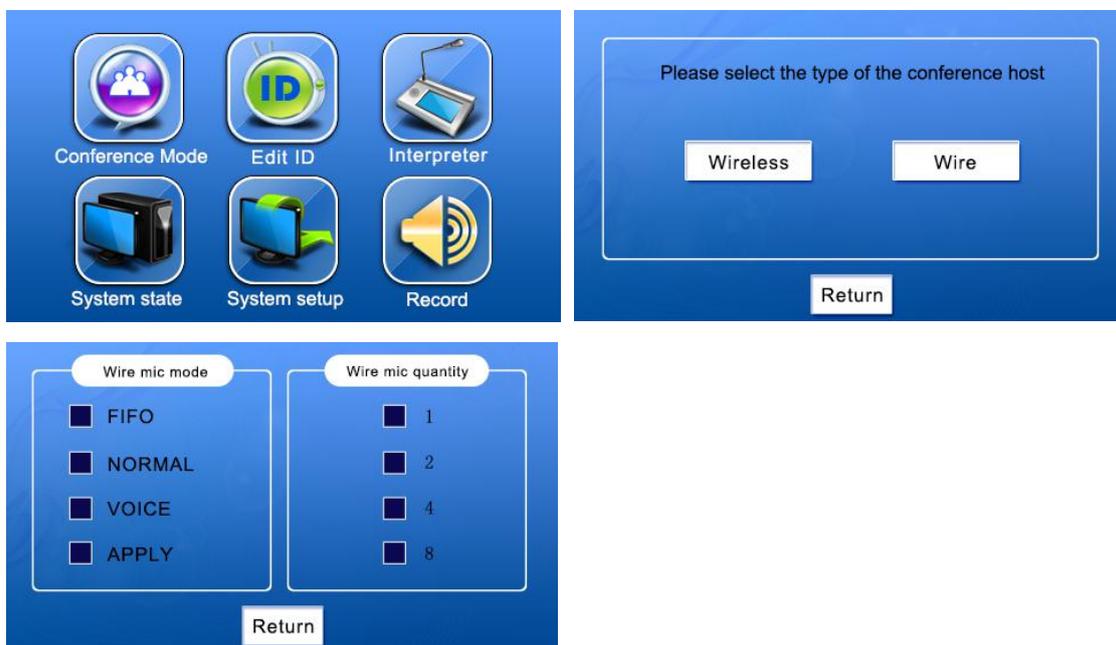
2. The conference host is only compatible with 100M switches and does not support Gigabit switches. The switch cannot be connected to other devices to prevent interference with the AP.

3. Camera tracking function. When there is only one camera, it can be connected to the conference host 485 interface or 232 serial port separately. When multiple cameras are tracking, it must be used with TS-0698 camera tracking host.

4. When setting up microphone tracking, set the microphone preset positions of units 1 to 22 in order to save the correct code, otherwise the serial port debugging assistant intercepts the microphone shutdown code error.

## 4. Function Operating Instructions

### 4.1 Wired conference management



Enter from the conference mode of main interface, then select the wired mode, can enter into the wired mic management mode. Total 4 Mic modes, can switch to choose one according to the requirements. The number of mic is the max number of mic currently allowed  $N(N=1/2/4/8)$ , can switch to choose one.

#### 4.1.1 FIFO Model

##### ①FIFO delegate units working management

First in first out: when the total number of working mic units is less than  $N$ , delegate units will be turned on directly; when the total number of working mic units is  $N$  and not all chairman units, delegate units will be first in first out working.

##### ②FIFO chairman units working management

Preemption Mechanism: Chairman unit can seize the turn on right of delegate unit.(the total number of working mics is  $N$  and has delegate units, turn on the current chairman unit, the first opened delegate unit will be kicked out. Turn off the delegate unit and turn on the current chairman unit).

Tips for opened mics number is full. Chairman units has no FIFO mechanism, when the total number of working mic is  $N$ , and all are chairman units, turn on more chairman unit, the interface will display “mic number is full” .

Priority: press “priority” button of chairman unit, start the chairman priority function,then all delegate units will be turned off immediately. If this chairman unit is not turned on before, then this chairman unit will be turned on(if current working mic is full and all are chairman units, this chairman unit will not be turned on).

#### 4.1.2 NORMAL Model

#### ①NORMAL delegate units working management

Waiting mechanism: when number of working mic unit is N, turn on more delegate units will enter into waiting status, the max number of waiting will be N. delegate units which is waiting can be dropped out the waiting status if press “ON” again. When one unit is turned off, the first unit in waiting status will be turned on automatically.

#### ②NORMAL chairman units working management

Preemption Mechanism: when number of working mic is N, turn on the Chairman unit can squeeze out the delegate unit.(turn off the first delegate unit, then turn on the current mic unit).

Tips for working mics number is full. Chairman units has no waiting mechanism, when the total number of working mic is full, and all are chairman units, turn on more chairman unit, the interface will display ”mic number is full”

Priority: press “priority” button of chairman unit, start the chairman priority function, then turn off all delegate units or stop waiting status . If this chairman unit is not turned on before, then this chairman unit will be turned on(if current working mic is full and all are chairman units, this chairman unit will not be turned on).

### 4.1.3 VOICE Model

#### ①VOICE delegate units working management

Waiting mechanism: when number of delegate unit is N, turn on more delegate units will enter into waiting status, the max number of waiting will be N. delegate units which is waiting can be dropped out the waiting status if press “ON” again. When one unit is turned off, the first unit in waiting status will be turned on automatically.

#### ②VOICE chairman units working management

Voice mechanism: chairman unit can automatically detect the current speech, speak to the chairman unit can automatically turn on its microphone.

Preemption Mechanism: when number of opened mic is N, open the Chairman unit can squeeze out the delegate unit.(close the first delegate unit, then open the current mic unit)

Tips for opened mics number is full. Chairman units has no waiting mechanism, when the total number of opened mic is full, and all are chairman units, open more chairman unit, the interface will display ”mic number is full”.

Priority: press “priority” button of chairman unit, start the chairman priority function, that means all delegate units opened status and waiting status will be invalid immediately. If this chairman unit is not opened before, then this chairman unit will be opened(if current opened mic is full and all are chairman units, this chairman unit will not be opened).

### 4.1.4 APPLY Model

#### ①APPLY delegate units working management

APPLY Mechanism: press”ON” button of delegate unit, that means apply to open the mic from Chairman unit. The button “3” of chairman unit will twinkle, and display” delegate unit apply to speak”(Chairman unit press button”3” means agreed, then the mic units which applied to speak will be opened.) The total number of applied mic is N, if exceed N, will display “Mic Applied is Full”. Press “ON” button of delegate unit again when it is on applying status, can exit the applying status.

Automatic revocation mechanism: when the delegate enter into the applying status, if the chairman unit didn’t agree after 15S, then applying will be autorollback and exit applying status.

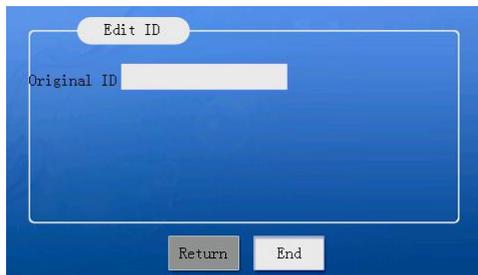
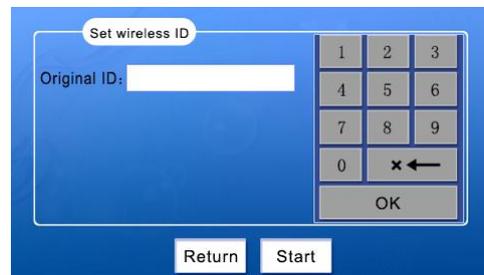
## ②APPLY chairman units working management

Preemption Mechanism: when number of opened mic is not exceed N, open the Chairman unit can squeeze out the delegate unit.(close the first delegate unit, then open the current mic unit).

Tips for opened mics number is full. Chairman units has no apply mechanism, when the total number of opened mic is full, and all are chairman units, open more chairman unit, the interface will display "mic number is full".

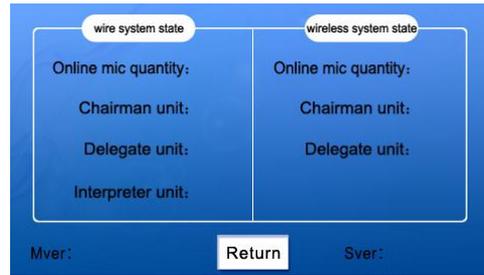
Priority: press "priority" button of chairman unit, start the chairman priority function, that means all delegate units opened status and applying status will be invalid immediately. If this chairman unit is not opened before, then this chairman unit will be opened(if current opened mic is full and all are chairman units, this chairman unit will not be opened).

## 4.2 ID Setting



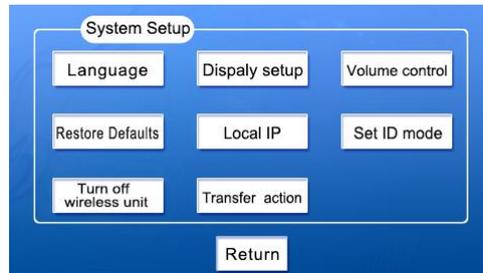
Click ID Setting in the main menu to enter into ID setting interface. If the first ID number needs to be changed, select the first ID box and change the first ID number by the number keypad ( from 1 – 4096). When the first ID number is greater than 300, then the first ID number of units starts from 1, because the capacity of this system to hold units is max 300. Click "Ok" to save the changed number. Click "Start" to start ID setting. The operator can set the ID manually by press the "Power On" button (the microphones will display their IDs and the currently available IDs). After the operation, if the indicator turns red, then the operation is success (the current ID is set to be the ID of this unit). Click "End" to close the ID setting interface.

## 4.3 System Status



Click “System Status” in the main menu to enter into system status interface. The operator can check the quantity of online discussion units and their categories. If the current system has chairman units, delegate units and interpreter units, the operator can check the changing status by pulling out and plugging in the chairman and delegate units (the time of the controller to detect the plug-in and plug-out is 1 minute max in system idle status. If the status is not changed within 1 minute, please wait until it changes. Frequent plug-in and plug-out is strictly prohibited).

#### 4.4 System Setting



Click “System Setting” in the main menu, there is 8 sub items in the system setting interface.

##### 4.4.1 Language Selection



Check the corresponding options to select the language.

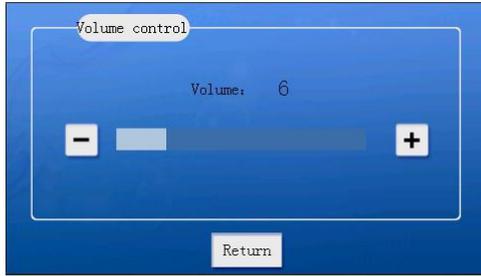
##### 4.4.2 Display Setting



Click +/- to increase or decrease the brightness. And the operator can also adjust the brightness

by sliding the slider by hand. The brightness value can be adjusted from 1 to 64.

#### 4.4.3 Volume Adjustment



The connection way of hardware: connect the external audio source device into LINE IN 1/2 interface, and the audio is output to power amplifier and speakers via LINE OUT 1/2 interface.

Click “Volume Adjustment” in system setting interface to enter into volume adjustment interface. Click +/- to increase or decrease the volume. The volume value can be adjusted from 0 to 30. When adjusted to 0, the means mute the BGM.

#### 4.4.4 Restore Default Parameters Setting



Click “Restore Default Parameters” interface, click “Yes” to conduct restoring default parameters. The default parameters including:

The meeting mode is FIFO, the max opened microphone number is 1;

The max sign-in number is 999;

The first ID number starts from 0001;

The default language is Chinese, and brightness is 64;

The initial master volume, treble and bass are all 0dB,

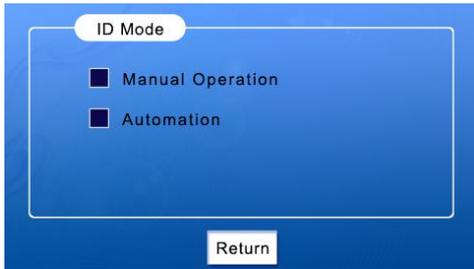
The IP address of the controller is 192.168.168.100, subnet mask is 255.255.255.0, gateway is 192.168.168.1, and number of ports is 50000.

#### 4.4.5 Local IP Address



Click “Local IP Address” to check the local IP address, gateway, subnet mask and port number.

#### 4.4.6 ID Setting Mode



Click “ID Setting Mode” to choose the automatic and manual mode of wired units.

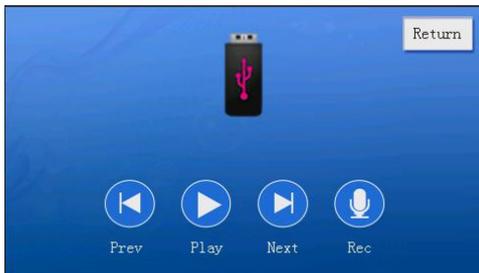
#### 4.5 Recording



Click “Recording” in the main menu. Then the operator can play the BGM or record the mixing sound in LINE IN and MIC, if the USB was plugged in.



If no USB plugged in, the system will prompt “Please plug in the USB”.



If USB was plugged in, the interface will display the USB icon, You can play background music and recording.

#### 4.6 Camera control

Conference host support VISCA / PELCD\_D camera protocol, the user can directly connect a camera through 232/422 method, you can also connect the camera tracking host to multiple cameras,

Need to use PC software to achieve the camera settings, currently only support to track the wired microphone.

#### 4.6.1 Camera connection and configuration

①422 mode --- users can connect to the camera's 3,4 port directly by using CAMERA-422 interface which behind the host ,through the PC software prepare before the meeting->camera control page to operate VISCA / PELCD\_D protocol camera, if finish setting the corresponding camera place, selecting and saving the preset position, then save all unit present position, Finally to select the panorama and save (must follow this order). After saving, the user can choose the preset position and see if it is correct. After finishing, check if the camera retreat mechanism is correct through to turn on/off the microphone.

②232 mode --- the user can connect the conference host CONTROL SYSTEM interface by Camera factory configuration 232 cable,then it can operate the camera same as the 422 mode.

③The CONTROL SYSTEM interface connect to the camera tracking host TS-0690 the CONTROL interface through the 232 cable, and then track the host CAMERA NET T / R +, T / R- two interface connected to the camera's 3.4 interface, then it can control VISCA / PELCD-D protocol camera like above.

#### 4.6.2 Camera tracking instructions

①Upgrade: open the microphone, the camera automatically track to the latest open microphone position.

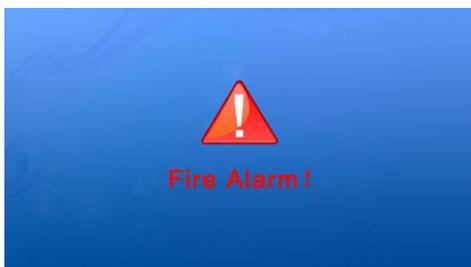
②Degraded: Turn off the microphone, the camera automatically back to the final open microphone position.

③Midway state changes: During using, there is a microphone halfway off, then the microphone position will be automatically cleared, upgrade and degrade mechanism remains the same.

④No microphone status: The camera will point to the panorama.

For example: there are 1,2,3,4 camera, when open the 1,2,3,4 microphone in turn, the camera followed by tracking 1, 2, 3, 4 microphone position, if turn off the No. 2 microphone, The camera does not change. If you turn off the No. 4 microphone, the camera points to the 3 position. Turn off the No. 3 microphone and the camera is pointing to position 1. Turn off the No. 1 microphone and the camera points to the panorama position.

## 4.7 Fire alarm



The conference host touch screen, unit screen, PC software(version 2) displays the prompts by shorting the two signal pins of the ALARM output behind the conference host (analog sending the fire alarm signal to the host). At this time, the conference unit not only has no change on display screen , but other features can still be used. When this interface signal pin detects the cancellation of the fire alarm (ie, open), it will automatically return to normal.

## **4.8 Other functions**

### 4.8.1 Extension host

The EXTENSION port behind the host to connect the extension host, it can use its normal function when external connect TS-0205, cascading TS-0206.

### 4.8.3 COM port usage

COM port of Host rear panel connect to the TS-0698 camera tracking host.

### 4.8.4 485 interface usage

485 interface of host rear panel connect to a camera.

# Digital Conference System

