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NOVO CONFERENCE SYSTEM

WIRED CONFERENCE SYSTEM
WITH DANTE™ NETWORK INTERFACE



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Installation and Operations Manual

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Introduction



01 Safety Operation and Notice

1. Please read instructions for safety operation carefully before installation and operation. Please keep your safety operation guide safe for future reference.
2. Do not scratch, bend, twist, stretch or heat the power cord as this may cause damage to the power cord, resulting in a fire or electric shock.
3. Do not open the device shell, otherwise it may cause electric shock. If you need to repair, maintain or repair, please contact your local agent.
4. Do not touch the power plug with wet hands as this may cause a fire or electric shock.
5. Do not attempt to modify this device. Failure to do so may result in personal injury or product malfunction.
6. Do not use this equipment near water.
7. If the power cord is damaged (such as a broken wire or bare core), obtain replacement parts from your dealer. Continued use of the equipment with a damaged power cord may result in fire or electric shock.
8. To move the device from the power, unplug the power cord, and unplug all connecting cables as this may damage the cable, resulting in a fire or electric shock.
9. Before cleaning the device, unplug the power cord and unplug all connecting cables. Please clean it with a dry soft cloth.
10. If the device is not in use for a long time, turn off the power, it is best to unplug the socket.
11. With the power plug and appliance coupler as the disconnecting device, it should be kept easy to operate.
12. For the safe use of the equipment and adequate ventilation, the minimum clearance around the equipment should be maintained at a distance of 5 cm or more.
13. DO NOT cover the Ventilation holes, such as: newspaper / fabric / curtains and other items.
14. Equipment should not be placed on a bare flame source, such as: lit candles.
15. Battery should not be exposed to sunshine, roasted or other high temperature overheating environment.
16. Do not throw the waste battery, please put in the designated bins.
17. Water protection rating: IPX0
18. The device can be used normally in tropical / temperate climates.
19. This symbol "⚡" indicates that dangerous voltage constituting a risk of electric shock is present within this unit.
20. All ERTHPOT products will be offered with 3 years warranty. This warranty does not cover defects or damage arising from improper use or maintenance, normal wear, and tear, commercial use, accident, or external causes. Unauthorised repair, modification, or customisation of your product voids this warranty.

02 System Overview

Novo Conference System is a wired simple and affordable conference discussion system with exquisite design focusing on plug n play operation. Its various applications include small to medium conference rooms, assembly halls & classrooms. The system can handle upto 110 microphone units simultaneously with many utility settings like automatic sound activation, time limiting, number of active speakers etc.

All the units communicate with the central controller using a standard STP Cat5e network cable which makes it very cost effective and easy access to troubleshoot. The discussion units are engineered in high quality aluminum alloyed metal die-cast which give them the robust and long lasting feel. All these units come with integrated high sensitivity shotgun microphone with a status light ring (red when mute, green when active) at the bottom.

Visuals are part of our life now. This new generation of conference system allows to connect up to 4 video cameras to the system who can follow the active speakers in the room. This new plug n play conference system is pretty much everything you look for whether it is simplicity, ease of use, audio-video integration etc

03 System Performance Feature

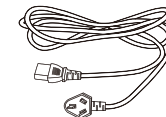
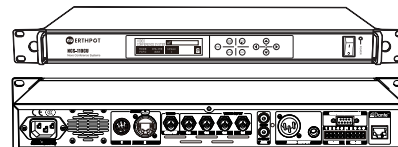
- Wired loop In-Out connectivity to microphone units on standard Cat5e Network Cables
- System Expandability of up to 110 units using external power supply for discussion units
- Multiple speech modes - FIFO, Automatic (with time limit), Request, Sound Activated
- Can adjust the active microphone units 2/3/4 in a system
- Supports Camera connection and tracking of the speaker through RS232 & RS422 communication ports
- Supports 2x2 Dante digital input & output to connect to other digital conference solutions
- Automatic Gain processing technology to prevent feedback and improve voice clarity

04 Microphone Unit Performance Feature

- Intrigated Gooseneck microphone with cardioid pickup capsule which provides clear and full sound quality, high sensitivity, and a good long-distance pick-up effect.
- Speaking status indicator: red when mute, green when speaking.
- Convenient loop through cabling via standard cat5 category.
- In-bulit mute button with status led.
- Aluminum finished metallic die-cast bod Aluminum finished metallic die-cast body.

05 Packing List

- Wired conference system main controller * 1
- Power cable * 1
- 1 meter audio cable * 1
- Three-way matching terminal * 1
- 10m network cable * 1
- Quick connector(female) * 2
- Rack mount kit (including screws) * 1set
- Simple operation manual * 1



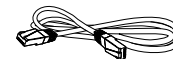
Power cable



Audio cable



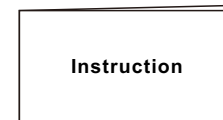
Three-way
matching terminal



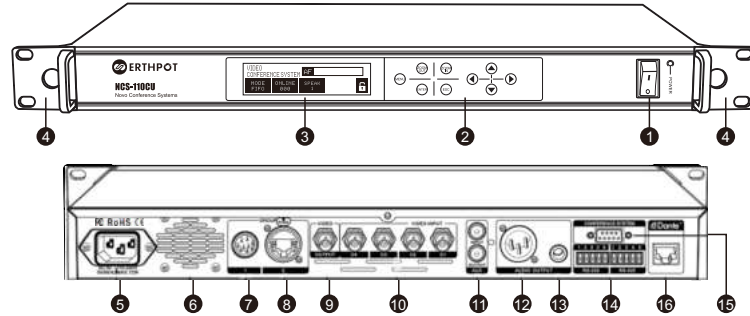
Network cable



Quick connector
(female)



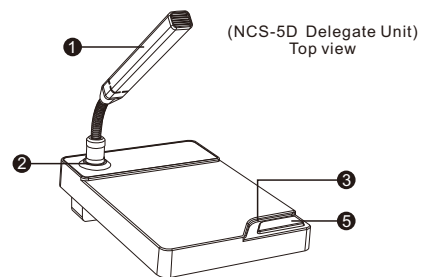
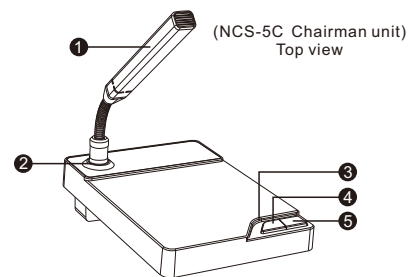
06 NCS 110-CU Introduction



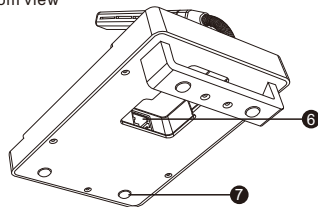
- ① POWER switch (with indicator light)
- ② Touch panel: touch control panel buttons.
- ③ OLED display: display settings and parameters
- ④ Rack mount kit: fixed installation.
- ⑤ Power input: standard IEC socket, can work in 110V/240V 50/60Hz AC power supply.
- ⑥ Heat dissipation fan: Used to lower the temperature of components inside the host.
- ⑦ 9-pin aviation male connection port: It can be connected to the 9P port conference unit through the 9P aviation cable, and used with the auxiliary power supply EXP-124. A total of 110 conference units can be connected.

- ⑧ Female Ethernet port connection port: It can be connected to the NCS-5C/D conference unit through a network cable. It can be used with the auxiliary power supply NEB-124W. A total of 110 conference units can be connected.
- ⑨ Camera BNC Video Output Port: mainly output camera video data.
- ⑩ Camera BNC Video Input Port: Connects to the camera's video output and can connect up to 4 cameras for video output.
- ⑪ RCA audio line port:
 1. Input port: can be directly connected to MP3 / DVD and other external audio signal input.
 2. Output port: Connects directly to the mixer or recorder.
- ⑫ Balanced XLR audio output port: XLR port can be connected to the mixer using a standard two-conductor shielded cable.
- ⑬ Unbalanced audio output port: ϕ 6.3mm port can be connected to an unbalanced input of a mixer or amplifier using standard unbalanced audio port.
- ⑭ Quick connector port: Camera communication port, can Control Up to 4 Cameras Compatible with VISCA, PELCO-D, PELCO-P 3 Camera Control Code Protocols.
 RS-422 port pin definition: 1.TXD- 2.TXD+ 3.RXD- 4.RXD+ 5.GND
 RS-232 port pin definition: 1.DSR 2.RX 3.DTR 4.TX 5.GND
- ⑮ 9-pin serial port control interface: Connect intelligent control system to achieve camera tracking.
- ⑯ Dante network port: Can connect devices that support various Dante protocols.

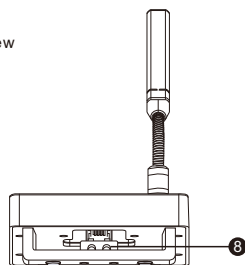
07 NCS-5C/5D Introduction



Bottom view

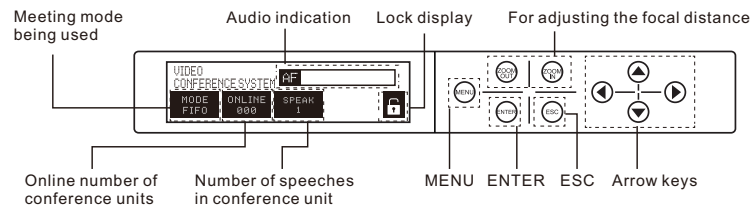


Rear view



- ❶ Conjoined capsule: High-quality condenser microphone provides clear and full sound quality, high sensitivity, and good long-distance pickup effect.
- ❷ Working status indicator: The light is off when muted, the light is on when speaking, the light flashes when waiting for the application.
- ❸ Speaking status indicator: red when mute, green when speaking.
- ❹ Priority speech key: allows the chairman unit to switch off the delegate unit being used. The chairman unit may choose to approve or not to approve the delegate unit to speak when applying for speech mode.
- ❺ Speaking key: When you press this key, the microphone speak indicator light and work light will be lit at the same time, the microphone is also open, press the button again, indicating the aperture and work lights off, and the microphone is turned off.
- ❻ RJ 45 network cable port: connect to the conference system host, provide power supply and establish communication for the conference unit.
- ❼ Anti-vibration insulating glue, reduce the impact and vibration on the desktop.
- ❽ Network cable card slot: used to fix the network cable, unscrew the screw at the bottom of the groove, then place the network cable in the groove, and then tighten the screw.

08 Setup and operation



Before the meeting starts, please connect the host unit and the delegate unit to the host computer to turn on the host. At this time, the host power indicator and the work indicator of each unit will be on, and the system will automatically search for the number of active microphone units and display on the LCD panel. If the number of microphones displayed on the LCD does not match the actual number used, check that all microphone units are connected to the system correctly.

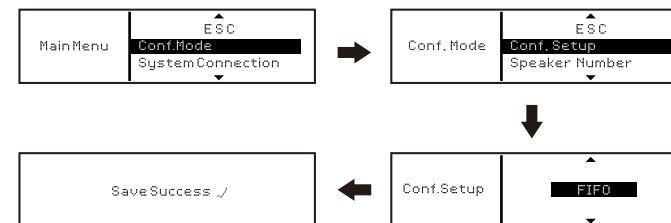
A. Startup main interface

After turn on the power switch, the NCS-110CU main controller starts searching for online microphone units. After the search is completed, the number of online microphone units is displayed. The microphone unit must be connected to the host before data communication can be performed.



B. Conference Setup

- ① Touch the "MENU" button on the host panel to enter the conference setting menu, press "▲ / ▼" to scroll through the menu to select the conference mode, and then press "ENTER" to enter the next level. You can select one of the 4 speaking methods "FIFO", "Limited Time", "Request" and "Voice Activation".



FIFO: can active "1/2/3/4" microphone units in a time. When speaking microphone over the limit number of speakers who spoke first will be override. (The chairman unit is not limited) to keep the total number of open speaking units.



Limit Times: Allow maximum 5 speaking units, and can set the microphone to open 1min to 100 min, when the limited time is reach, subsequent microphone speaks. (The chairman unit is not limited) When the number of microphone speech units that have been turned on has reached the preset number (1/2/3/4), the delegate microphone units that apply for speech later are in the waiting state (the "Limit Times" displayed on the display of the microphone unit and The microphone indicator will flash, and the host will display the number of microphone speeches and the number of speeches waiting). After the microphone unit that has been opened for speech is closed, the representative unit waiting for speech will automatically start to speak to maintain the total number of open speech units.



Request: The operation of delegate unit should be approved by chairman unit.

- Chairman's microphone unit approval: When applying for the speaking mode, the chairman unit has been speaking for a long time. When a delegate unit requests to speak, press the "REQUEST" speak button to allow the delegate unit, and press the "PRIORITY" priority button to reject the delegate unit.
- Main controller default approval:

"Enable Speak" means that the main controller passes by default when the chairman unit has not approved.

"Disable Speak" means that the main controller does not pass the delegate unit by default when the chairman unit has not approved.

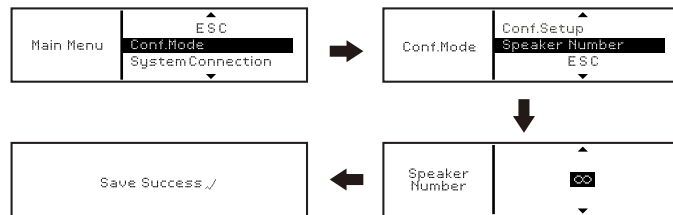
"REQUEST" shown on the display when the delegate unit requests to speak the microphone indicator light will flash, and the chairman unit display will show the ID code of the delegate unit and "REQUEST" flashing. At this time, the chairman unit can approve or reject to speak. After the delegate unit speaks 20 seconds, if the chairman unit does not approve it, the main controller will approves it by default. When the number of microphone speeches has reached the preset number of turns on (1/2/3/4), the delegate unit request to speak later is in a waiting state (the main controller displays the number of microphone speeches and the number of waiting speeches). When the delegate unit is passed, it will turn off the first one to maintain the total number of open speech units.



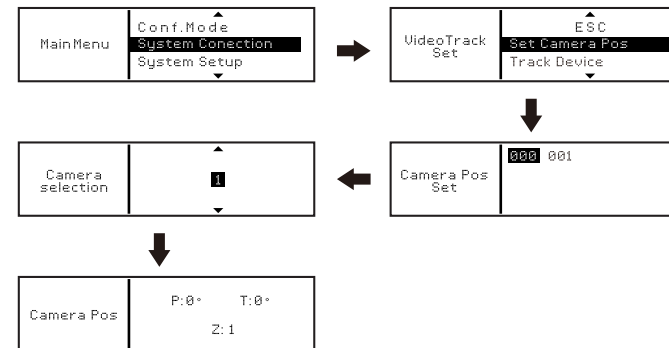
Voice Activation: When the sound pressure picked up by the microphone unit is greater than the preset threshold, the speech will be automatically turned on. The sound pressure threshold can be set by the "Sensitivity" setting. When set the "Sensitivity" higher, and the lower of sound pressure threshold, it can easier turn on the microphone. Only one delegate unit can speak the under voice activation mode, when the maximum number of speakers is reached, subsequent microphone speaks.



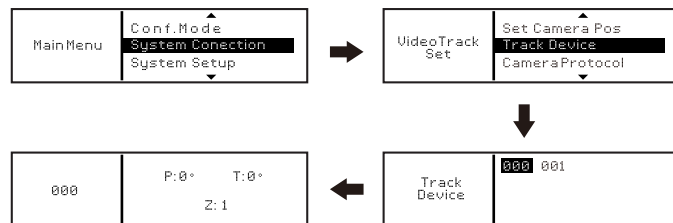
- ② Touch the "MENU" button on the host panel to enter the conference setting selection menu, press "▲ / ▼" to scroll through the menu to select the number of speaking units, and then press "ENTER" to enter the next level. You can select the number of microphone units that speak at the same time, respectively ∞, 2, 3, 4 quantity options.



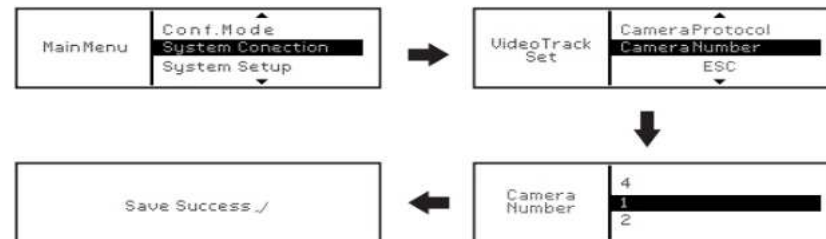
- ③ Touch the "MENU" button on the host panel to enter the video tracking setting selection menu, press "▲ / ▼" to scroll through the menu to select the device coordinate setting, and then press "ENTER" to enter the next level. You can select "000" and other machine to start. Complete the automatic video tracking settings of all conference units; using this function, you can set the video tracking of the camera according to the address of each unit.



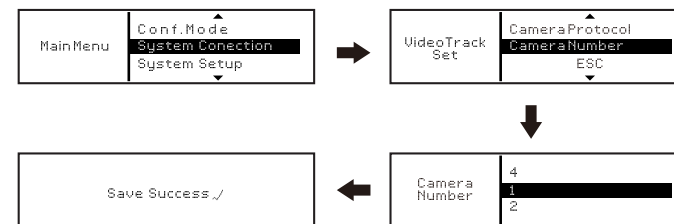
- ④ Touch the “MENU” button on the host panel to enter the video tracking setting selection menu, press “▲/▼” to scroll the menu to select the corresponding device, and then press “ENTER” to enter the next level. You can select “000” to start the machine. Manually change the tracking position of the camera. If the operator does not want the video camera to display the conference delegates who are speaking, they can use this function to select other unit addresses, change the camera’s tracking, and turn to other conference delegates.



- Touch the “MENU” button on the host panel to enter the video tracking setting selection menu, press “▲/▼” to scroll the menu to select the camera protocol, and then press “ENTER” to enter the next level. You can choose 3 different camera protocol schemes, respectively They are: Visca, Pelco-D, Pelco-P.

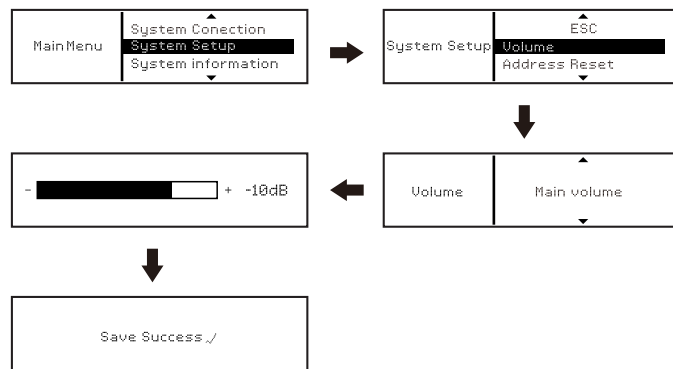


- Touch the “MENU” button on the host panel to enter the video tracking setting selection menu, press “▲/▼” to scroll through the menu to select the camera protocol, and then press “ENTER” to enter the next level to select 1-4 cameras to work.



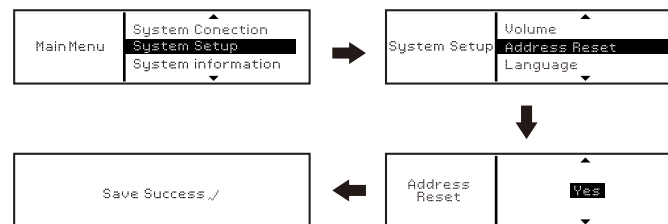
C. System Setup

- ① Touch the “MENU” button on the host panel to enter the system setting selection menu, press “▲ / ▼” to scroll through the menu to select the volume setting, and then press “ENTER” to enter the next level to select “Main volume” and “Line input volume”, “Dante input volume” one of the 3 types of volume to control the volume level.



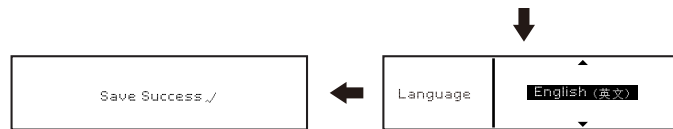
Main volume: Control the master volume output of the main controller.
 Line input volume: control the volume of line device input to the main controller.
 Dante input volume: control the volume of Dante device input to the main controller.

- Touch the “MENU” button on the host panel to enter the system setting selection menu, press “▲ / ▼” to scroll through the menu to select the address reassignment, and then press “ENTER” to enter the next level of selection. This function arranges the address of the microphone unit in the order of “001, 002, 003 ...” to help the operator more conveniently select and find the microphone unit when setting the video tracking. Choose “Yes” to do this, or “No” to do so.

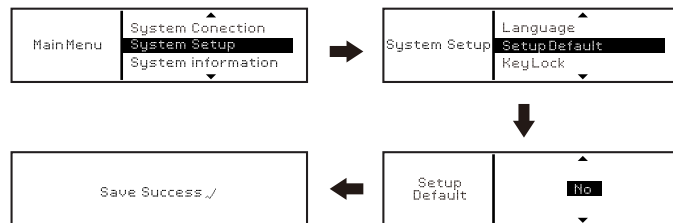


- Touch the “MENU” button on the host panel to enter the system setting selection menu, press “▲ / ▼” to scroll through the menu to select the language setting, and then press “ENTER” to enter the next level of language selection.

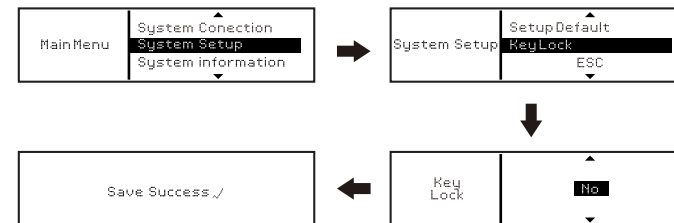




- Touch the “MENU” button on the host panel to enter the system setting selection menu, press “▲ / ▼” to scroll through the menu to select restore factory settings, then press “ENTER” to enter the next level of selection, if you select “Yes”, it will restore to the host factory default settings.



- Touch the “MENU” button on the host panel to enter the system setting selection menu, press “▲ / ▼” to scroll through the menu to select key lock, and then press “ENTER” to enter the next level of selection. If you select “Yes”, the host key is locked and cannot select the function menu, the lock icon on the main interface of the host closes the “lock icon”, select the function menu, it will prompt “key lock”.



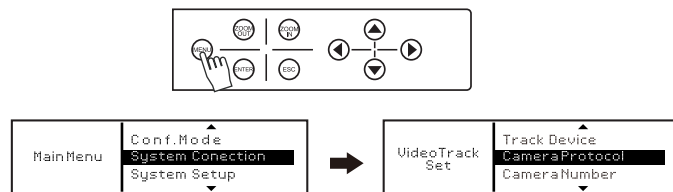
D. System information

Select Information, the system software version information is displayed.

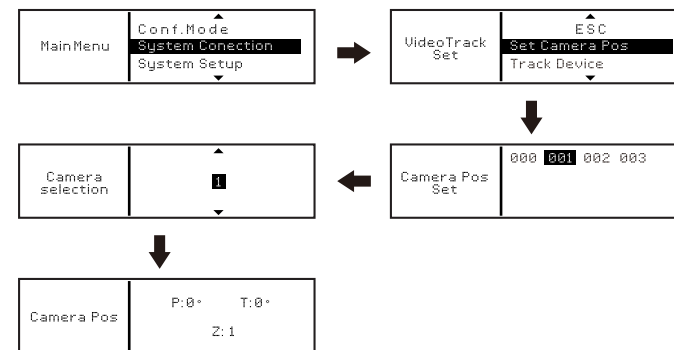


09 Camera tracking function operation

1. Connect the camera and projector equipment to the NCS-110CU system. The NCS-110CU host will enter the main menu, and select "Video Track Set" → "Set Camera Pos", "Track Device", "Camera Protocol" and "Cameras Number" Compatible camera protocols and the number of cameras used.

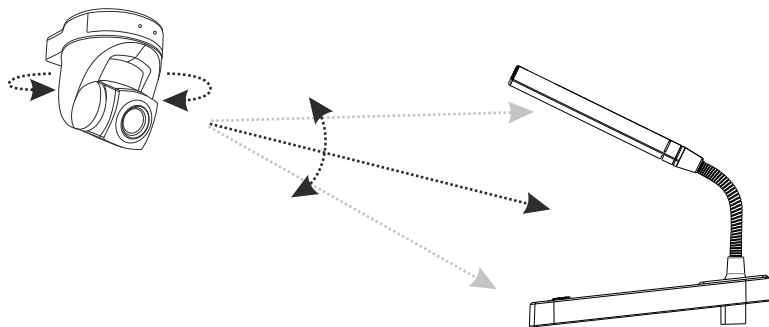


2. Press the ESC key to return to the "Video Track Set" menu selection window, and then select "Set Camera Pos", then you can get the conference unit address code, select the conference unit address code that needs to be set and press the "ENTER" key to enter the camera selection menu, Press the "▲/▼" button to select the camera to be tracked, and then press the "ENTER" button to enter the coordinates setting. At this time, the indicator light of the corresponding conference unit will flash; press the "▲/▼/◀/▶" button and "ZOOM IN" / on the panel. The "ZOOM OUT" key can control the camera to point to the desired position, and finally press the "ENTER" key to save the coordinates of the conference unit. At the same time, the host exits to the "device coordinate setting" interface, press the "▲ / ▼" button to select the next conference unit to set the camera tracking coordinates.

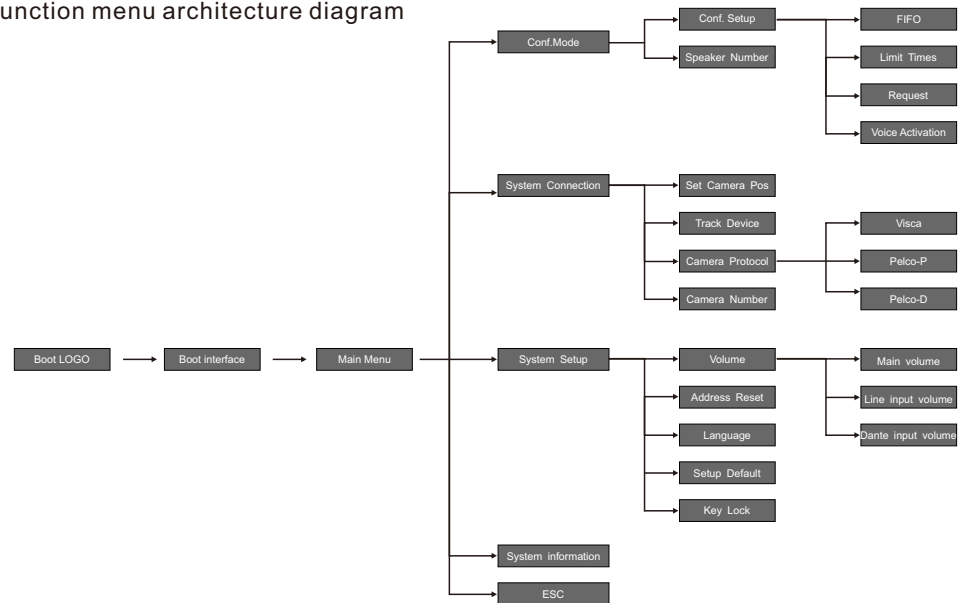


3. Address "000" is the default preset position. After confirming that each conference unit completes the video tracking setting, you can freely press the speech key of one unit to test. At this moment, the camera will automatically track the speaking unit and display on the video.

Camera Pos Set	000 001 002 003
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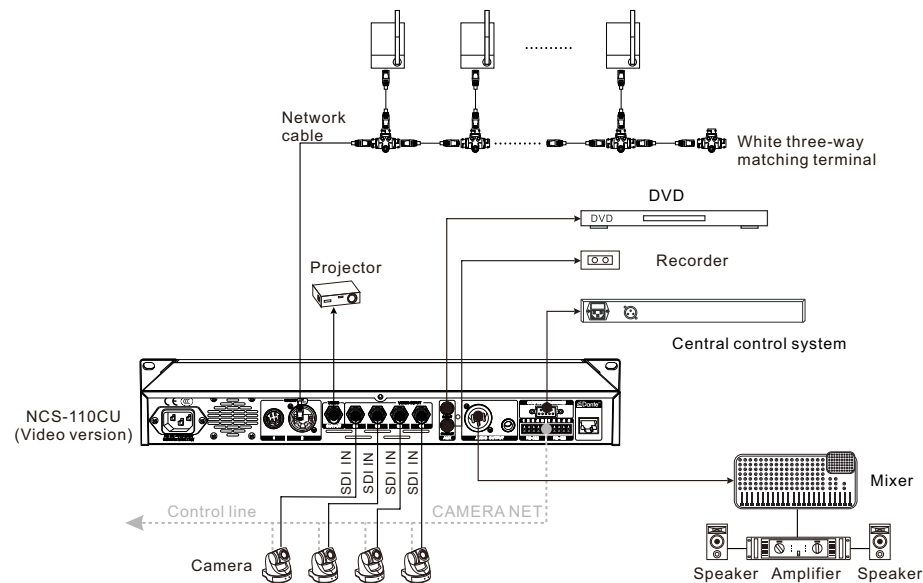


Function menu architecture diagram



10 System application connection diagram

(The picture below shows the version connection of the video conferencing system)



11 Troubleshooting & Maintenance

Erthpot Electronics Pvt Ltd periodically releases the necessary firmware upgrades for its devices. For any firmware related issue, please contact at info@erthpot.com

Problem	Solution
The processor cannot power on	Use the included power cord to connect the processor's power inlet (on the rear panel) to a power outlet. Verify that the mains power is active.
The microphone units are not showing on front display	Verify that the main network cable connecting from NCS110CU to first microphone unit is ok. If that is ok then check the Three-way Matching terminal and try to replace it with another one.
The power is on, but there is no sound from audio output	Make sure that the XLR or the Phono Jack connection at the output is correctly made. Go to Main Menu > System Setup > Volume > Main Volume and check the output level on the display.
Dante Controller App doesn't show the Controller unit	Make sure all the Dante enabled devices are connected through a DHCP router. Check the network cable connected to the DHCP router is ok.
Dante Controller App shows the Controller unit but seems inactive	Check if the Subnet configuration of your computer with the local Dante interface. For eg, the IP address of Dante interface is 169.254.2.201 but your computer's IP address is 192.168.1.10. All the connected devices in the Dante network shall have same subnet configuration i.e. 169.254.-.-

12 Technical Specifications

NCS-110CU System Technical Specifications

Number of microphones supported : 110
Maximum Power consumption : 100W/24V
XLR balances carnon maximum output level : 14.6dBu
Maximum output level of the 6.35mm balance socket : 14.6dBu
Microphone unit extension : Anti drop 9P aviation plug x I Network port (female) x I
Video input port : BNCx4
Video output port : BNC x 1
Video interface impedance: 75Ω
Dante interface : Rj45x1
Audio output : XLRM x 1, 6.35mmjackx 1, RCA Lotus x 1
Audio input : RCA Lotus x 1
pin serial port control interface : DB9 Female plug x 1
Rs-232 control protocol interface : 5P Phoenix terminal X 1
Rs-422 control protocol interface : 5P Phoenix terminal X 1
Supply voltage : 90-264V AC or 127-370V AC, 47-63Hz
Weight : about 2.3kg
Dimension (mm) : 410(W) X43 (H) x206 (D)

NCS-5C/D Technical Specifications

Polar pattern: Cardioid Condenser
Frequency response: 50Hz-20KHz
Sensitivity:-28dB +/-3dB(0dB=1V/Pa, f=1Kz)
Maximum input sound pressure level: 110dB (THD<5%,f=1Khz)
Distortion: <0.1%
Power supply: 24V DC(supplied by the receiver)
Power consumption: 0.72W
Unit interface: RJ45 network input
Weight: about 670g
Dimension (mm): 147 (L) x 15 (W) x 218 (H)
Color: metallic gray