Q-NEX Networked Media Processor

NMP211-G-L2U

—— User Manual ——

Returnstar Interactive Technology Group Co., Ltd.

Content

1. Product Introduction

The Q-NEX Networked Media Processor integrates Ethernet connectivity into the device control system, enabling users to remotely control the device. It is primarily designed to assist school IT administrators in effectively managing various electronic facilities within a school, thereby freeing teachers from the complexities of operating a multimedia classroom.
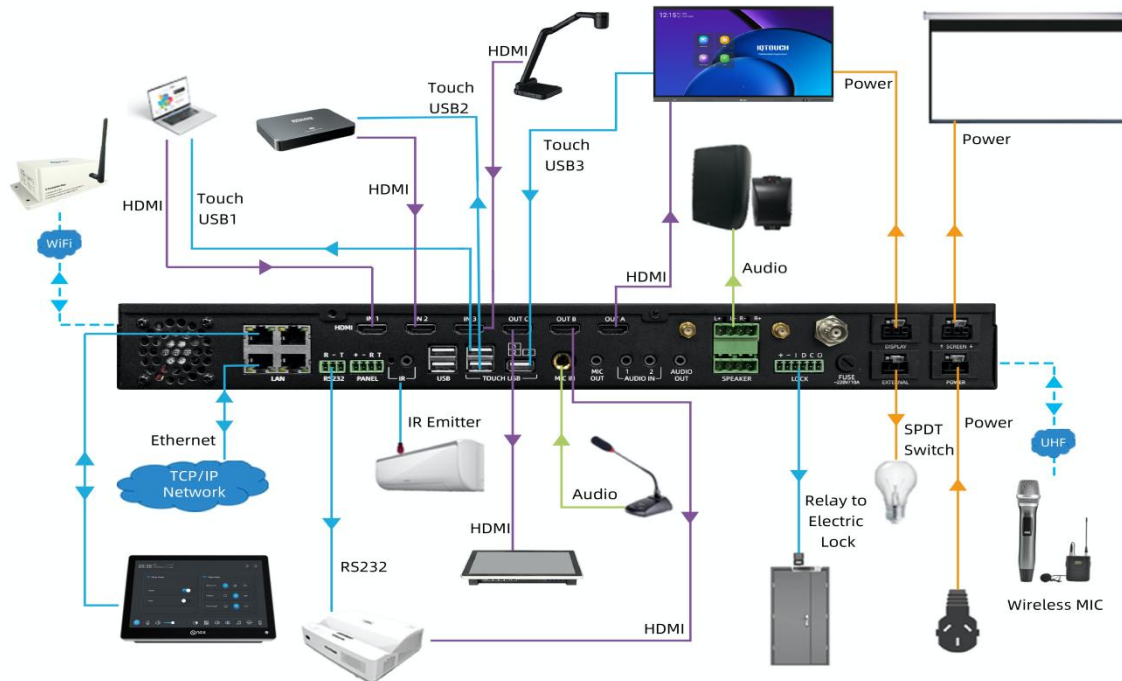
1.1 Network Environment Requirement

To ensure optimal integration, school network needs to meet specific requirements tailored for the NMP.

1. The school should allow NMP to access the Internet.

2. Whitelist Network Control Requirements:

    If the school employs whitelist network control, the following domains should be added to the whitelist:

    –   "https://qnextech.com/" (Primary Domain)

    –   "https://mg.qnextech.com/" (Secondary Domain).

3. IP Address and Port Requirements:

    The school network should allow access to the following addresses:

- 110.90.11.185:80 (HTTP)

- 110.90.11.185:443 (HTTPS)

- 110.90.11.185:12573 (NMP Communication Service)

- 27.151.13.85:12583 (NMP Upgrade Service).

4. MAC Address Control Requirements:

If the school implements MAC address control, the MAC addresses of the following devices should be added to the allowed access list:

- NMP

- Touch Panel

5. NMP Network Configuration:

- NMP must be connected to the **router** via a **wired connection**; NMP does not support wireless network connection.

- NMP and Touch Panel should be on the same LAN.

- If there is a Media Server (broadcast and live streaming), ensure that the Media Server, NMP, and Touch Panel are on the same LAN.

- The firewall should open the following ports for the Media Server:

  • 12570 (Broadcast Port)

  • 1935 (Streaming Port)

  • 80

  • 443

6. NMP IP Address Setting:

- To prevent issues caused by NMP IP changes, it is recommended to set the NMP IP address as static.

- Ensure that before the initial use of NMP, the Touch Panel successfully connects to NMP using this IP.

7. VLAN:

NMP does not support VLAN. NMP, Touch Panel, and Media Server should be connected to the campus network as described above but should not be on VLAN.

2. Components of NMP

Networked Media Processor * 1


Touch Panel (10-inch) * 1

Dual Microphone Set * 1

2.1 NMP Front View

No.	Interface	Description
1	MIC 1 Indicator	The status of the handheld microphone for the NMP's one-to-two wireless microphone setup can be indicated through three states: 1. **Off**: Indicates that the handheld microphone is not paired with the NMP, or pairing is unsuccessful. 2. **On (Green)**: Indicates successful pairing between the handheld microphone and the NMP. 3. **Blinking (Green)**: Indicates that the handheld microphone is currently pairing with the NMP.
2	MIC 2	Indicates the status of the lavalier microphone for the NMP's one-to-two wireless

	Indicator	microphone setup (handheld microphone + lavalier microphone). It has three states:
		1. **Off**: Indicates that the lavalier microphone is not paired with the NMP, or pairing is unsuccessful.
		2. **On (Green)**: Indicates successful pairing between the lavalier microphone and the NMP.
		3. **Blinking (Green)**: Indicates that the lavalier microphone is currently pairing with the NMP.

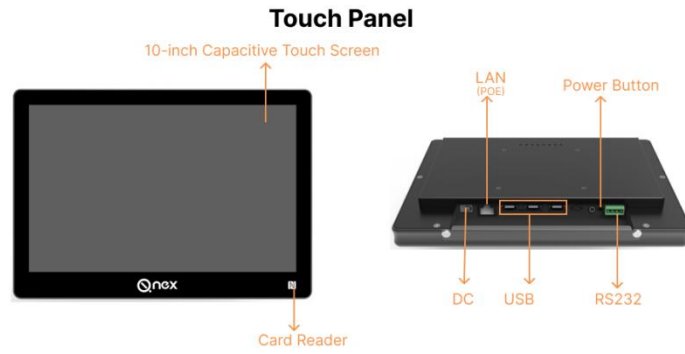## 2.2 NMP Rear View
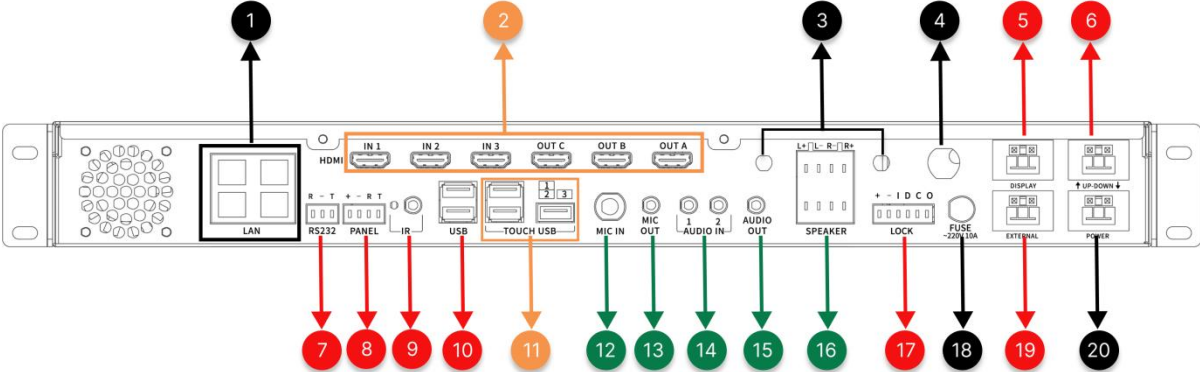
No.	Interface	Description
1	RJ45 * 4	Ethernet ports (100Mbps，Non-PoE) for NMP network connectivity; also enables NMP to function as a switch.
2	HDMI Matrix 3 * 3	Consists of 3 HDMI inputs and 3 HDMI outputs, forming the video matrix for NMP.
3	2.4G Wi-Fi Antenna Interface * 2	Built-in 2.4G Wi-Fi RP Transceiver within NMP, allowing wireless device integration and control expansion with Q-NEX's CBX component.
4	UHF Wireless Microphone Antenna Interface * 1	Built-in receiver for UHF wireless microphones, supporting one-to-two wireless microphone setups for teaching/meeting scenarios.
5	Display (WAGO) * 1	Provides power output for connected devices, such as projectors, TVs, Interactive Flat Panels (IFP), and smart podiums.
6	UP-DOWN (WAGO) * 1	Offering up, pause, and down functions for connected devices like projector screens and motorized curtains.
7	RS232 * 1	Allows connection to devices equipped with standard RS232 ports, such as Pan-Tilt-Zoom (PTZ) cameras and Interactive Flat Panels(IFP), etc.
8	Panel * 1	Interface for connection to mechanical control panels, allowing direct control of basic devices and AV matrix switching without the need for network connectivity.
9	IR * 2	IR learner port * 1: Used for learning IR remote control codes. IR emitter port * 1: For infrared remote control functionality.

10	USB * 2	Reserved for card reader
11	Touch USB * 3	USB-Device out * 1, USB-HOST in * 2 for NMP's touch-following feature. For details, refer to section 3.2.1.1 Touch-following.
12	6.35mm Wired Microphone In * 1	Interface for connecting a 6.35mm wired microphone. Use a wired microphone for clear reinforcement during instruction or conferences.
13	3.5mm MIC Mixed Out * 1	Mixes audio from both the microphone input and the wireless microphones (one-to-two) for combined output.
14	Audio-IN * 2	Two 3.5mm line-in interfaces for connecting external audio devices such as laptops, smartphones etc.
15	Audio Out	Audio output interface for connecting to speakers or amplifiers.
16	External Speaker Output	The NMP includes an integrated power amplifier, capable of delivering 2*(40w+40w) output, designed to connect with passive speakers. (Fixed impedance speakers only).
17	Lock * 1	Allows integration with door lock control systems, enabling scenarios such as automatic door lock closure after a specified period post door opening.
18	Power Fuse * 1	Power fuse for protection against electrical faults.
19	External Port (WAGO) * 1	External port interface for lighting control and other devices. there are two methods to control lighting and other devices: 1. **Direct Connection to NMP-External**: With this mode, users can directly manage lighting control using NMP. 2. **Integration with SPDT Switch**: By replacing the existing switch panel with a Single Pole Double Throw (SPDT) switch and connecting it to NMP, both NMP and the switch panel can control the lighting.
20	NMP Power Supply (WAGO) * 1	Power supply for NMP, supporting wide voltage range (110-240 V AC).

2.3 Touch Panel

Touch Panel

10-inch Capacitive Touch Screen

LAN (POE)

Power Button

DC   USB   RS232

Card Reader

Touch Panel with Base

Power Button

2.4 Handheld Microphone

Communication channel

Frequency

①
②

Battery status

Power button

No.	Description
1	LCD Screen
2	Power Button

Handheld Microphone Usage:

• Press power button to turn on the microphone; long press to turn off.

• Press **once** to switch channels; press **three** times quickly to enter pairing mode, , and press **once more** to exit pairing mode.

Paring Instructions:

Please note that the microphones are pre-configured before shipping. Unless necessary, there is no need to re-pair them.

1. Ensure NMP main power is off before paring.

   You may use the Touch Panel to power off the NMP's main power

2. Press power button **three** times quickly to enter pairing mode.

3. Immediately power on NMP using Touch Panel, then the microphone will automatically pair with NMP((the NMP has a built-in receiver).

4. Successful pairing indicated by solid green MIC 1 light on MMP.

Note :

• Ensure NMP main power is off before starting pairing.

• To ensure successful pairing, bring the microphone close to the NMP's antenna during the pairing process.

2.5 Lapel Microphone

Current
frequency

Battery status

No.	Description
1	Lapel Mic Port
2	Power Switch (Slider)
3	Antenna
4	LCD screen
5	Volume Adjust
6	Channel Button

Usage Instructions:

• Slide the power button to the left to turn on the power, and slide it to the right to turn off the power.

• Channel Button: Press **once** to switch channels; press **three** times quickly to enter the pairing mode, and press **once more** to exit pairing mode.

Pairing Instructions:

Please note that the microphones are pre-configured before shipping. Unless necessary, there is no need to re-pair them.

1. Before initiating pairing, ensure the main power of the NMP is turned off

   You may power off the NMP main power via the Touch Panel.

2. With the lavalier microphone powered on, quickly press the paring button **three** times to enter pairing mode.

3. Immediately proceed to power on the NMP main power via the Touch Panel, then the lavalier microphone will automatically pair with the NMP (the NMP has a built-in receiver)

4. Upon successful paring, the MIC 2 indicator light on the front of the NMP will remain solid (green).

▤ **Note :**

• Ensure NMP main power is off before starting pairing.

• To ensure successful pairing, bring the microphone close to the NMP's antenna during the pairing process.

3. Wiring and Setup

3.1 Get ready for NMP

3.1.1 WAGO Connector Installation Guide

| Step	Screenshot	Instructions
S1		Wire Preparation 1. Strip the insulation off the ends of the wires. ▤ Refer to the image for specific length requirements 2. If the wires are stranded, twist them together to form a single strand.
S2		Wire Connection to WAGO Connector 1. Align the wires according to their respective terminals on the WAGO connector. ⚠ Ensure strict adherence to the correct sequence for live and neutral wires. 2. Firmly insert a flathead screwdriver into the small hole above the wire (to open the clamping mechanism below). 3. Apply slight pressure to push the wire into the terminal hole. 4. Remove the screwdriver, allowing the clamping mechanism to secure the wire firmly in place. 5. Gently tug on the wire to ensure it is securely fastened.

S3	Step 1: Step 2: 	Cover Installation for WAGO Connector 1. Align the cover with the WAGO connector 2. Press down firmly on the cover until it snaps securely into place.

⚠ **Warning:**

During installation, be cautious not to connect the neutral and live wires of the AC power supply (positive and negative poles of the DC power supply) to the Wago port simultaneously, as it may cause a short circuit.

3.1.2 Power Supply Connection

After wiring the Wago connector, connect it to the NMP's Power In interface and plug the other end into the power source to supply power:
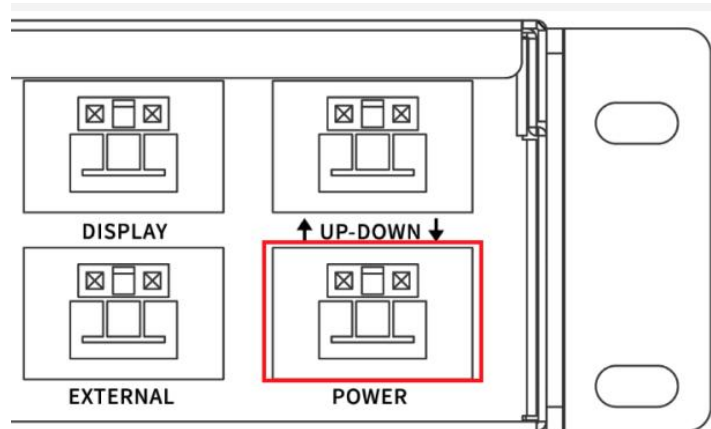
3.1.3 Connect Touch Panel to NMP

1.   Power the Touch Panel:

 The Touch Panel supports two power supply methods:

   –   Use a power adapter.

   –   Use PoE (Power over Ethernet). The Touch Panel supports PoE.

⚠ Warning:

Do not power the Touch Panel using both the adapter and POE simultaneously, as it may cause a short circuit and void the warranty.

2. Connect to the Network:

   – Connect the Touch Panel to the NMP LAN port
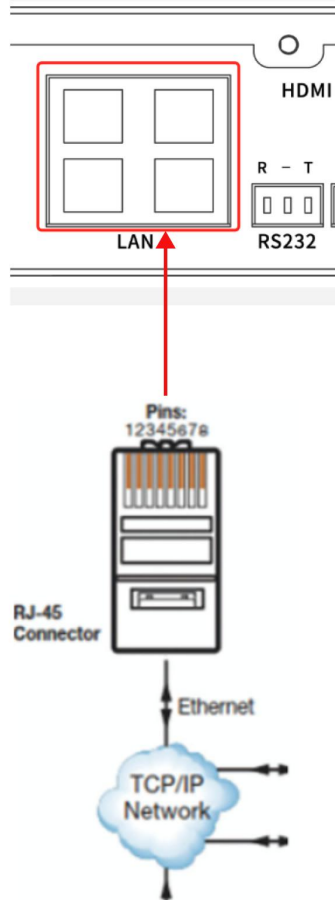
   – Or connect the Touch Panel to the router/switch, ensuring the Touch Panel and NMP are on the same LAN.

3. Enter IP Address: After connecting to the network, input the NMP IP address on the Touch Panel.
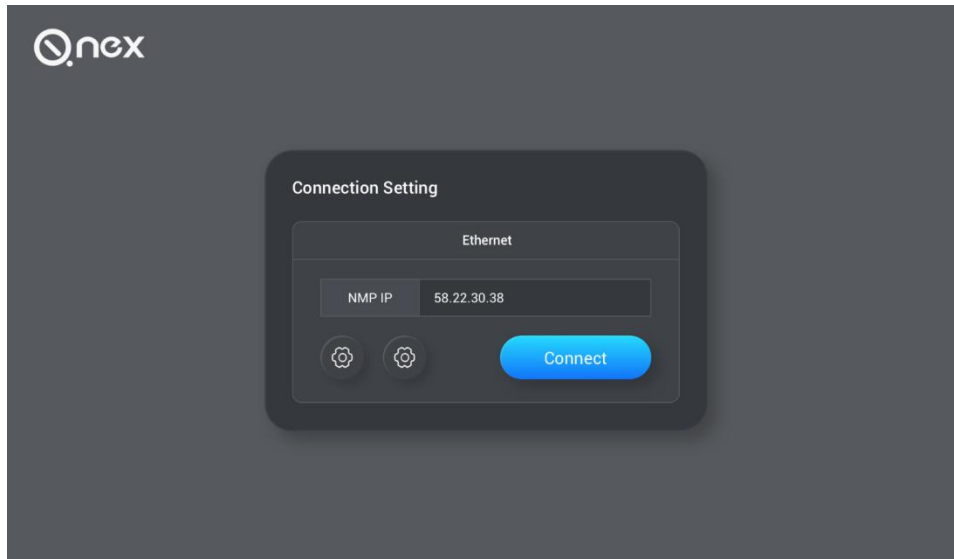
📄 Processor Manage' page. Input this address on the Touch Panel and click 'Connect.'"

📄 ：If connection issues arise, use the router device or NMP config Tool.exe to identify the correct IP address, particularly in situations where DHCP changes may not be immediately reflected in the web-based backend.

3.2 AV Control

The AV Control section of the NMP encompasses various features aimed at managing audiovisual signals through NMP.

3.2.1 Video Matrix Switch
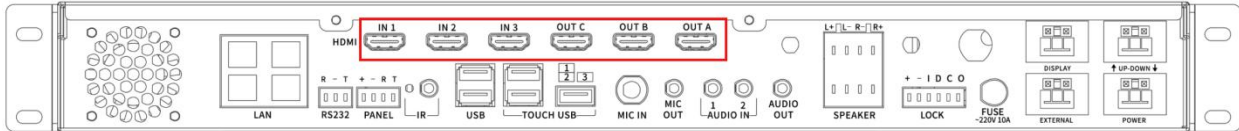
The NMP's Video Matrix Switch routes video signals from multiple input sources to different output displays.

- Connect display devices, such as laptop, document camera, IQShare (WP40) etc., to HDMI In.

- Connect display devices, like IFP,TV, projector etc., to HDMI Out.

- Operate matrix switching via the Touch Panel, Web-console, or Q-NEX App.

3.2.1.1 Touch-following
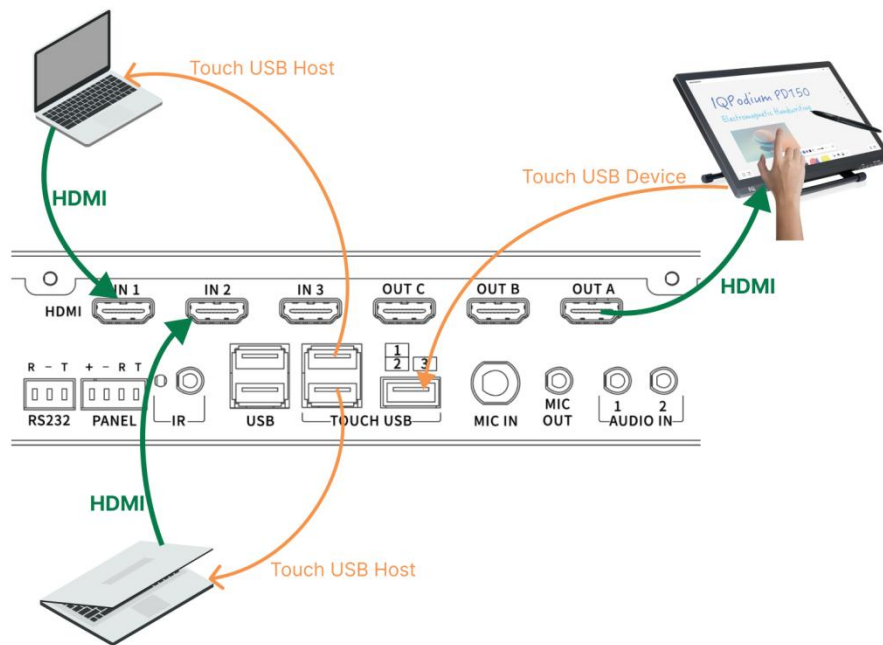
"Touch-following" is a feature that enables continuous touch operation across multiple input sources.It allows users to switch between devices without interrupting touch functionality, ensuring a smooth and uninterrupted user experience.

Ensure correct matching of HDMI and Touch USB connections to avoid confusion.

3.2.2 Audio Control

3.2.2.1 Passive Speaker
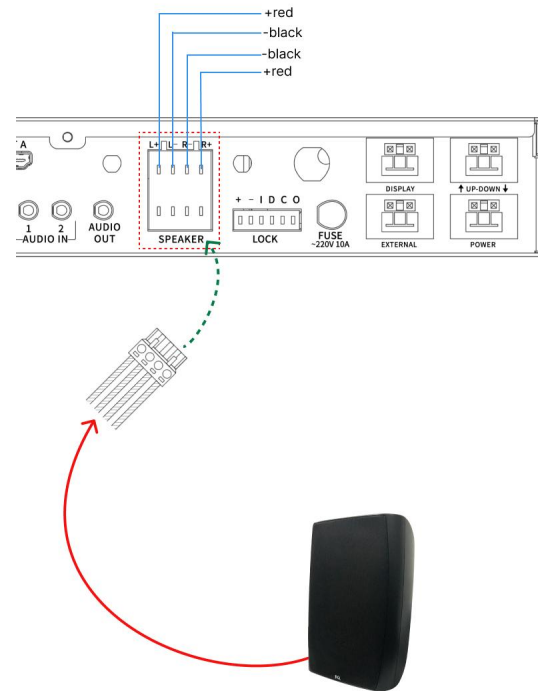
1. The NMP features an integrated power amplifier capable of delivering *2*(40w+40w)* output, designed specifically for connecting with passive speakers.

2. It's important to note that the NMP only supports *fixed impedance* speakers and does not support fixed voltage speakers.

3. To connect passive speakers, users should replace the speaker cable with a *Phoenix audio connector* and plug it into the designated speaker interface.

4. The NMP supports the connection of up to *two pairs* of passive speakers.

After successful wiring and setup, you can control the volume via the Touch Panel, Web-console, or Q-NEX APP.

3.2.2.2 Audio In
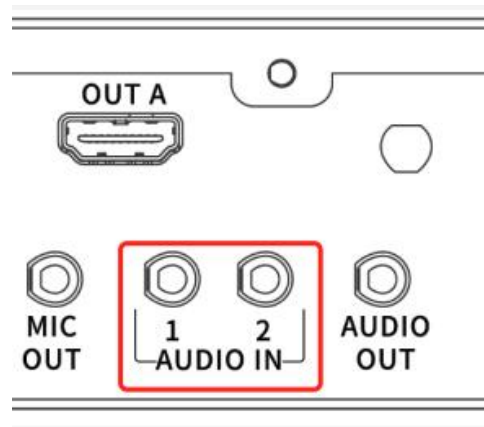
1. Audio IN: Connect external audio devices, such as microphones.

2. Audio OUT: Connect external sound amplification devices, such as speakers or amplifiers, to accommodate various applications.

3.2.2.3 Microphone Control

Manage both wired and wireless microphones on the NMP:

1. **Wired Microphones:** Connect goose neck microphone or other wired devices to the NMP's Mic In port using a 6.5mm microphone jack.
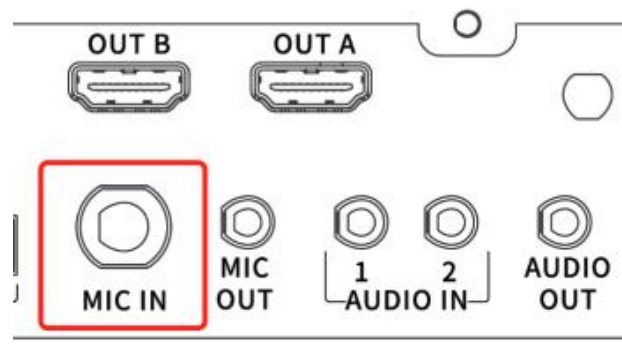
2. **Wireless Microphones:** After successful pairing, wireless microphones can be controlled for volume and other parameters through the NMP, allowing for adjustments as needed. Refer to the **#2.4 Handheld Microphone** and **2.5 Lapel Microphone** sections for specific pairing instructions.

3. **User Interface:** Utilize the Touch Panel or Web-console interfaces to adjust microphone volume, treble, and bass settings.

3.3 Device Control

3.3.1 Power Control
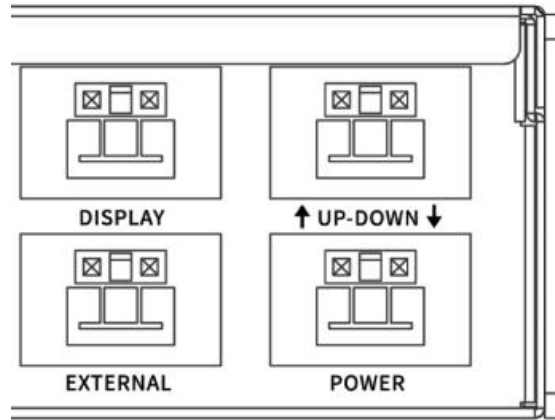
This section governs the power management and operational control of connected devices through interfaces like Display, Up-Down, and External Wago connectors. Users can regulate power distribution and device states by NMP.

Power Specifications：

1. NMP device maximum power: 2000W.
2. Display port maximum power: 1200W.
3. External port maximum power: 1200W. (This power does not count towards NMP's total power consumption)

3.3.1.1 Display

The Display Wago interface serves to provide power to display devices such as IFPs and projectors. Additionally, it facilitates controlled shutdown procedures (with RS232 port) for these devices to mitigate the risk of damage caused by sudden power loss.
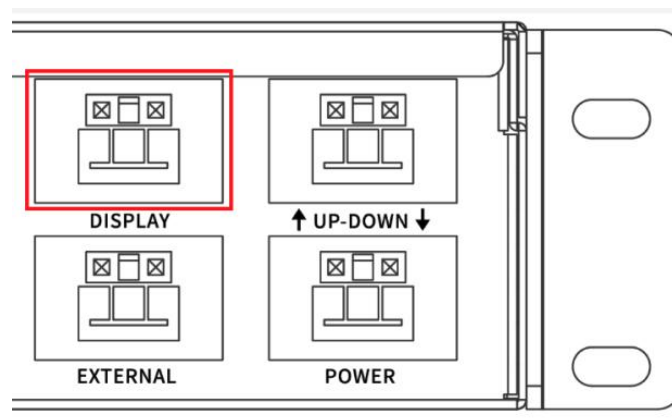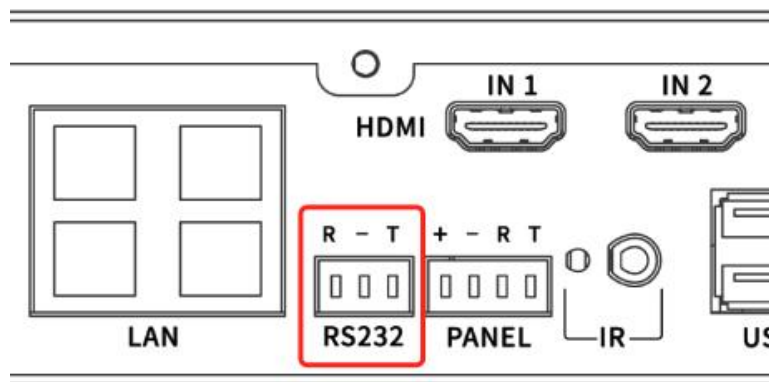

Connection Steps:

1. Replace the device plug with the WAGO connector. Refer to 3.1.1 WAGO Connector Installation Guide for Wago connector installation instructions.

2. Connect the WAGO connector to the DISPLAY port of the NMP.

3. Devices can still be powered on or off by solely connecting to the DISPLAY port.

📋 Note:

For devices requiring controlled shutdown and delayed power-off settings (For example: IFP, projector), connect them to the NMP's RS232 port. This ensures that devices receive proper shutdown instructions before power is cut off, and allows for adequate cooling before shutting down completely.

3.3.1.2 Up-Down

The Up-Down Wago interface is specifically designed for controlling projection screens. Users can remotely raise or lower the projection screen via the NMP's control options, including the Q-NEX Console, mobile app, or Touch Panel.
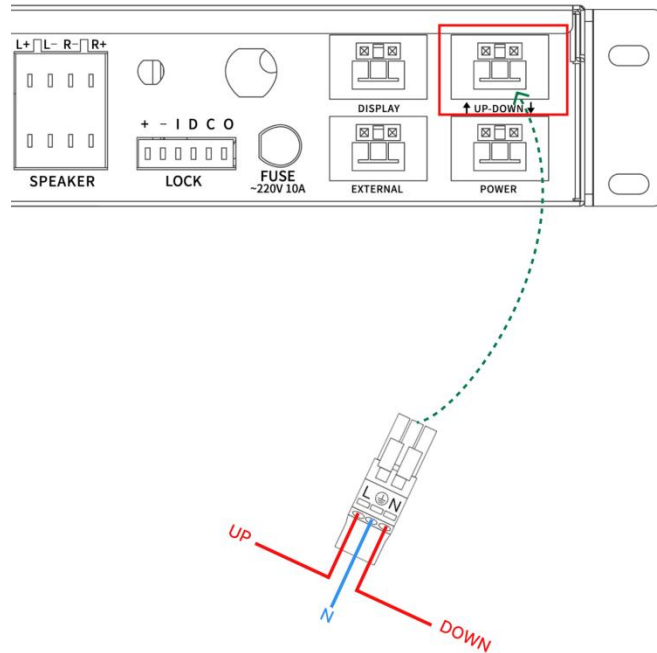
Connection Steps:

1. Replace the plug of projection screen with WAGO connector. Refer to 3.1.1 WAGO Connector Installation Guide for Wago connector installation instructions.

2. Wire Configuration

    –   Connect the "Up" wire to the "L" port of the Wago connector.

    –   Connect the "Down" wire to the "N" port of the Wago connector.

    –   Connect the "N" wire to the "G" port of the Wago connector.

3. connect to Up-Down port.

 : This wiring configuration is exclusively for use with projection screen curtains.

3.3.1.3 EXTERNAL

The External interface on the NMP enables flexible lighting control. Users can directly manage lighting or integrate it with an SPDT switch for customized automation and centralized control. Control settings can be adjusted via the Touch Panel and Web-Console.
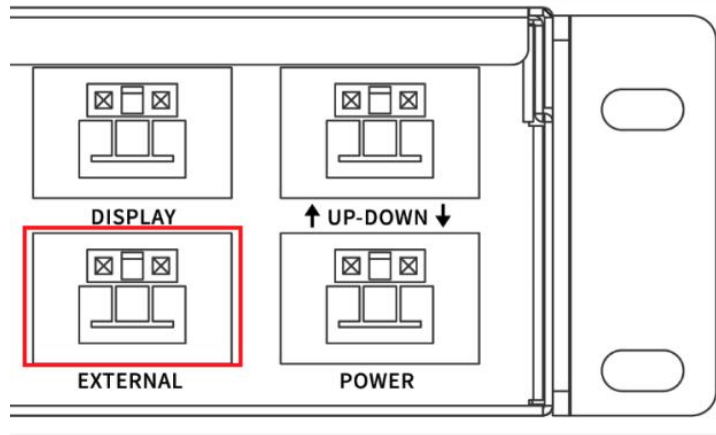
There are two methods to achieve lighting control with NMP: direct connection and integration with an SPDT switch.

1. Direct Connection to NMP:

In this mode, user gains the ability to manage the lighting control by NMP.
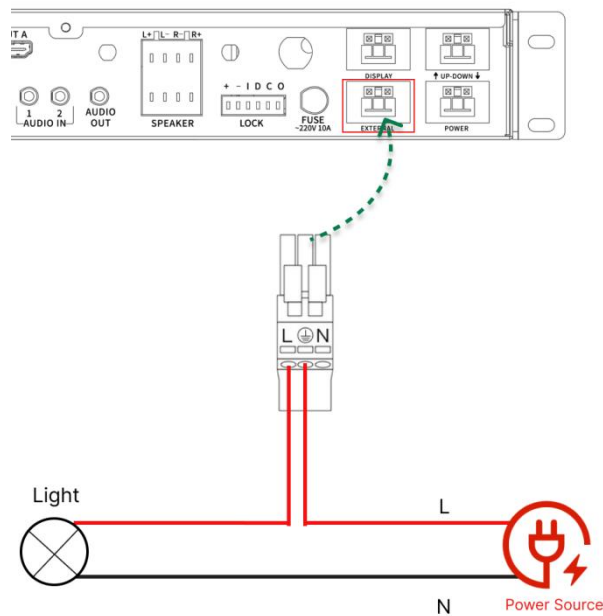
 ：The current-carrying capacity of the"External" should not exceed 1200W

2. Integration with SPDT Switch:

By replacing the existing switch panel with a Single Pole Double Throw (SPDT) switch and connecting it to NMP, both NMP and the switch panel gain control over the light.
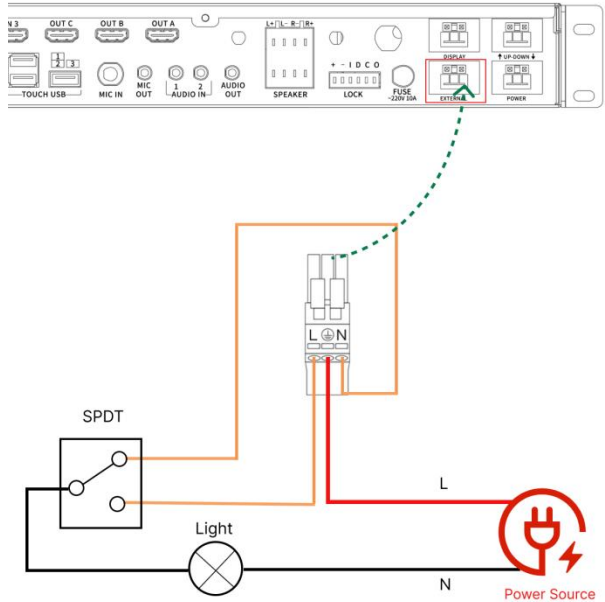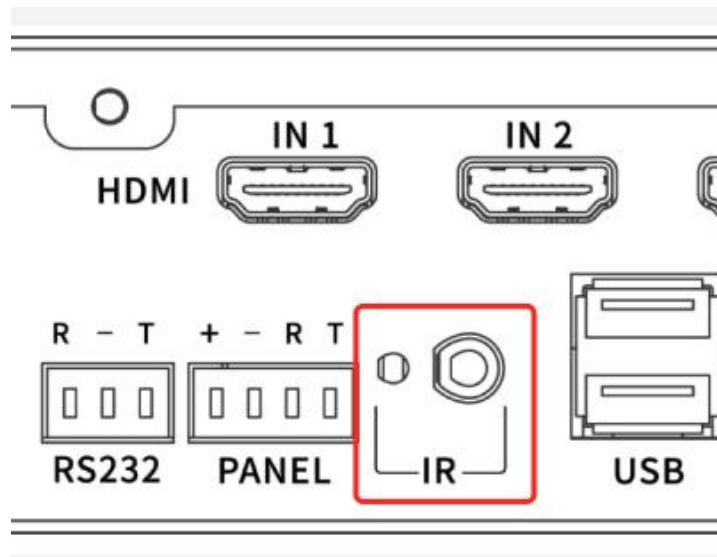
📄 ：The current-carrying capacity of the"External" should not exceed 1200W

After completing the wiring for the external port, you can control it on the Touch Panel and Web-Console.

3.3.2 IR Control

The NMP is equipped with both an IR IN and an IR OUT interface, allowing users to manage IR devices efficiently.

To control IR-enabled devices (e.g., air conditioner, TV, projector), NMP supports batch application of infrared control codes, enabling efficient control without repetitive learning.

Here's a simplified guide for using IR functionality with an air conditioning unit:

1. Check if your air conditioner brand is in the Q-NEX database. If your air conditioner is recognized in the Q-NEX database, identify the control codes to manage and control it through the Touch Panel or Web-console。

2. If not in the database, use IR Learning on the Touch Panel or Web-console for control.

3.3.2.1 Air Conditioner-Identified in the code database

Follow these steps:

1. Connect the infrared emitter to the 'IR' port on NMP, aim it at the air conditioner, ensuring no obstacles between the emitter and the air conditioner:
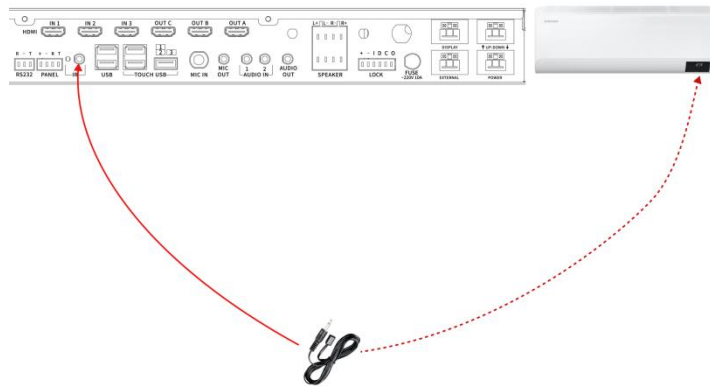
2. Log in to Q-NEX Console -> Dashboard -> Devices -> Processor Manager. Choose your NMP device, inthe 'IR Control' module, click on the 'Edit' button:
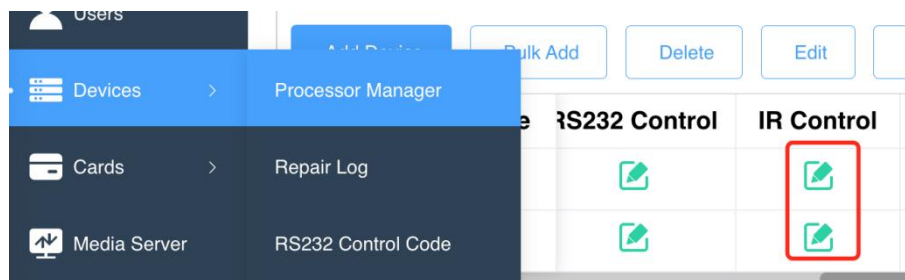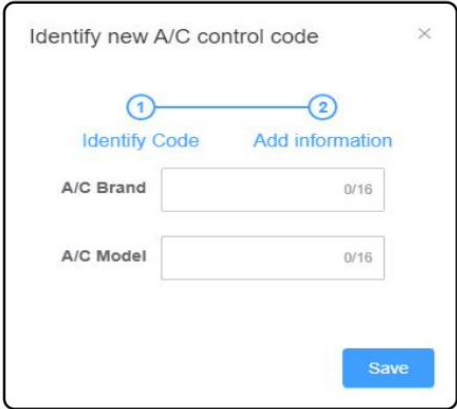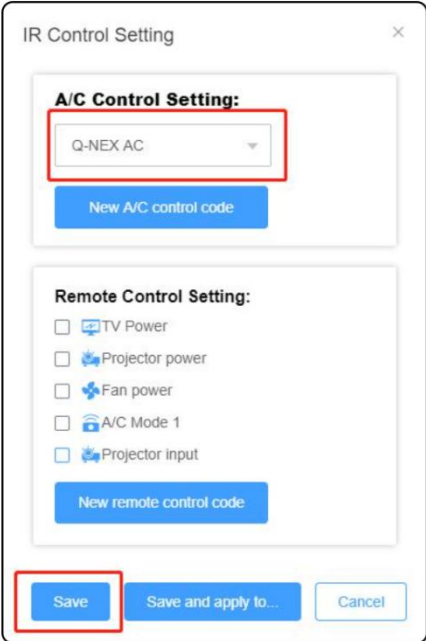

3. Follow these steps:

Step	Screenshot	Instructions
S1		In the IR control page, click "Identify New A/C control code"

S2	Identify A/C control Code ✕ ① Identify Code — ② Add information **Start** ✳ Analyzing...	Click the "Start" button
S3		Align the remote control with the IR interface, press the power button, and the system will automatically identify the remote control code.
S4	Identify A/C control Code ✕ ① Identify Code — ② Add information Start ✔ Identify successfully! Next	Upon successful identification, it will display " Identify successfully."

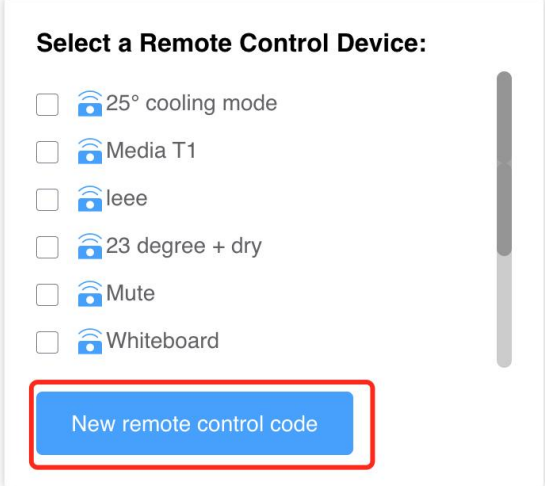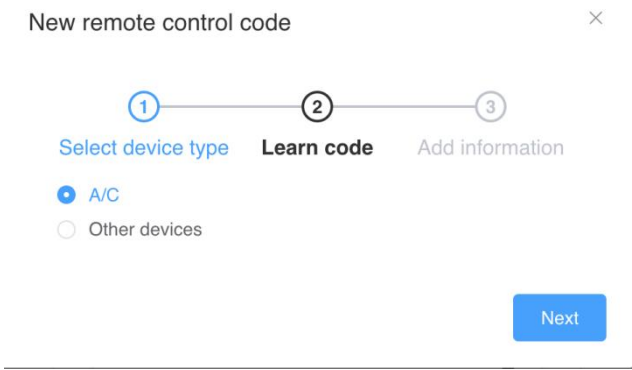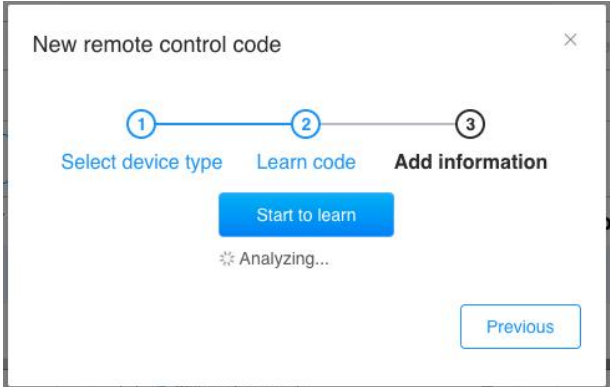| Step	Screenshot	Instructions
S5	Identify new A/C control code ✕ ① Identify Code ② Add information A/C Brand [0/16] A/C Model [0/16] Save	After identification, enter the air conditioner's brand and category, then click Save.
S6	IR Control Setting ✕ **A/C Control Setting:** Q-NEX AC ▾ New A/C control code **Remote Control Setting:** ☐ TV Power ☐ Projector power ☐ Fan power ☐ A/C Mode 1 ☐ Projector input New remote control code Save Save and apply to... Cancel	You will be redirected to the IR Control Setting page. Select the newly added air conditioner name and click Save.

4.   After successful saving, control the air conditioner on the Touch Panel or Web-console
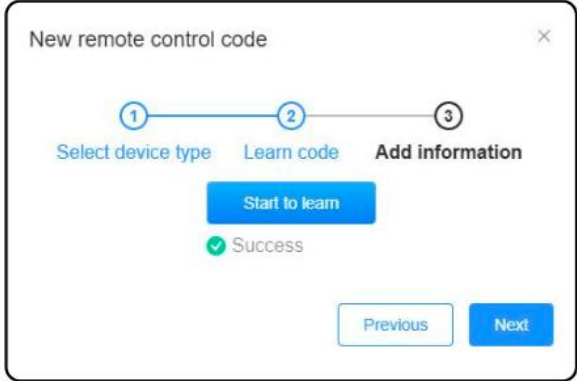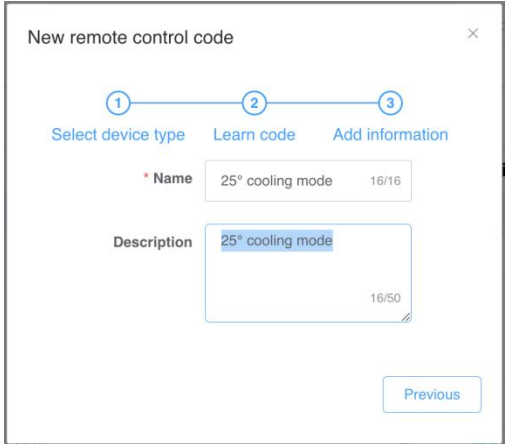
3.3.2.2 Air Conditioner-Unable to Identify in the Code Database
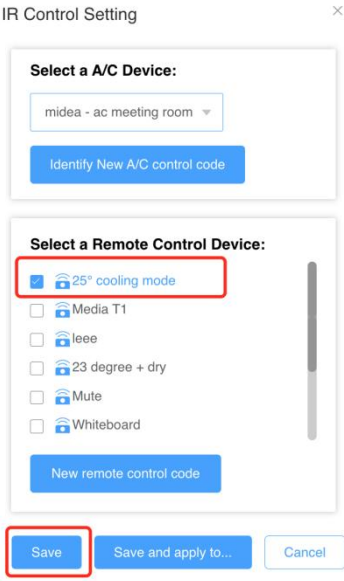
IR remote control module is available for unrecognized air conditioners or other devices using infrared remote control. Connect infrared transmitter to "IR" port of NMP, and aim the transmitter at the device, and ensure there will be no blocks in between the transmitter and the device.

1.   Log in to the "Q-NEX console -> Dashboard -> Devices -> Processor manager". Select your NMP device, and in the "Infrared Control" module, click the "Edit" button. Follow the instructions below:

Step	Screenshot	Instructions

S1		In the IR control interface, click "New remote control code." button
	Select a Remote Control Device: ☐ 🛜 25° cooling mode ☐ 🛜 Media T1 ☐ 🛜 Ieee ☐ 🛜 23 degree + dry ☐ 🛜 Mute ☐ 🛜 Whiteboard **New remote control code**	
S2	New remote control code ✕ ①——②——③ Select device type **Learn code** Add information ● A/C ○ Other devices Next	Select A/C click "Next".
S3	New remote control code ✕ ①——②——③ Select device type Learn code **Add information** Start to learn ☼ Analyzing... Previous	Click "Start to learn"

S4		1. On the remote control, select the desired mode, such as setting the temperature to 25 degrees and choosing the cooling mode. 2. Power off the remote, then aim the remote at NMP's "IR IN" port, and press the remote's power button again. 3. The system will start learning the selected air-conditioning mode. :To learn the power-off function, aim the remote at the IR port and power off directly.
S5	**New remote control code**　× ① Select device type — ② Learn code — ③ Add information Start to learn ✓ Success Previous　Next	After successful learning, a "Success" prompt will appear. Then click "Next" button
S6	**New remote control code**　× ① Select device type — ② Learn code — ③ Add information * Name　25° cooling mode　16/16 Description　25° cooling mode 　　　　　　16/50 Previous	Enter the corresponding function name here

| S7 | IR Control Setting ✕

Select a A/C Device:

midea - ac meeting room ▾

Identify New A/C control code

Select a Remote Control Device:
☑ 🔒 25° cooling mode
☐ 🔒 Media T1
☐ 🔒 Ieee
☐ 🔒 23 degree + dry
☐ 🔒 Mute
☐ 🔒 Whiteboard

New remote control code

Save   Save and apply to...   Cancel | Then you will be redirected to the "IR Control Setting" page. Then, select the newly added function name and click Save. |

1. After successfully saving, you can operate the device on the Touch Panel or Web-Console

📄 ：To learn additional modes for the air conditioner, follow steps S1 through S7. Additionally, note that the process for learning codes on other infrared devices is similar to the above steps

3.3.3 RS232 Control

NMP provides one RS232 interface, enabling control of devices such as IFP, projectors, and PTZ cameras.

1. Prepare cable for RS232 connection

R
Receive

—
Ground

T
Transmit
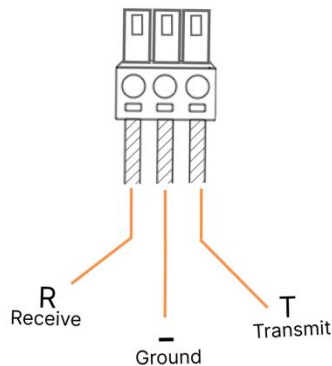
2. If your device uses a DB9 connector, connect one end of the cable to the RS232 connector, with the R, G, T pins corresponding to the RS232 connector. Connect the other end to the DB9 connector.

RS232 Pin Out

Pin #	Signal
1	DCD
2	RX
3	TX
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI
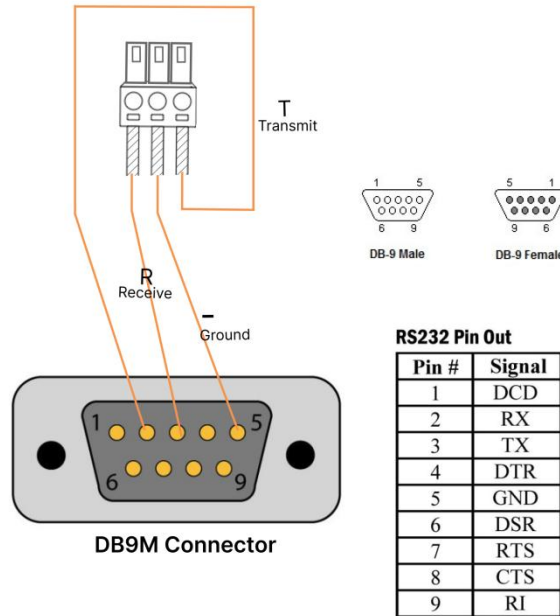
– Connect the RS232 connector's T (transmit) pin to the DB9's RX (Pin 2).

– Connect the RS232 connector's R (receive) pin to the DB9's TX (Pin 3).

– Connect the RS232 connector's G (ground) pin to the DB9's GND (Pin 5).

⊟ : Our accessory box includes both DB9M (DB9 Male) and DB9F (DB9 Female) connectors. Use the appropriate connector based on your device's requirements.

3. Insert the RS232 connector into the RS232 interface on NMP, following the diagram provided:
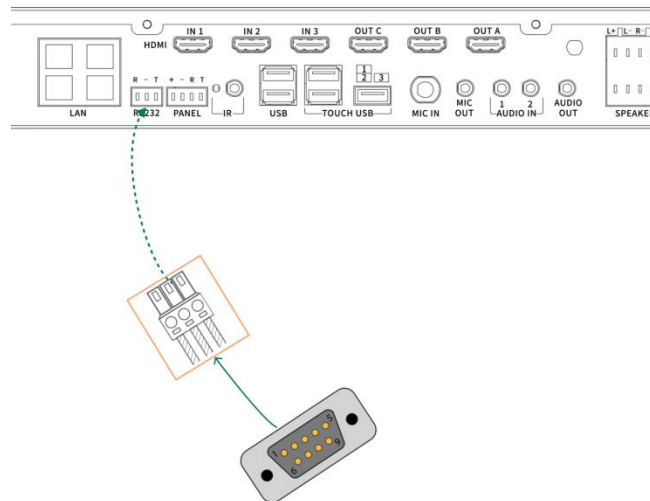
4. Connect the other end of the RS232 cable to the designated port on your device.

5. Navigate to the Q-NEX console and select the appropriate device type under "Dashboard -> Devices -> Processor manager" page.
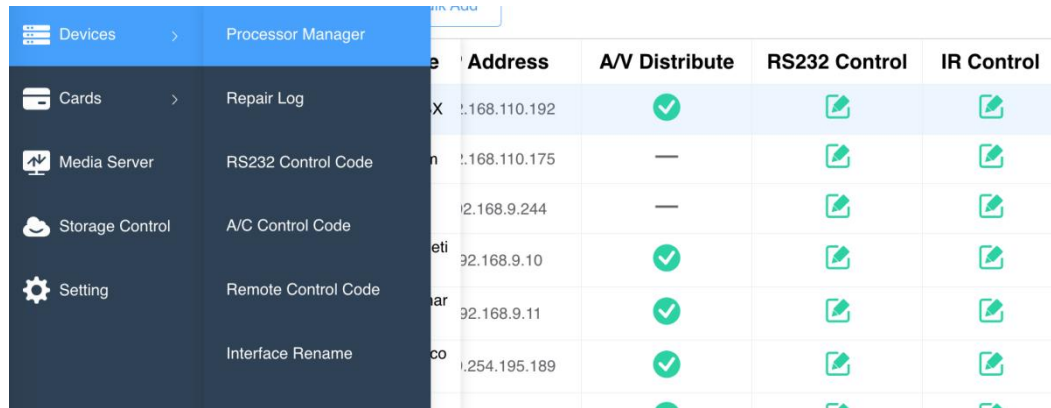
3.3.4 Electric Lock Connection

Please connect the required interface according to your electronic lock type.
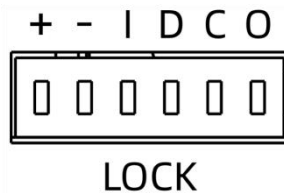
No.	Symbol	Description
1	+	Power (output：12V 800mA)
2	-	Power ground (negative level)
3	**I**	Door switch interface
4	**D**	Door lock status interface
5	**C**	Relay common end, load capacity DC3A/30V
6	**O**	Relay normally open, load capacity DC3A/30V

4. Contact US

Q-NEX (https://qnextech.com/) is a subsidiary of Returnstar Interactive Technology Group Co, Ltd, a company that has been dedicated to the education industry since 2006.

Q-NEX is focused on delivering a Smart Campus Solution that converges AV and loT control across all campus facilities. Q-NEX offers deeply customized options that assist school IT administrators in managing all electronic facilities and allows teachers to simplify the operations of a multimedia classroom.

 If you encounter any problems during installation and use, please contact us: info@qnextech.com