INSTRUCTION MANUAL

iPX5455

4 Ch Ethernet Paging / Music Client
(Audio Extractor)

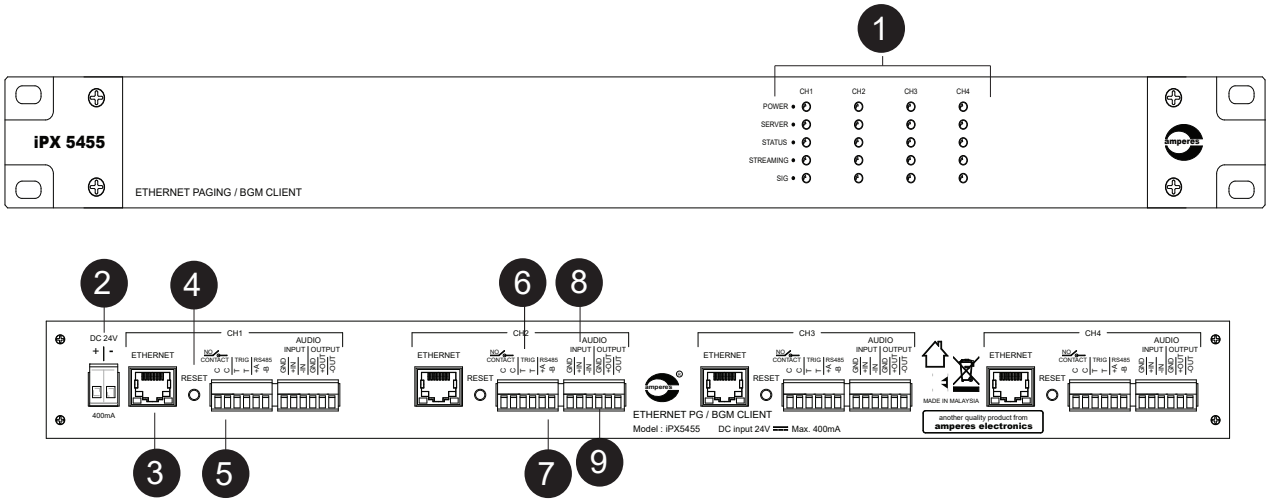
Thank you for choosing another quality product from Amperes Electronics.

iPX5455 is a 4 channel Ethernet Paging / Music client in a 1 hu rack mounted casing. It is also known as audio extractor, which extracts audio and data from network to analogue audio outputs and RS485 data. Each module works independently and thereby each of them shall be assigned into individual unique IP address.

It is most suitable for rack mount installations, providing a neat rack setup as compared to small loose module, most notably when multiple channels are to be used in the same rack.

applicable for iPX5155 FW 2.31 and above
Ver 1 / 2023

Parts Identification



1. INDICATOR LEDS

The LED indicators for various status of individual channel, when lit, indicates the followings :

POWER - This blue LED shall lit when each module is powered On.
SERVER - This green LED shall lit when each module successfully establish a connection with Paging Server (iPX5101).
STATUS - Blink whenever there is a network activity ongoing.
STREAMING - Blink whenever each module is transmitting / receiving streaming audio to / from another paging client or music server

2. POWER PORT

24V DC power supply input which powers each individual module of iPX5455.

3. ETHERNET PORT

Ethernet port for connecting to network switch. Each module shall have its own network port and to assign a unique IP address when doing setup.

4. RESET BUTTON

Button to allow iPX5155 enters Bootloader mode or reset settings to factory defaults. Each module shall have its individual button.

Bootloader mode: To enter this mode, hold the reset button until POWER, SERVER and STATUS LEDs lit. Enter this mode to do firmware updating if normal mode updating does not work. All settings remain intact in this mode.
Reset to factory default settings: Hold the reset button until POWER, SERVER, STATUS and STREAMING LEDs lit will reset all settings to factory defaults.

5. RELAY CONTACT

This port provides a dry contact which can be used to connect E/M overriding signal or activate ALL CALL at speaker zone selector.

6. REMOTE TRIGGER PORT

We can activate the iPX5155 module using voltage free dry contact. Connecting PM series paging mic / MR1301 message recorder / TI6100 Telephone Interface dry contact to this port will activate the iPX5155 and have their analog audio signal stream to the network. This port only work when the iPX5155 operates as Input mode. (Refer page 7)

7. RS485 PORT

For data transmission (RS485) among iPX5155, PD paging mic and zone decoder like TD6240 / TD6400 / TD6080.

8. AUDIO INPUT PORT

Connect paging mic or other audio source analog audio signal to this port. The signal shall be in balanced line level.

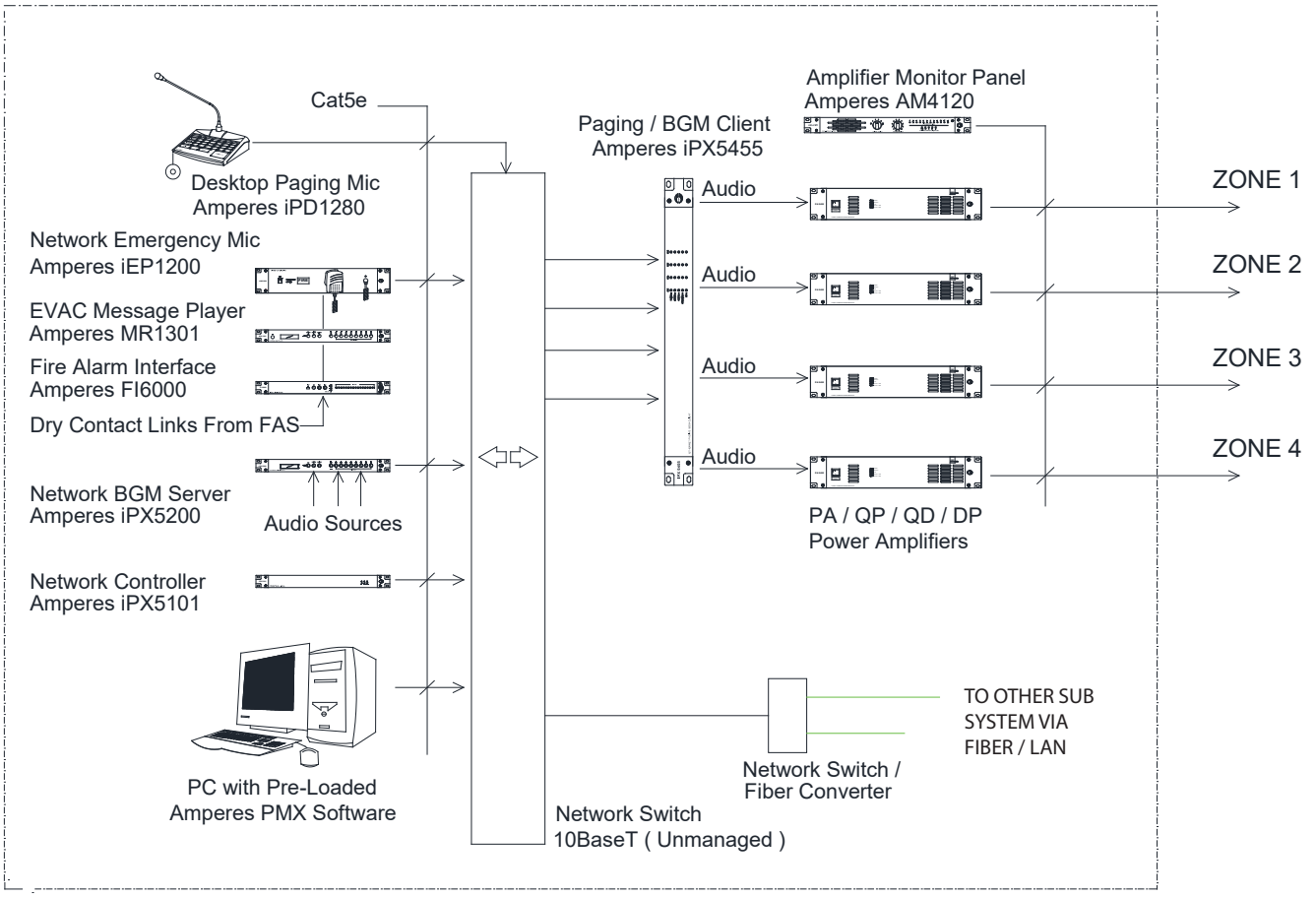
9. AUDIO OUTPUT PORT

iPX5155 broadcast analog audio signal via this port to mixer or amplifier. The signal is in balanced line level.

Note :

iPX5455 is basically a combination of 4 nos iPX5155 in a single enclosure. Thereby, we shall refer them as iPX5155 module in the following sections.

General Schematic Diagram



The schematic above shows an application of iPX5455 with each individual output representing a single zone. Combination of TD6400 / 6080 or TD6240 + ZS can be used for zone expansion.

iPX5155 modules can be used is sub rack alongside iPX5455.

Similar to iPX5155, each of the module can be assigned as input or output.

Connection Diagram

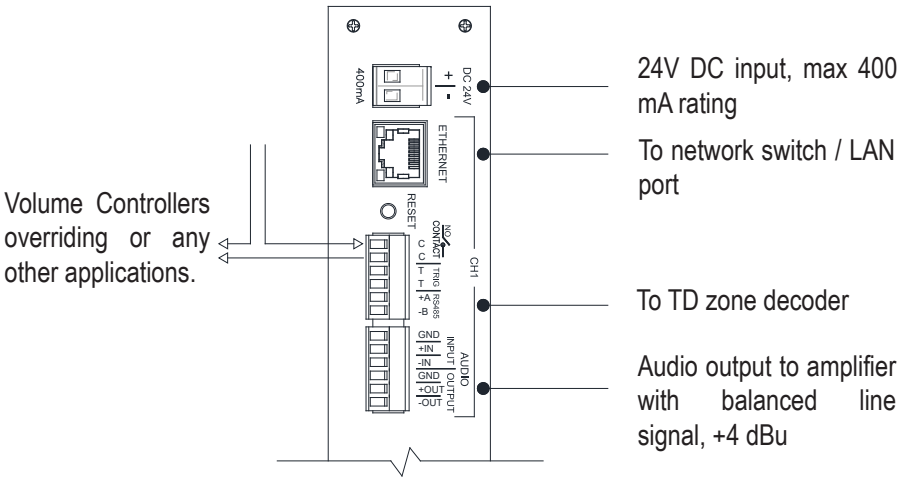
Using iPX as Output

Each module within iPX5455 works independently, can be used as Input or Output.

This diagram shows the module used as output. RS485 can be used to control zone decoder.

If each module is to represent a single zone, RS485 connection to TD can be omitted.

Also refer to Page 6 and 7 for device setup.

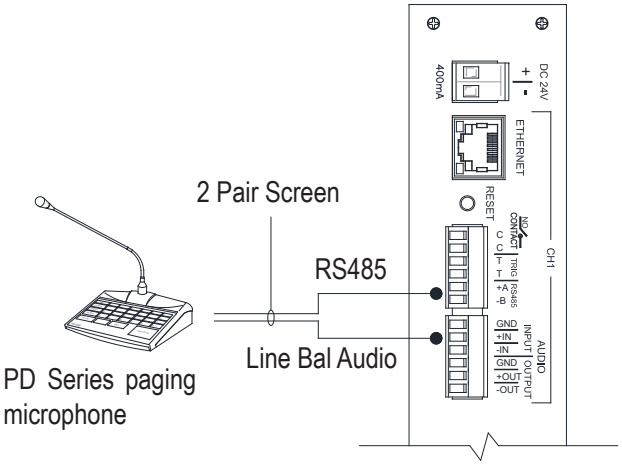


Using iPX as Input with PD Paging Mic

PD Series of paging microphones such as PD1240, 1280 and 1160 can be connected to IPX environment via iPX5455, setting the module as input source.

Streaming of any audio and data from paging microphone is event triggered, that is only when the paging mic is activated.

Also refer to Page 6 and 7 for device setup.

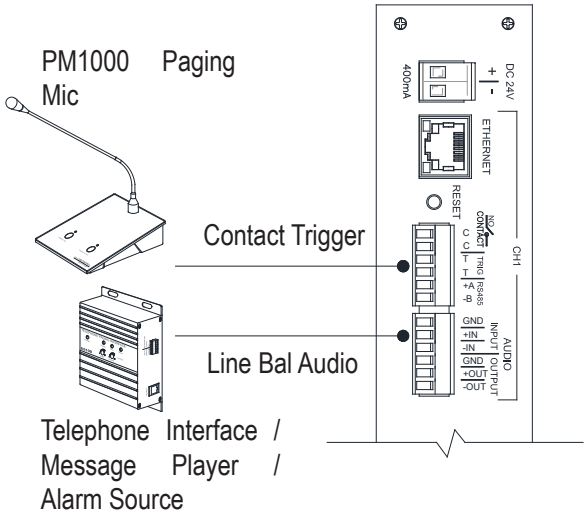


Using iPX as Input with Analog Mic or Telephone Interface

Any audio from paging mic or any other audio source can be connected to iPX environment using one of the module.

Streaming of any audio is event triggered, and destination of the audio can be programmed.

Also refer to Page 6, 7 and 8 for device setup.

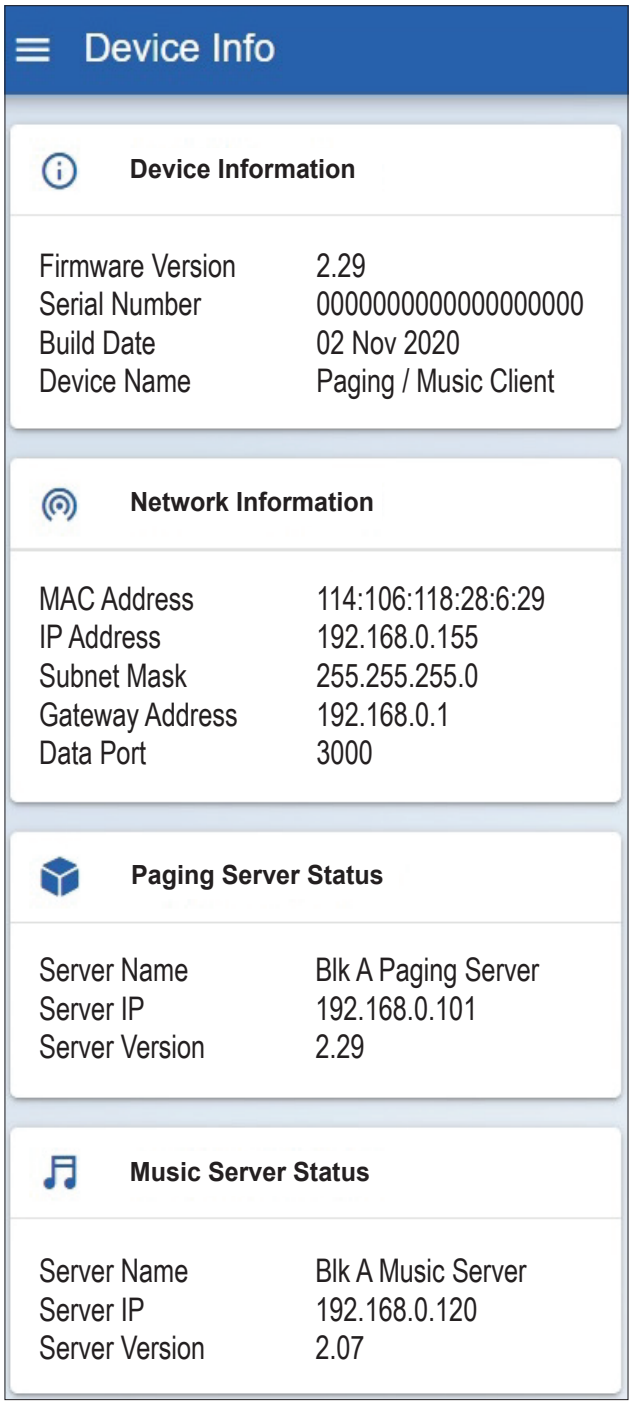


Device Setup

iPX5455 shall require some setups via web browser. Kindly follow instruction listed below. The default IP address of each module is **192.168.0.100**. Default Username and Password are both **"admin"**.

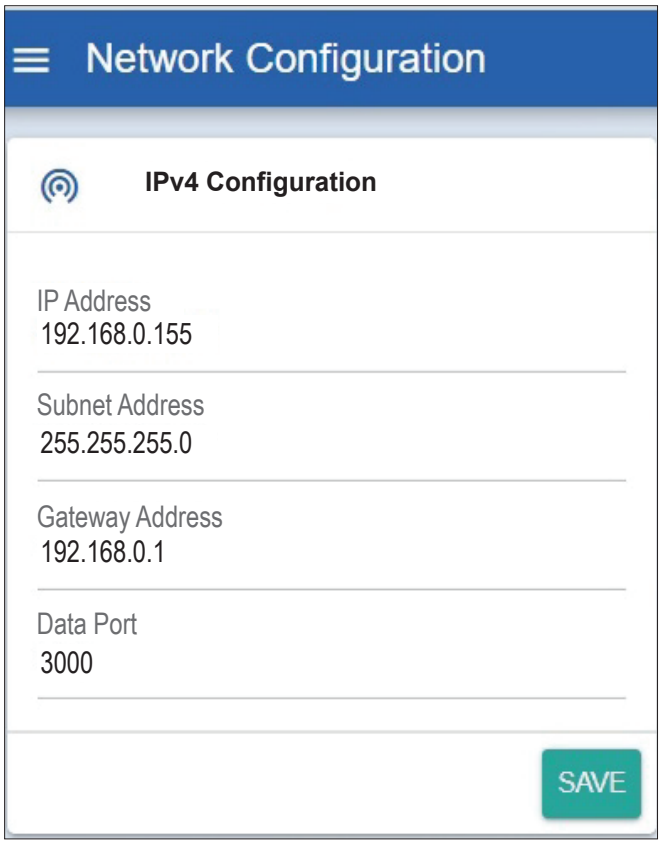
Device Info

The first page appear upon login shall be Device Info. Information such as firmware version, networking addresses and paging server status are shown. No configuration is needed in this page.



Network Configuration

Edit iPX5155 IP address, Subnet address and Gateway address here to suit you networking environment. It is recommended to leave the Data port number unchanged. Click the "SAVE" button to save your changes.



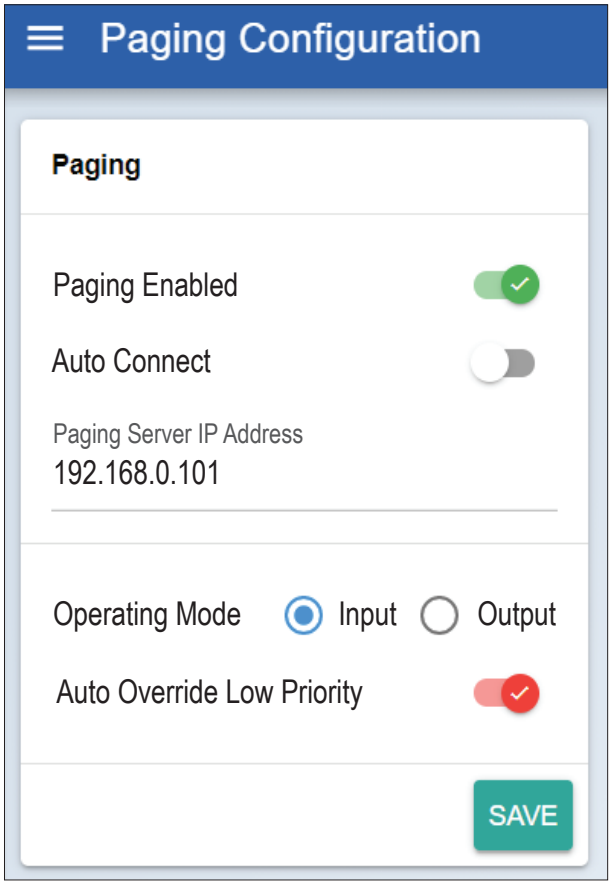
Device Setup

Paging Configuration

Paging Enabled: Enable this setting if an iPX5155 is used as a paging client. If the iPX5155 is merely used as a music client, we can disable this setting.

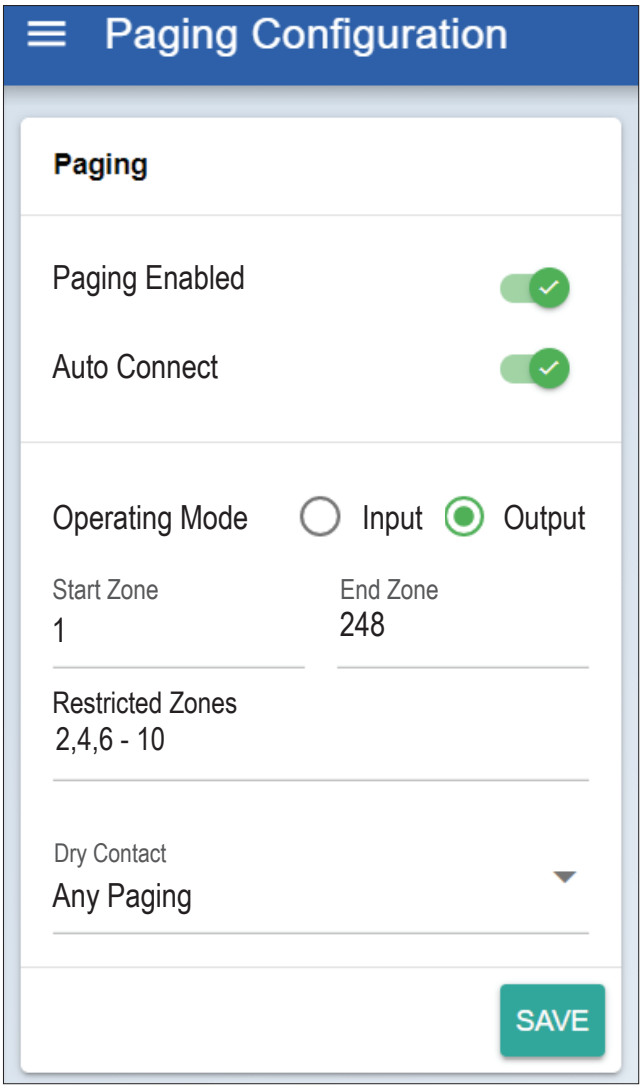
Auto Connect: We can either turn On the Auto Connect to allow iPX5155 search and connect to Paging Server automatically or turn Off the setting and specify the Paging Server IP address here.

Note: If Paging Server IP address is changed to an unknown value, turn On the Auto Connect allow auto capture the server IP address and show up in the device information page.



Input Mode Settings

Also refer to Page 8 in relation to Remote Trigger activation.



Output Mode Settings

Device Setup

Operating Mode

An iPX5155 can either operate in Input mode or Output mode. Depends on the chosen operating mode, some settings only available in Input mode while some only in Output mode.

(A) Input Mode: An iPX5155 that a paging mic / TI6100 is physically connected to shall be operated in Input mode. This allows the iPX5155 to receive paging audio, RS485 data or dry contact triggering from the devices.

Auto Override Low Priority (AOLP): Enable this setting if we want to allow paging mic that connected to iPX5155 RS485 port to override other lower priority devices. For iPD / PD series paging mic the priority level shall be configured in the paging mic configuration.

(B) Output Mode: An iPX5155 that an amplifier / zone decoder is connected to shall be operated in Output mode such that this paging client able to send the paging audio to the amplifier to play the paging or send the RS485 data to activate zone decoder channels.

Below are settings that available in Output mode:

Start / End Zone: This is iPX5155 serving zone range. Whenever paging zones that fall within this zone range but excluded in the Restricted Zones (see below) were called, the iPX5155 shall output the paging audio and activate the corresponding channels on zone decoder.

Restricted Zones: Zone(s) that not served by iPX5155.

Dry Contact: There are three options to control the activation of iPX5155 Relay Contact port. Refer to Table.1

Dry Contact Setting	Outcome
Disable	Disable Relay Contact
Any Paging	Activate Relay Contact when user a) Activate paging on iPD / PD series paging mic b) Activate paging on PM1000 / TI6100 by triggering the Remote Trigger port of an iPX5155 that operate in Input mode c) Activate siren, emergency paging or messaging on iEP1200 / iEP1202 d) Activate siren of iEP1200 / iEP1202 via iPD / PD series paging mic
Siren, Emergency Paging or Messaging	Relay Contact only get activated when user perform item (c) and (d) above

Table.1: Activation of Relay Contact Port

Device Setup

Remote Trigger

Remote Trigger settings only available when iPX5155 operates in Input mode.

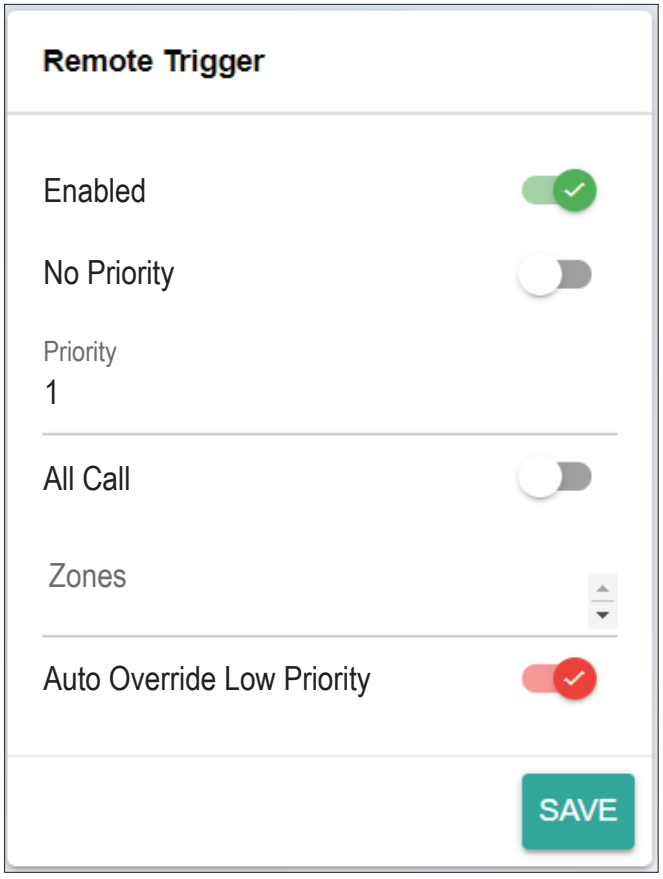
Enabled: Enable this setting when a PM1000 / TI6100 is used as the paging source to activate iPX5155 via its Remote Trigger port.

No Priority: There are 10 paging priority levels. Enable this setting shall make a paging device that connected to this iPX5155 operates in the lowest priority level. Disable this setting shall allow us to configure level 1 to 10. The lower the number the higher the priority level.

All Call: Enable this setting to page to all zones when the iPX5155 Remote Trigger port get activated. Disable this setting shall allow us to configure a zone range.

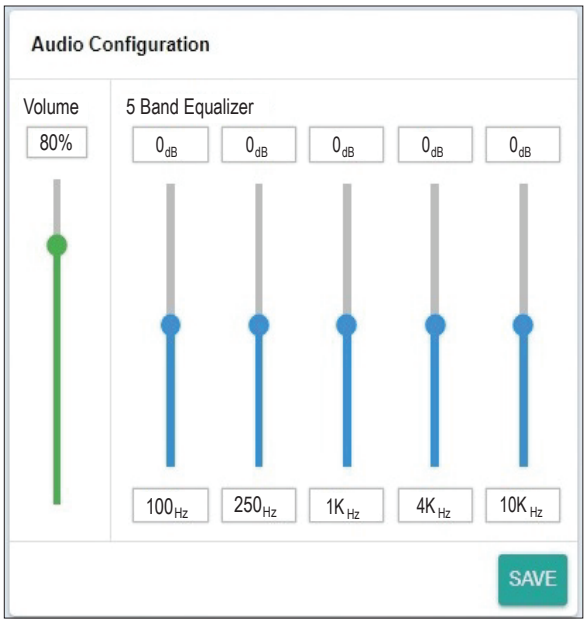
Auto Override Low Priority (AOLP): Enable this setting shall allow a paging mic that connected to this iPX5155 Remote Trigger port to override other lower / same * priority devices.

* To allow same priority override, user need to enable Same Priority Override setting in iPX5101.



Audio Configuration

To adjust volume and EQ of paging audio. These settings only available when iPX5155 operates in Output mode.



Device Setup

BGM Configuration

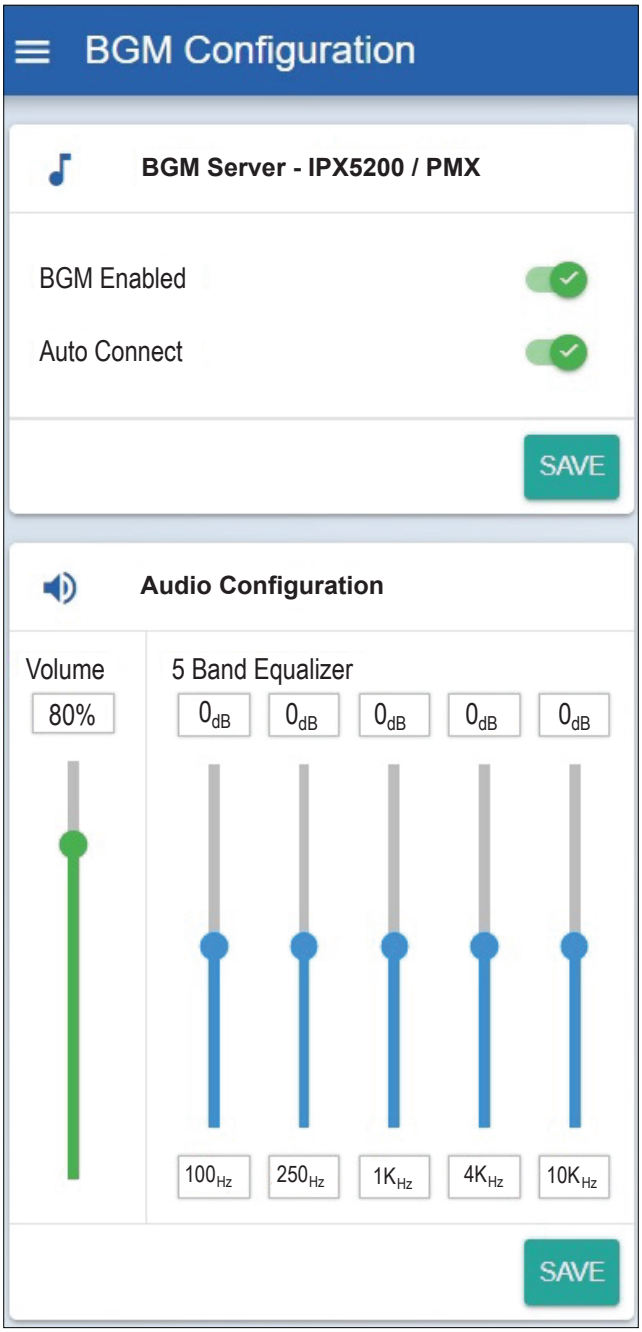
BGM configuration only applicable to iPX5155 that operate in Output mode.

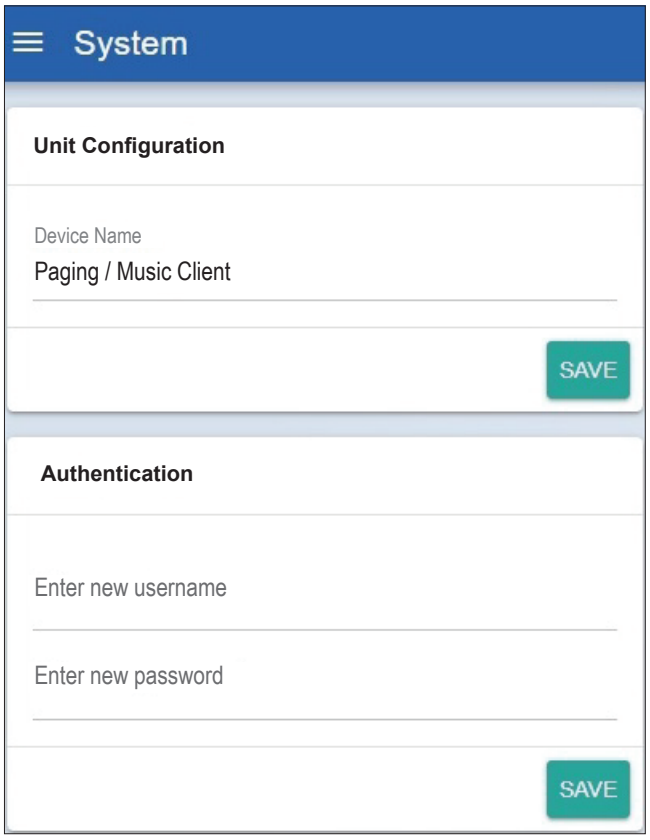
BGM Enabled: Enable this setting if an iPX5155 acts as a music client. If an iPX5155 serves as both paging and music client, enable this setting shall allow music to be played when no paging is active and cease playing music when paging is active.

Auto Connect: We can either turn On the Auto Connect to allow iPX5155 search and connect to a Music Server automatically or turn Off the setting and specify the Music Server IP address here.

Note: If Server IP address is changed to an unknown value, turn On the Auto Connect allow auto capture the server IP address and show up in the device information page.

Audio Configuration: To adjust volume and EQ of music audio.





System

Unit Configuration: We can enter a meaningful Device Name here. E.g. “Paging / Music Client”. The name shall be shown in iPX5155 Device Info page and iPX5101 Paging Server - Client Browser tab.

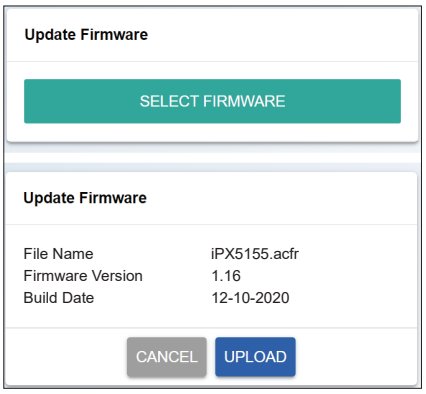
Authentication: You can alter the user name and password to avoid unnecessary access to the system.

Update Firmware

Update Firmware: System firmware shall be updated once in a while when new features are available or to fix bugs. As each module is basically an iPX5155, they will use iPX5155 firmware and each module is to be updated individually. There are 2 methods of doing;

Update firmware in Normal Operation Mode

1. Open a browser and type in the iPX5155 IP Address.
2. Under “System” page look for “Update Firmware” section as shown in below.



Click “ SELECT FIRMWARE” and choose a binary file with “.acfr” extension. Click “UPLOAD”.

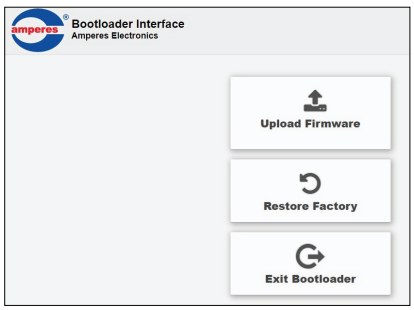
Once the update is completed, the browser should enter the login page.

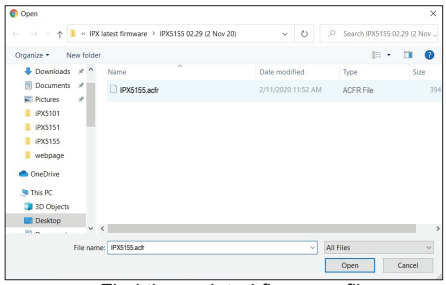
Update firmware in Bootloader Mode

If the iPX5155 “hanged”, it is required to perform system reset by :

1. Press & hold the reset button until “ STREAMING ” LED is turned ON. This will set the IP address to default address 192.168.0.100.
2. Open a browser and enter the IP address 192.168.0.100. A web page as shown below shall appear.
3. Select “ Upload Firmware ”, choose a binary file with “ .acfr ” extension and click “UPLOAD”
4. Once the uploading is completed, the browser shall enter the login page.

Click the Upload Firmware button to find the updated firmware file.

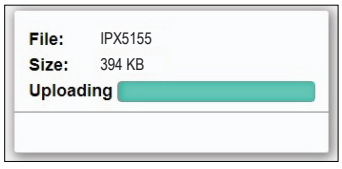




Find the updated firmware file.

Ready to upload, click Upload button to upload the firmware.

Updating progress



After finish updating firmware, the browser automatically restart.

Technical Specification

Power requirement :	
Voltage	18 ~ 24V DC (Normally DC 24V)
Current	240 mA (All modules operating)
Power consumption	6 W (All modules operating)
Connection	
- No of Channel	4 (operates individually)
- LAN interface	RJ45 (10 / 100 Base - T)
- Protocol	TCP/IP, UDP, HTTP, IGMP, ADMP
Audio	
- Analog in (max)	1.25 Vrms
- Analog out	1.25 Vrms (with Analog in 1.25 Vrms)
- Input impedance	300 Ohm
- Input capacitance	100 pF
- Total harmonic distortion (THD)	0.1%
- S/N ratio (full scale signal)	83 dB
- Paging encoding	G.722
User interface	Google Chrome, MS Edge, IE V8+
Firmware upgrade	Via Web Browser
Operating condition :	
Temperature	-20°C ~ 80°C
Humidity	0 - 70%
Case :	
Dimension (WxHxD)	482 x 44 x 180 mm
Weight	2.4 kg

Note:
The above specifications are correct at time of printing but subjected to changes without prior notice due to product improvements.

Warranty Conditions

Only Amperes Electronics Service Centres are allowed to make warranty repairs : a list of Amperes Electronics authorized service centres may be asked by the purchaser or send directly to Amperes Electronics Sdn Bhd at 70 Jalan Industri PBP3, Tmn Perindustrian Pusat Bandar Puchong, 47100, Puchong, Selangor. This warranty is not valid if repairs are performed by unauthorized personnel or service centres.

This warranty covers only repairs and replacement of defective parts. Cost and risk of transportation as well as removal and installation of the product from the main system are for the account of the purchaser. This warranty shall not extend to the replacement of the unit.

This warranty does not cover damages caused by misuse, negligence in application as well as using the product with power supply voltage other than shown on the product, or any other power supply source / adapter not recommended by the manufacturer.

This warranty does not cover damages caused by fire, earthquakes, floods, lightning and every cause not directly related to the unit.

This warranty does not include any indemnity in favor of the purchaser or the dealer for the period out of use of the unit, moreover the warranty does not cover any damages which may cause to the people and things during the use of the product.

This warranty certificate is valid only for the described product, and is not valid if modifications are made on this certificate or identification labels applied to the unit or any other modifications to the physical unit other than its intended usage.

This warranty covers all the material and manufacturing defects and is valid for a period of 36 months from the date of purchase or for a specified period in countries where this is stated by a national law. In this case, the extension is valid only in the country where the product is purchased.

Amperes Electronics Sdn Bhd is not obliged to modify previously manufactured products under warranty if the design changes or improvements are made.

The purchaser is deemed to agree to the above warranty conditions once the product packaging is unpacked., Otherwise the product shall be returned to the seller in proper original condition.

Disclaimer

Information contained in this manual is subjected to change without prior notice and does not represent a commitment on the part of the vendor. Amperes Electronics Sdn Bhd shall not be liable for any loss or damages whatsoever arising from the use of information or any error contained in this manual.

It is recommended that all services and repairs of this product to be carried out by Amperes Electronics or its authorized service agents.

Amperes products must only be used for the purpose they were intended by the manufacturer and in conjunction with this operation manual.

Amperes Electronics Sdn Bhd cannot accept any liability whatsoever for any loss or damages caused by service, maintenance or repair by unauthorized personnel, or by use other than that intended by the manufacturer.

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