Honeywell

X-618 Public Address System

Installation Manual

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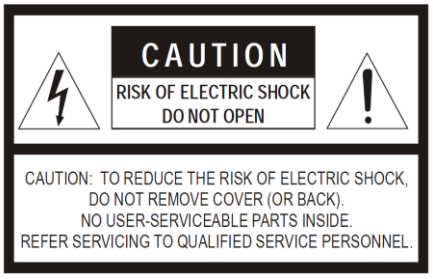
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Precautions





Danger

This sign reminds users of “dangerous voltage” on the product.



Caution

This sign reminds users of important instructions attached to the product.

Safety guideline	In order to prevent electric shock, this equipment plug shall not be used as conductor to extend power supply line.
	Do not block the equipment’s ventilation opening or put other equipment on it.
Safety guideline	Protect this equipment against rainwater or moisture so as to avoid fire or electric shock.

Unpacking

After removing the amplifier from the carton, inspect for any exterior damage to the unit. If damage is noted, notify the carrier at once so that a claim can be justified. Save all packing material. This is important when the claim is processed.

Ventilation

To offset heat generated by the unit, it is necessary to provide ample ventilation around the unit. Avoid blocking or impeding the ventilation holes on the unit. To prevent unnecessary problems, install the unit in a place free from any vibrations, direct sunlight, humidity or dust circulation.

Prevent liquids or other materials to enter cabinet

If the unit gets wet or any foreign material enters the amplifier cabinet, immediately disconnect the AC power cord and consult your dealer or qualified technician.

Important Safety Instructions

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with a dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
- Do not install on or near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide

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blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use the attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
- WARNING – To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
- The mains plug is used as disconnecting device and shall remain readily operable.
- The apparatus is unsuitable for use in air-handling spaces.
- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- Class I apparatus shall be connected to a mains socket outlet with a protective earthing connection.

Network Security

Placement

- Please put the device in a safe place, lock the cabinet and keep the keys well.
- The access control system of the central control room should be under strict management.
- Any person except authorized maintainer is forbidden to disassemble or change parts of device.
- It is forbidden to communicate X-618 system with third party system unless updating the configuration.

Password Precaution

- Please change the password during the system deployment.
- Users need to change the password regularly.
- The password with six numbers is preferred.

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Preface

Thank you for purchasing the X-618 Public Address System. Please carefully read this manual prior to system use to ensure correct use of the system.

Brief Introduction

This manual describes the appearance, installation, and wiring of the X-618 Public Address System equipment. The manual includes the following chapters:

Chapter 1: System Overview

Describes the X-618 Public Address System structure and product assembly.

Chapter 2: Preparation for Installation

Describes preparing to install the X-618 Public Address System.

Chapter 3: System Installation

Describes installing the X-618 Public Address System along with related precautions.

Chapter 4: Installation Inspection

Describes inspecting the installation of the X-618 Public Address System and system commissioning.

Intended Reader

This manual is mainly for personnel who are to install, operate, and maintain the X-618 Broadcasting System.

Relevant Documents

The following documents can be used as a reference when reading this manual:

- X-618 Public Address System Product Description
- X-618 Public Address System Configuration Manual
- X-618 Public Address System Operation Manual

Use Instructions

- All content including figures in this manual are to be used only for reference.
- The product may be subject to change without notice.
- It is recommended that all warnings and precautions in this manual are read.
- Carefully read this manual before using the product and keep it as a reference for future use.
- This manual has been reviewed and its accuracy is ensured. In case of any doubt or dispute of the product description, the final interpretation given by Life Safety A/V (Guangzhou) Co., Ltd. shall prevail.

  Life Safety A/V (Guangzhou) Co., Ltd. is not liable for any consequences caused by user mistakes when using the product or user misunderstandings of the manual content.

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1 System Overview

The X-618 Public Address System provides a complete multiple sound source public audio management solution. Centralized network management is achieved through the system software, and all system states are monitored. The X-618 Public Address System is hereby referred to as the “X-618” throughout the remainder of this manual.

The X-618 includes the following product components:

- X-DCS3000 Digital Integrated System Manager

  The X-DCS3000 Digital Integrated System Manager is hereinafter referred to as the “DCS”. When describing specific installation requirement, the X-DCS3000 is referenced.

  The DCS is X-618 control equipment, is designed for expanding the number of loudspeaker zones, and can support multiple sound source files for broadcasting. The system integrates with functions such as the sound source file the storage system, the network audio broadcasting system, the loudspeaker zone control system, and the system for monitoring and diagnosing faults.

- X-DA1500/DA2250/DA4125 High Efficiency Power Amplifier

  The X-DA1500/DA2250/DA4125 High Efficiency Power Amplifier is hereinafter referred to as the “DA” or the “X-DA1500/DA2250/DA4125”.

  In the X-618 system, the DA is used to amplify audio signal power and drive many broadcasting loudspeakers.

- X-NPMS Configurable Network Paging Console

  The X-NPMS Programmable Network Paging Console is used to page zones and control broadcasts for the X-618 on an Ethernet network.

- X-NRI Network Resource Interface

  The X-NRI Network Resource Interface is hereinafter referred to as the “NRI” or “X-NRI”.

  The X-NRI is the external interface expansion control equipment in the X-618. It has multiple audio interfaces and control ports enabling it to send audio and control signals through the Ethernet network to the X-618 system.

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The X-DCS3000 is capable of connecting to 8 main amplifier channels and 2 standby amplifier channels. See connection diagrams in Figure 1- 3 for 4 amplifier channel system.

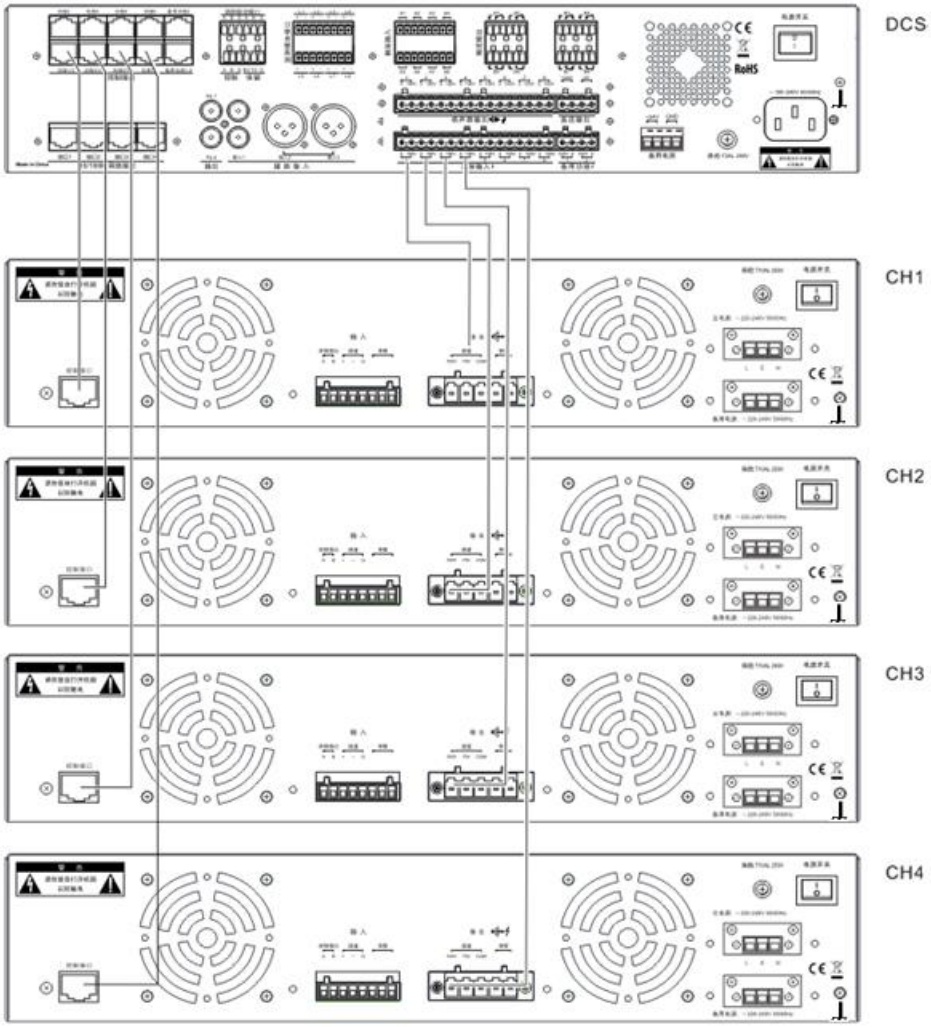


Figure 1 Connection Schematic Diagram of X-DCS3000 and X-DA1500

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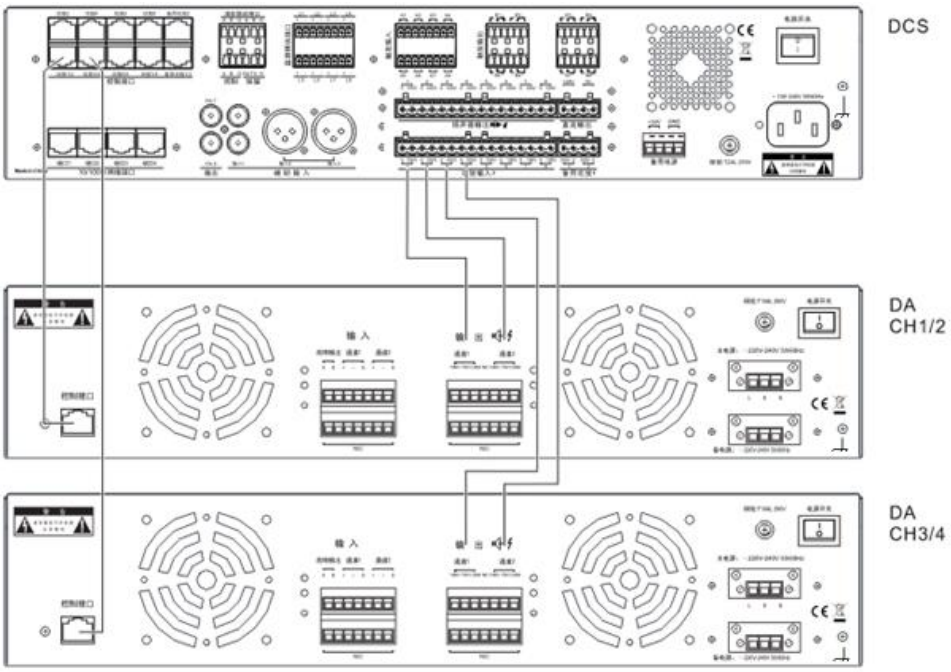


Figure 2 Connection Schematic Diagram of X-DCS3000 and X-DA2250

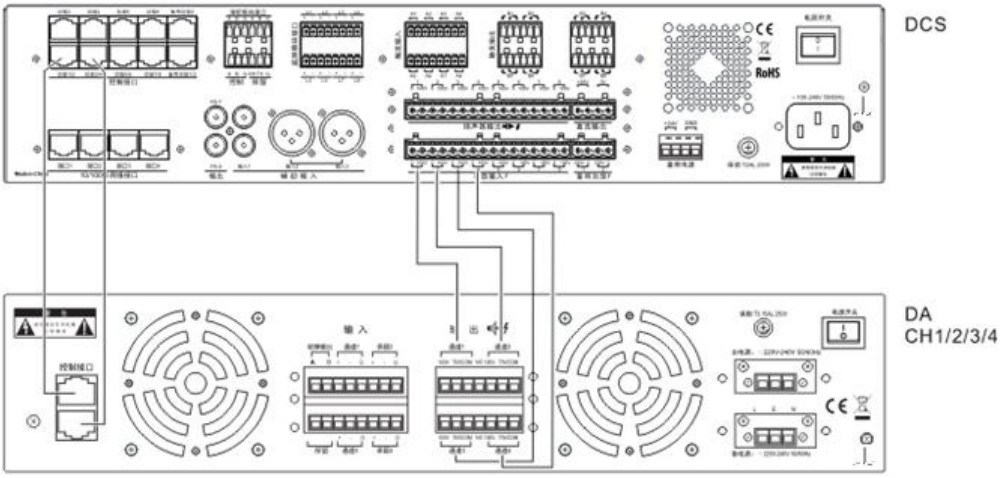


Figure 3 Connection Schematic Diagram of X-DCS3000 and X-DA4125

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2 Preparation for Installation

Before installing the system, appropriate preparation is required to ensure a smooth installation process.

- Gathering Information
- Preparing Tools
- Preparing Auxiliary Materials
- Preparing Cables and Auxiliary Equipment
- Packing List Inspection

Gathering Information

Installation personnel are required to be familiar with functional components of the X-618 product equipment. It is recommended to first read the product information found in the X-618 Public Address System Product Description manual.

Preparing Tools

Prepare the following tools before installing the system equipment:

- Electrostatic wrist band
- Electrostatic gloves
- Wire stripping pliers
- Wire cutting pliers
- RJ45 crimp tool
- Slotted screwdriver (M2)
- Phillips screwdriver (P1)

Preparing Auxiliary Materials

Prepare the following auxiliary materials before installing the system equipment:

- Insulating tape
- Wire buckles
- Cable labels
- Plastic ties

Preparing Cables and Auxiliary Equipment

Note:

It is recommended to select high quality and professional-grade transmission cables for large scale loudspeaker systems.

Before installing the equipment, prepare the following:

- CAT-5 Ethernet Cable

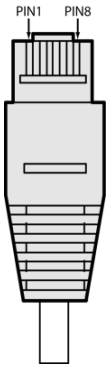
  Cable requirements should not exceed 100m with diameters of 0.51mm (wire gauge of 24AWG). Shielded twisted pair cables are recommended. If the distance between devices is

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less than 30 meters, the cable can be straight through or crossover. If the distance between devices is more than 30 meters, the cable must be a crossover.

Refer to Table 1 for the Ethernet pin types.

Table 1 RJ45 Cable Pin Definition Descriptions

PIN	Type	Legend
1	TX+	
2	TX-	
3	RX+	
4	No pin	
5	No pin	
6	RX-	
7	No pin	
8	No pin	

- 70V/100V audio connection cable

  This cable is used to connect the DCS to the DA as well as the DCS to the loudspeakers in the broadcasting zones. Shielded cables with a cross-section of 1.3mm^2 (wire gauge of 16AWG) are recommended.

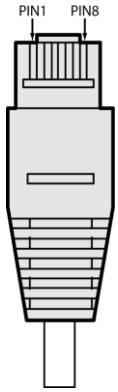
- DA backup power supply cable

  This cable is used to connect DCS, DA to DC backup power supply. The wire of 9AWG is recommended for DA, and the wire of 16AWG is recommended for DCS.

- Power amplifier audio input cable

  Audio input cables are provided in the package containing the DA, but the lengths of these cables are limited. If these cables cannot meet the requirements of the system wiring situation, users need to obtain or create appropriate cables themselves. Please prepare such audio input cables with the specifications as listed in Table 2. This cable should be a direct connection.

Table 2 Power Amplifier Input Cable Pin Definition Descriptions

PIN	Type	Legend
1	Balanced positive input of CH2	
2	Balanced negative input of CH2	
3	DA fault information output • When the DA is working properly, the output voltage is VCC(12V-24V) • When the DA faults, is protected, or undergoes self-testing, the output voltage is GND(0V)	
4	Balanced positive input of CH1	
5	Balanced negative input of CH1	
6	GND(0V)	
7	VCC (12V-24V, powered by an external device)	

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PIN	Type	Legend
8	Self-test port • When the DA output voltage is VCC (12V-24V), the DA is being self-tested. • When the DA has no input voltage, the DA is working normally.	

- Power amplifier output cables

  Unshielded cables with a cross-section of 1.3mm^2 (wire gauge of 16AWG) are recommended for the power amplifier output.

- XLR audio input cable

  Shielded pair cables with a cross-section of 0.3~0.5mm^2 are recommended for connecting external audio resource.

Table 3 X-DCS3000 XLR Input Terminal Pin Definition Descriptions

PIN	Type	Legend
1	Grounding wire(Shielded layer of cable)	
2	Hot end (Positive)	
3	Cold end (Negative)	

- Dry contact input/output cables and related external equipment (optional)

  The necessity of dry contact connections depends on the system situation. If the DCS and external equipment, such as 3-wire volume controllers and 4-wire volume controllers, must be connected through dry contacts, this equipment and the appropriate cables must be prepared beforehand.

- Noise detector (optional)

  When environmental noise is present and the volume of broadcasts need to be automatically regulated, you will need a noise detector and the appropriate cables. For connecting the X-DCS3000 with X-ND100, the maximum cable distance between the DCS and noise detector should be no longer than 1000m, and twisted pair cables with a cross-section of 1.3mm^2 (wire gauge of 16AWG) must be used.

Packing List Inspection

Please check packages carefully for any damage. Use the packing list to ensure that you have all your components. Contact your carrier/supplier if there are any issues.

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3 System Installation

This chapter describes the system equipment installation, cable connections, and relevant precautions.

- Installation Requirements of Cabinet
- Installing the Devices in the Appliance Cabinet
- Installing the NPM on a Fixed Surface (Optional)
- Connecting the X-618 System Components
- Connecting the Power Supply

Note:

- The electricity and power sources must be turned off when performing the following tasks to avoid electric shocks and damage to the equipment.
- Turn off all equipment power supply switches prior to wiring.
- Connect the wiring terminals and tighten the screws.
- The power supply cables and signal data lines must be separated, and cannot be laid in the same slot or piping.
- To avoid interference, the speaker lines and the power should be separated.
- Control signal cables must be positioned away from 70V/100V audio or power supply cables to avoid signal interference.
- Appropriate materials, such as plastic ties, must be used for all connection cables. When moving the cables, prevent the power supply cables from coming in contact with the signal data cables.
- Install appropriate electrical cable bushings at the cabinet opening before installing the cables in the appliance cabinets.
- The spaces reserved for the cables at the cabinet opening must be blocked if these spaces are not used.

Installation Requirements of Cabinet

The X-618 system needs to be installed in a standard 19” cabinet. The ground wire is required to be connected to the cabinet. There are specialized earth wires at the door and the bottom of cabinet. Please refer to following steps for installation:

The cabinet door shaft contains one yellow screw as shown in Figure 4, identified with marker ①. Figure 4, marker ②, represents another grounding terminal in the same position in the cabinet. Connect the two terminals with a wire.

Connect the grounding screw of all devices in the cabinet to the grounding terminal. For safety reasons, it is recommended to connect an external specified grounding terminal to the one on the cabinet.

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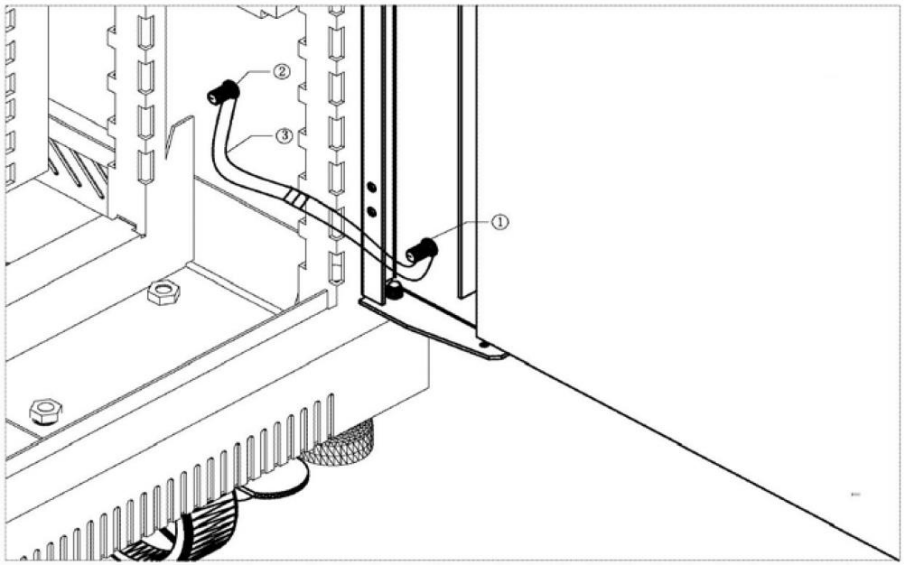


Figure 4 Schematic Diagram of Cabinet Grounding

All the devices of this system are equipped with a specialized grounding screw, marked with the icon . After installing in the cabinet, cabinet grounding and device grounding should be connected by a soft cable with a cross-section of 1.5mm$^{2.}$

Caution:

To prevent a grounding loop, be careful to not let a short circuit occur over the grounding wires.

During the installation of amplifier, to ensure a better cooling performance, 1U blind plate is recommended between the amplifier and device.

Before installation, inner space of the cabinet should be arranged based on the actual number and types of devices. The bottom plate needs to be installed, and the empty spaces can be filled with blind disk.

The X-618 spare list includes foot for the bottom of the device, which is used for desktop installation. Make sure there is no foot installed at the bottom of the device before installation.

Installing the Devices in the Appliance Cabinet

Installing the DCS, NRI and DA into the associated appliance cabinet

Installing the DCS, NRI and DA into the cabinet is done as follows:

1. Install brackets on the left and right sides of the DCS, as shown in Figure 5.

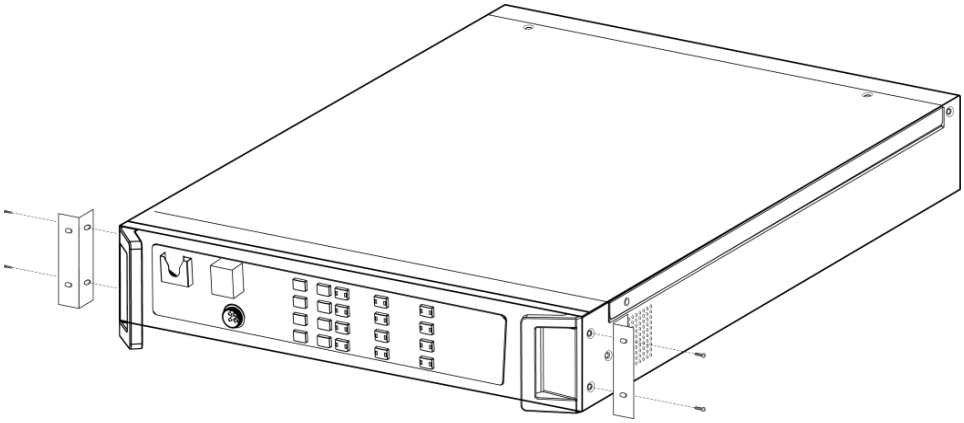


Figure 5 Schematic Diagram of the DCS Bracket Installation

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2. Put the DCS appliance into the cabinet, and tighten the screws to secure the unit, as shown in Figure 6.

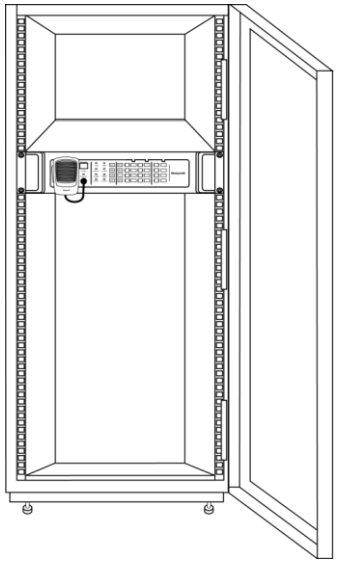


Figure 6 Schematic Diagram of Installing the DCS in the Cabinet

3. Install the brackets beside X-NRI Network Resource Interface, and install in the cabinet.
4. Install the brackets beside amplifier, and install in the cabinet.
5. After all installation, use screws to secure the device in the cabinet.

Installing the X-NPMS on a Cabinet

The X-NPMS Configurable Network Paging Console and the key module extensions X-K4 or X-K8 can be installed in the cabinet according to customer's requirements. Before installation, the X-NPMS and extension key module should be installed together first.

The installation process is as follows:

1. Use cables to connect the devices. Pay attention to the direction.
2. Put the bracket between the devices as shown in Figure 7, and fix it with standard configuration screws.

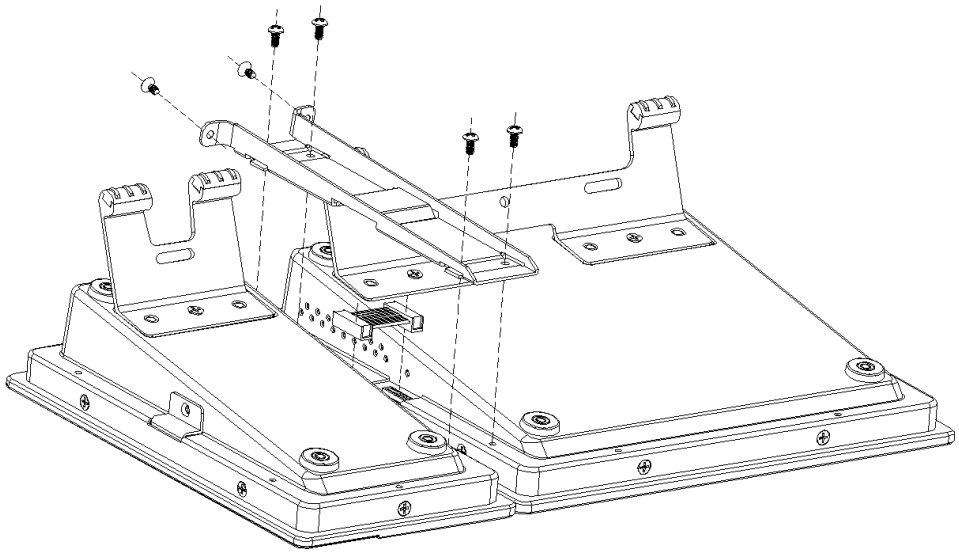


Figure 7 Installation Diagram of X-NPM and Extension Key Module

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HN-PTT (Optional) has to be selected instead of removable gooseneck microphone.

Caution:

- Space of 1U (1U=44.45mm) should be reserved for cooling.
- Blind disks are recommended to seal up the space in the front of cabinet.

Connecting the X-618 System Components

This section describes the connections between the following X-618 system components:

- Connecting the Sound Source Equipment to the DCS
- Connecting the DCS to the DA
- Connecting the Dry Contacts (Optional)
- Connecting the Noise Detector(Optional)
- Connecting the loudspeaker
- Connecting the DCS and NRI to the NPM

Connecting the Sound Source Equipment to the DCS or NRI

Connect the external sound source equipment to the DCS or NRI units.

The sound source connected to the DCS will be used for broadcasting in this devices' zones .The sound source connected to the NRI will be used for broadcasting in all the zones of the X-618 system.

Connecting the X-DCS3000 to the Sound Source Equipment

For the X-DCS3000 Digital Integrated System Manager, there are 3 local auxiliary audio input interfaces, in which interface 1 uses the RCA port, and interface 2 and 3 use the XLR port to send a balanced or non-balanced signal from the microphone and sound console. For audio input 1, use cable to connect the audio output and the X-DCS3000 to input 1. When connecting input 2 and 3 to the external audio source, pay attention to the connection of interface pin. If it is necessary to use these 2 ports introduce a non-balanced signal, short circuit the cool end with grounding wire.

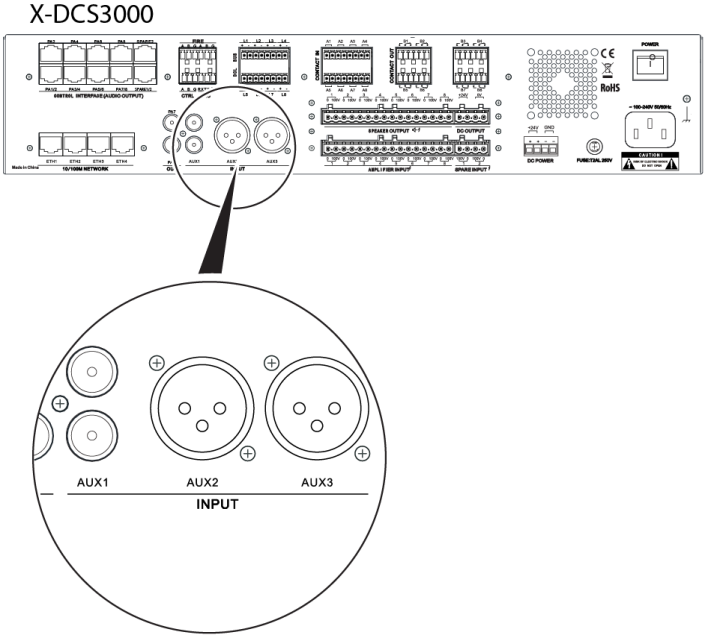


Figure 8 X Diagram of X-DCS3000 Connecting the Sound Source Equipment

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Connecting the X-NRI to the Sound Source Equipment

There are 4 auxiliary audio source input interfaces (RCA ports) and 4 balance input interfaces for the X-NRI. Auxiliary audio source input interfaces are able to connect to external audio devices directly. The operation is the same as the operation on the DCS. The polarity of signal cable, such as hot end “H”, cool end “C” and grounding end “G” should comply with the input audio device when connecting balance input interface with external audio source.

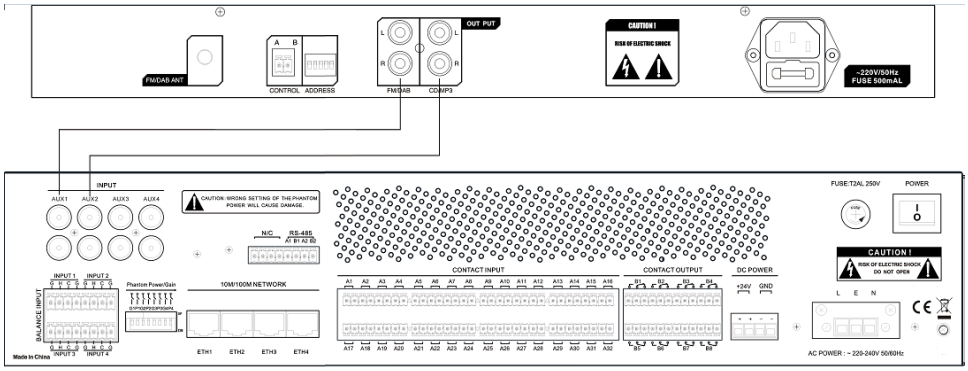


Figure 9 NRI Connecting the Sound Source Equipment

Connecting the DCS to the DA

Two signal cables need to be used when connecting DCS and amplifier. Twisted pair cables are used to connect the audio output interface of DCS and audio input interface of amplifier. 70V output interface of amplifier should connect to 70V/100V input interface of DCS.

There are 2 rows of interfaces of audio output interface (control interface) on DCS. Lower interfaces include 2 audio signals, and upper interfaces include 1 audio signal. The upper interfaces correspond to the even channel of lower interfaces. For example, if the lower channels are 1 and 2, the upper channel should be 2.

Note:

The DCS can be connected to the power amplifier in the following configurations:

- Connect the **PA1/2** and **PA2** port of the single-channel power amplifier to the DCS control port using two twisted-pair cables, as shown in Figure 1
- Connect the **PA1/2** port of the two-channel power amplifier to the DCS control port using one network cable. Refer to Figure 2.
- Connect the **PA1/2** and **PA3/4** port of the four-channel power amplifier to the DCS control port using two network cables, as shown in Figure 3.

The steps for connecting DCS to the amplifier are as below:

1. Connect the control port of the amplifier

   Connect the DA RJ45 port to the DCS control port using the audio input lines that are included in the package containing the DA, as shown in Figure 10.

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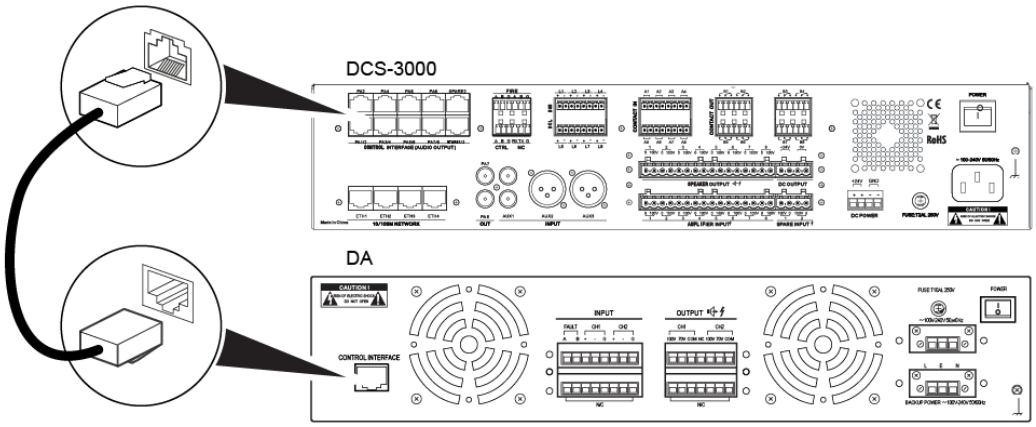


Figure 10 Connection Diagram of Amplifier and Control Port of X-DCS3000

2. Connect the DA audio output to the DCS

   a. Strip one end of the prepared audio output cable jacket by 10mm, and feed the cable through the protective cover of the power amplifier, as shown in Figure 11.

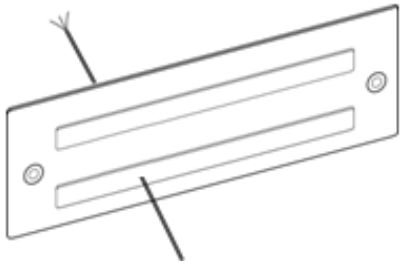


Figure 11 Schematic Diagram of a Feeding the Audio Output Cable through the Protective Terminal Cover

   b. Take the end of the cable that was fed through the protective cover of the power amplifier wiring terminal and connect the cable to the power amplifier output wiring terminal (7P green phoenix tail seating 5.08mm), and tighten the screws. Refer to Figure 12.

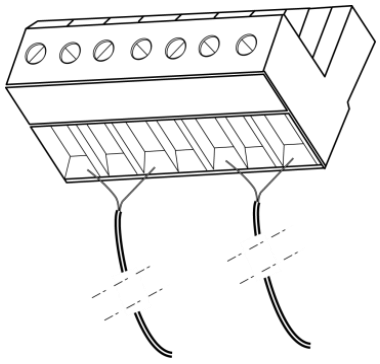


Figure 12 Connecting the Audio Output Cable to the Power Amplifier Input Wiring Terminal

   c. Feed the other end of the audio output cable through the DCS protective cover of the terminal.

   d. Connect the end of the cable that was fed through the protective cover of the DCS to the power amplifier input wiring terminal (4P green phoenix tail seating 5.08mm), and tighten the screws.

   e. Insert the power amplifier audio output wiring terminal of the installed audio output cable into the DA audio output port.

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f. Insert the power amplifier input wiring terminal of the installed audio output cable into the DCS PA audio input port, as shown in Figure 20 and Figure 14.

X-DCS3000

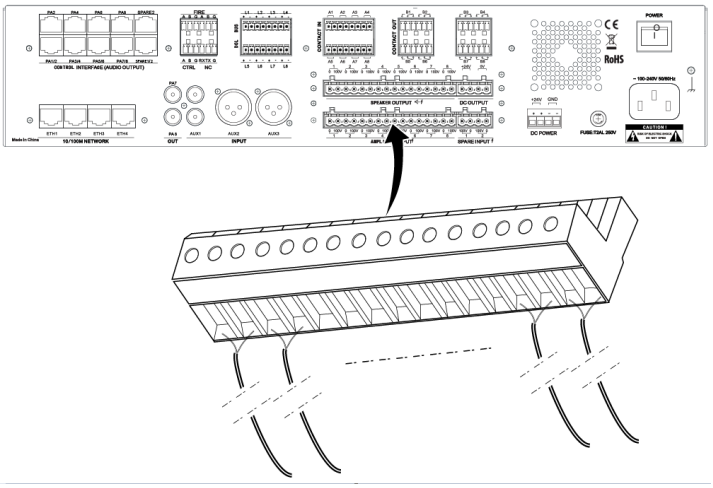


Figure 14 Schematic Diagram of the X-DCS3000 70V/100V Audio Input Wiring Terminal Installation

g. Carefully check the input and output cables of the DCS that connect to the amplifier, ensuring the channels are correct.

h. Cover the power amplifier terminal with the protective terminal cover and tighten the screws, as shown in Figure 15. This same operation applies to the DCS terminal and related protective cover.

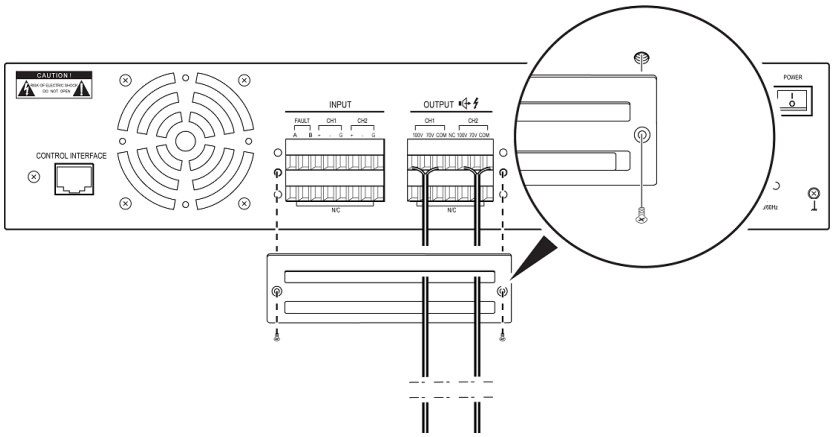


Figure 15 Schematic Diagram of the Protective Audio Input Terminal Cover

Control interfaces of standby amplifier should connect to standby ports of DCS. In the “single standby amplifier” mode, the control interface of the amplifier should connect to the standby PA1/2 port of the DCS, and 70V output interface of the standby amplifier should connect to the standby PA input 1 and 2 ports (parallel connection) of the DCS. If the double standby amplifier mode is used, the standby channels should be set to 2 or 4 channels, the control interface of the amplifier should connect to the standby PA1/2 port of DCS. When the standby channel is single channel, the control interface of 2 amplifiers should separately connect to the standby PA1/2 port and the standby PA 2 port. The output ports of the standby amplifier should connect to the standby PA input port of the DCS, and the control interface should also correspond to each other.

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Connecting the Dry Contacts (Optional)

This section describes connecting the external equipment or switch through the dry contacts.

DCS Dry Contact Input Preparation

1. Connect the dry contact cable with diameter of 0.5 to 1.5mm to the dry contact input terminal.

   Strip the wire jacket off one end of the prepared dry contact connection cable by about 10mm, insert the wires into the dry contact wiring terminal, and tighten the screws.

2. Insert the dry contact input wiring terminal of the installed input cable into the DCS dry contact port, and connect the external dry contact equipment or switch to the other end of the dry contact input cable.

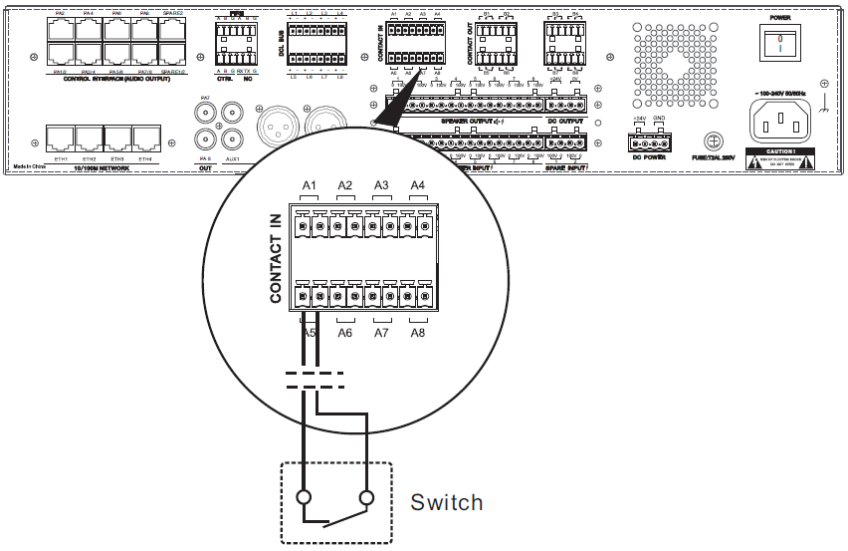


Figure 16 External Dry Contact or Switch

Dry contact input port of the X-DCS3000 has the capability of line supervision, it can connect to the fire alarm system or other third party system. The connection method remains same as above even when the function of dry contact supervision is disabled. If dry contact supervision function is enabled, the output port of the third party device should be connected to resistances, as shown in Figure 17.

NRI Dry Contact Input Preparation

The NRI dry contact inputs are used to connect the fire alarm system, to realize the public address override. The connection mode of the dry contact cable is similar to DCS, but in order to meet the dry contact cable supervision need, the dry contact cable supervision requires 20K of resistance.

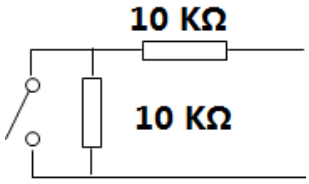


Figure 17 Schematic Diagram of Dry Contact Input Connecting to Resistance

For a detailed description of setting the NRI dry contact, please refer to the X-618 Public Address System Configuration Manual.

DCS Dry Contact Output Preparation

1. Strip off the wire jacket of one end of prepared dry contact output cable by about 10mm, insert dry contact wiring terminal (8P green phoenix tail seating 3.81mm), and tighten the screws.

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2. Insert the dry contact output wiring terminal of the installed output cable into the DCS dry contact port.
3. Connect the external equipment or switch to the other end of the dry contact output cable. Figure 18 is schematic diagram of the DCS and three-line volume controller connection. Figure 19 is schematic diagram of the DCS and four-line volume controller connection.

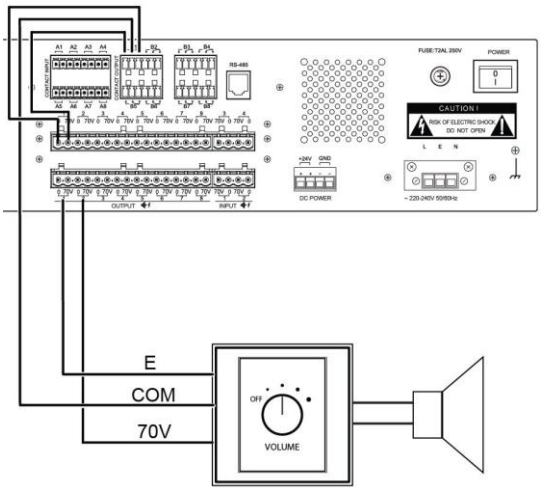


Figure 18 Schematic Diagram of the DCS and Three-Line Volume Controller Connection

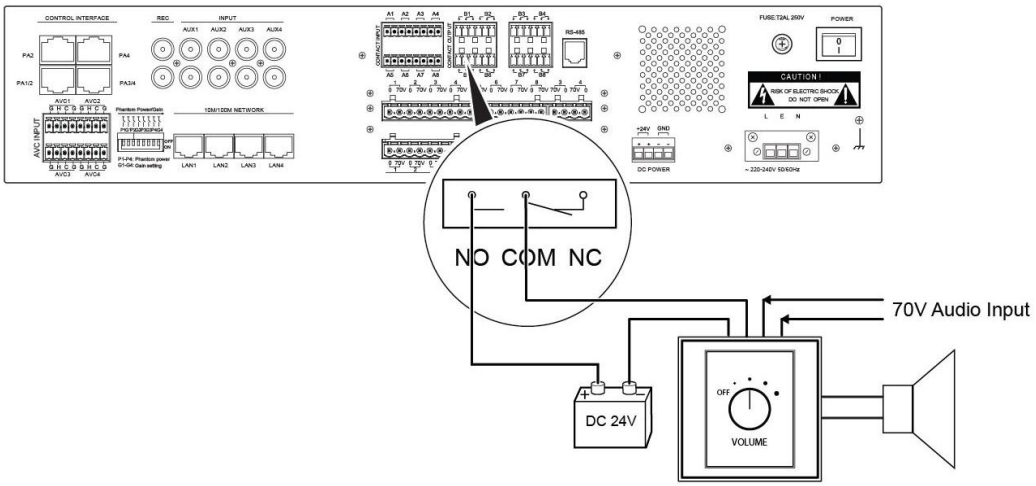


Figure 19 Schematic Diagram of the DCS and Four-Line Volume Controller Connection

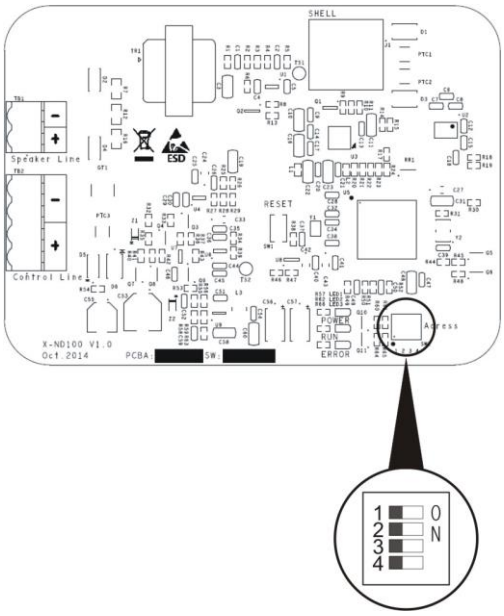
Connecting the Noise Detector (Optional)

If environmental noise detection is required, the AVC port should be used to connect the noise detector to the system.

Only the X-ND100 is compatible with the X-DCS3000. Shielded twisted pair cables are used to supply power as well as transfer the noise data signal. The steps are as follows:

1. Open the rear cover of noise detector, and set the module address 1~5 per binary system. Switch to ON position as shown below:

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2. Insert the prepared noise detector connection cable into the corresponding input wiring terminal (8P) and tighten the screws.
3. Insert the wiring terminal of the installed cable into the DCS supervision port.
4. Connect the Speaker Line of noise detector to the area.
5. Fix the noise detector and if there are many detectors in a same line, please follow the connection method shown in Figure 21.
6. Choose a fix method based on the surrounding situation. It can be embedded in ceiling or install it though hanging.
7. If the appearance of noise detector is similar to the end-of-line supervision module, installation can be conducted according to corresponding method.

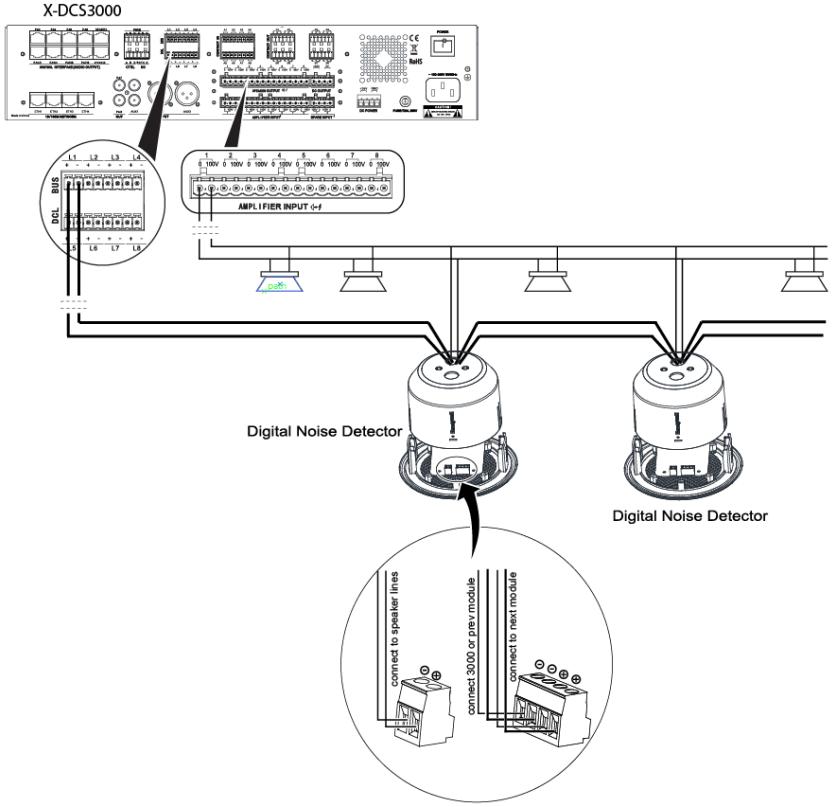


Figure 21 Schematic Diagram of the X-DCS3000 Connection to the Noise Detector

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Connecting the Loudspeakers

The DCS can be directly connected to loudspeakers. The following steps describe this process:

1. Strip off the wire jacket of one end of the prepared audio cable by about 10mm, insert into the loudspeaker wiring terminal, and tighten the screws.
2. Insert the loudspeaker wiring terminal of the installed audio cable into the DCS loudspeaker port.
3. Connect the loudspeaker to the other end of the audio cable, and if there are many speakers in the same line, please follow the connection method shown in Figure 22.

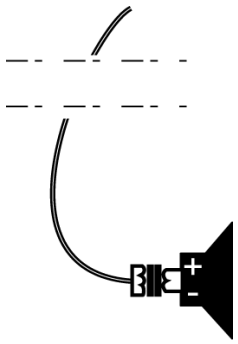


Figure 22 Schematic Diagram of the Loudspeaker and the Audio Cable Connection

Connecting the DCS and NRI to the NPM

In the X-618 system, the DCS, the NRI and the NPM form a complete system through the Ethernet.

The DCS and NRI can be connected to the NPM in the following two ways:

- Directly connecting the DCS and NRI to the NPM
- Connecting the DCS and NRI to the NPM through a network switch

Directly Connecting the DCS and NRI to the NPM

Use twisted pair cables to connect the network ports of the DCS, the NRI and the NPM.

Insert one end of the prepared twisted-pair cable into the network port located on the rear panel of the DCS, and the other end of the cable into the RJ45 port located on the rear panel of the NPM, and connect the network port of DCS to the NRI's network port using another twisted-pair cable.

Connecting the DCS and the NRI to the NPM through a Network Switch

Connect the DCS and the NRI to the NPM through a network switch. The DCS and network switch must be on the same network. Refer to Figure 23.

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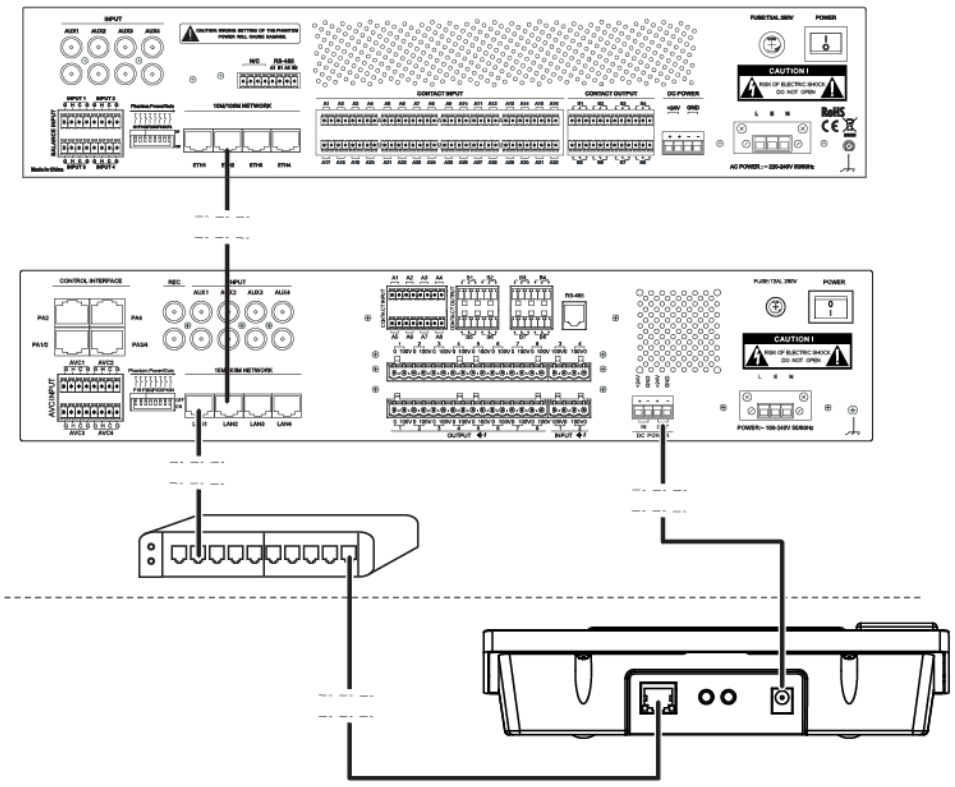


Figure 23 Schematic Diagram of Connecting the DCS and the NRI to the NPM through a Network Switch

Connecting the Power Supply Cables

The power supply cables for the main X-618 system components include the following items:

- DCS or NRI Main and Standby Power Supply Cables
- DA Main and Standby Power Supply Cables
- NPM Power Supply Cable

Connecting the DCS and the NRI Main and Standby Power Supply Cables

Connecting AC Power Supply Cables

The AC power interfaces of the X-NRI use phoenix sockets. The main power supply cables are equipped when leaving the factory, but manually connecting AC power to the device is also needed under some circumstances. Here are the steps:

1. Strip off the wire jacket of one end of the AC power supply cable by 20mm and connect the cable to the main power supply wiring terminal, as shown in Figure 24.

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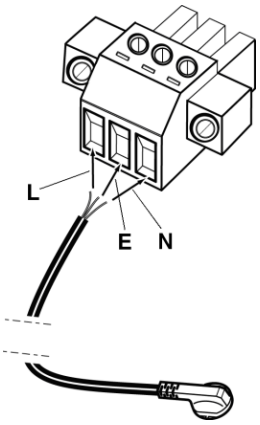


Figure 24 Schematic Diagram of Connection of the AC Power Supply Cables

Caution!

When wiring the power cables to the socket, please pay special attention to the polarity of the cables, they should comply with the polarity of the device. The wires are identified as L (Live wire), N (Neutral wire), and E (Earth wire).

2. Tighten the screws to prevent the power supply cable from coming loose, and cover the power supply interface set.
3. Insert the wiring terminal of the installed power supply cable into the AC power supply input port of the X-NRI or amplifier, and tighten the screws at both ends.
4. Insert the other end of the power supply cable into the main power supply equipment.

A standard socket is used in the X-DCS3000 AC power supply, and you can insert the power cables into the device and power ports directly.

Connecting the DC Power Supply Cables

A 24V power supply is used as the standby power for the DCS and the NRI. Connect one end of prepared standby power cable to the standby power input ports of the DCS or the NRI, and the other end to the standby power supply. DC 24V of voltage is required, and pay attention to connecting the right polarity.

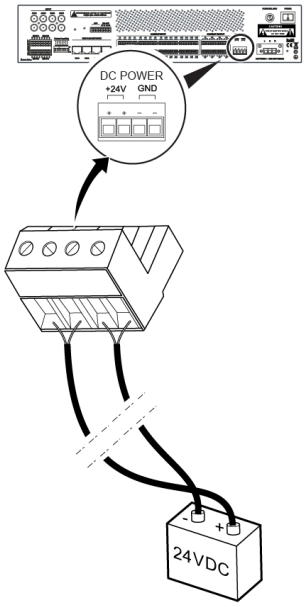


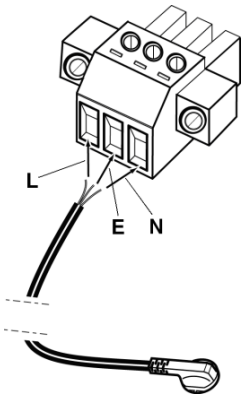
Figure 25 Schematic Diagram of the NRI Standby Power Supply Cable Connection

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Connecting the DA Main and Standby Power Supply Cables

Connecting the Main Power Supply Cable

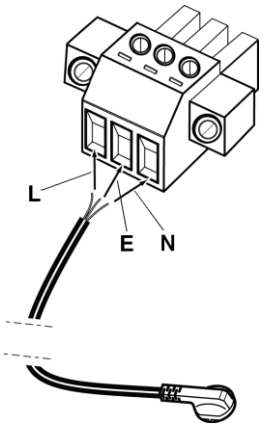
1. Strip off the wire jacket of one end of the prepared standby power supply cable by 20mm and connect the cable to the main power supply wiring terminal, as shown below.



2. Tighten the screws, and cover the power supply interface set.
3. Insert the wiring terminal of the installed power supply cable into the main power supply input port of the DA, and tighten the screws at both ends.
4. Insert the other end of the main power supply cable into the main power supply equipment.

Connecting the Standby Power Supply Cable

1. Strip off the wire jacket of one end of the prepared standby power supply cable by 20mm and connect the cable to the standby power supply wiring terminal, as shown below.



2. Tighten the screws to prevent the power supply cable from coming loose, and cover the power supply interface set.
3. Insert the wiring terminal of the installed power supply cable into the standby power supply input port of the DA, and tighten the screws at both ends.
4. Insert the other end of the standby power supply cable into the standby power supply equipment, such as the Uninterrupted Power Supply (UPS).
5. When there is no standby power supply, the main and standby power supply can be connected to each other.

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Connecting the NPM Power Supply Cable

Connecting the Power Adapter

The X-NPMS can be powered by a power adapter. Insert one end of the power supply adapter into the NPM power supply input port, and connect the other end of the power supply adapter cable to the power supply equipment.

Connecting the External Power Supply

The X-NPMS can be powered by external equipment, such as the X-DCS3000. Insert one end of the power supply adapter into the NPM power supply input port, and connect the other end of the power supply adapter cable to the power supply equipment. Pay attention to the different DC input interface places. The output current is 1A.

Connecting the Power over Ethernet

The X-NPMS can be powered by the power over Ethernet. Use a twisted pair cable to connect the X-NPMS with POE switch. There is no need to connect to power supply cables or power adapter.

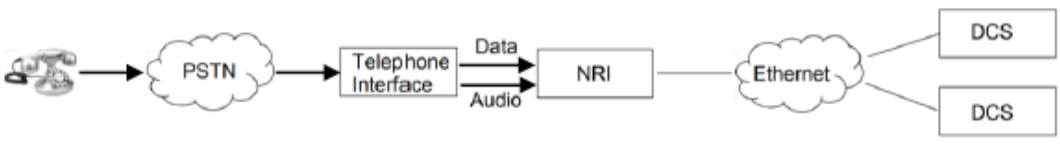
Caution!

When X-NPMS is connected to many key extension modules and powered by POE, we recommend to use POE switcher, which support IEEE802.3 to satisfy the power supply needs.

Connecting the NRI with the Telephone Interface

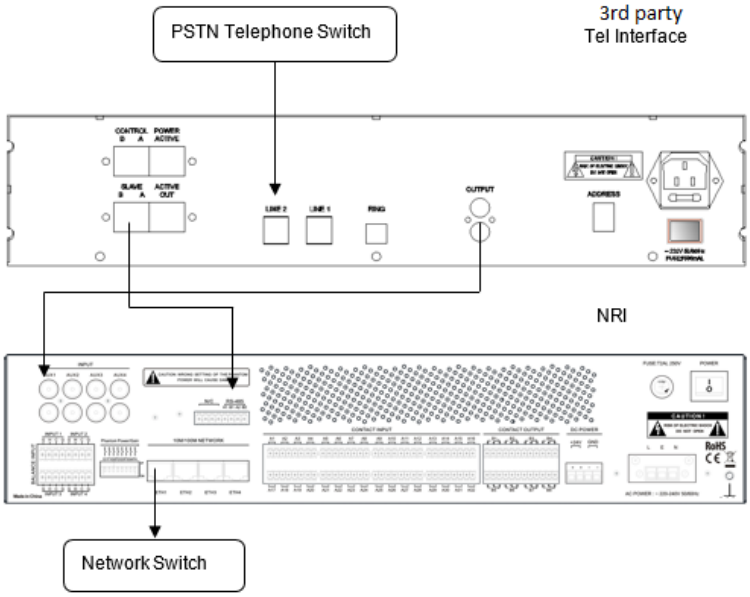
If users want to enable the telephone interface function, the telephone interface device has to connect to audio input interface (auxiliary input) and communication control port of NRI. The steps are as described below:

- Connect the audio output of the 3rd party telephone interface to one external audio input of the NRI, make sure that auxiliary input has been configured as a telephone task in the Config software.
- Connect the RS-485 (A2/B2 port) of the NRI to the SLAVE port (A/B port) of the 3rd party telephone interface, port A2 connects with port A; port B2 connect with port B.
- Connect the telephone interface device RJ-11 port to the PSTN switch or VoIP gateway, to enable the connection between X-618 system and telephone network interface.



The schematic diagram of connection between the devices is shown below:

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4 Installation Inspection

This section describes conducting a series of inspections after completing the system installation procedure so as to ensure that the installation was done correctly.

Inspection

Inspect the following items after installing the X-618 system and before turning the system on:

- Check if sufficient heat ventilation space is left above the DA appliance.
- Check the protective grounding cables to make sure they were correctly connected.
- Check the connections of the power supply to which the power supply cables are connected.
- Check the connection between system components

After inspection, set the functions according to customers' requirements.

Manual Setting

Inquiring the device IP

Through DCS operation, device can announce the IP address in the monitoring speakers to confirm the IP address of DCS.

- Press the buttons in order (not release): "Fn" and "CLOSE" one by one, then follow the reverse order to release button. Please release "CLOSE" button first, then release "Fn".
- The device will indicate successful programming with a beep.
- The speaker inside the DCS will play the ID voice and announce the IP address.
- You cannot perform an inquiry during a broadcast.

Impedance Calibration

If the system needs to supervise the speaker circuits, after installation, please calibrate the speaker circuit impedance.

- Press the buttons in order: "Fn", "MONITOR", and "FAULT" one by one, then release "FAULT" first, and then release others.
- Press the buttons in order (not release): "Fn", "MONITOR", and "FAULT" one by one, then follow the reverse order to release button. Please release "FAULT" first, then release "MONITOR", finally release "Fn".
- The device will indicate successful programing with a beep.

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