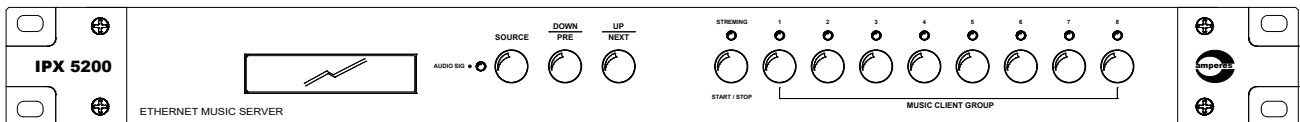




INSTRUCTION MANUAL

iPX5200

IP Network Audio / BGM Server
(Network Audio Inserter)



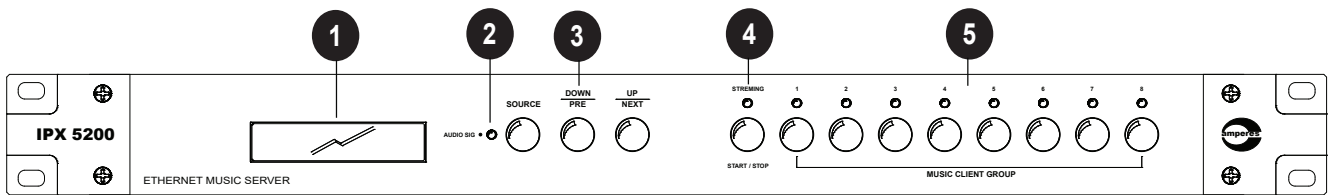
Thank you for choosing another quality product from Amperes Electronics.

Amperes iPX Series of IP equipment provides multiple advantages over conventional systems in terms of cabling infrastructure and future expansions. With continuous development of more IP products in the pipeline, the possibilities of more applications based on IP shall be beyond imagination.

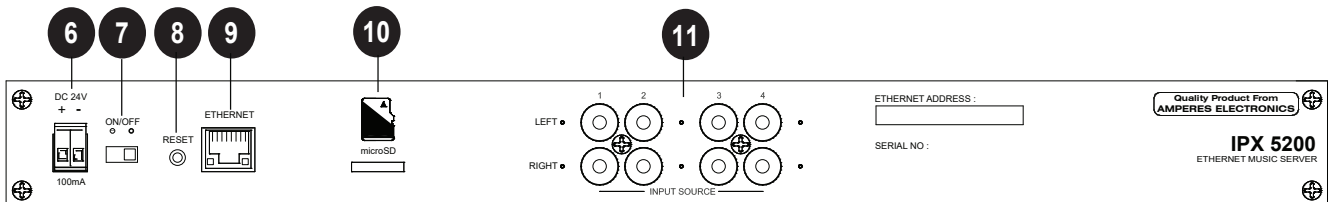
With iPX modules, existing conventional system can be converted into IP without much changes, thus reducing the cost of upgrading. With our policy of understanding the needs of the market, we offer some simple tools with powerful functions to achieve the requirements. A simple graphical illustration and basic engineering knowledge shall be sufficient to apply these products into your installations, making them systems of countless limitations.

iPX5200 is a IP Network Audio / BGM server (Network Audio Inserter) , which would enable analogue audio output from players to be fed into the IP network and played at iPX5300 music clients at remote buildings.

Parts Identification



Front View



Rear View

1. LCD DISPLAY

2 X 16 characters LCD displaying the units' parameters and programming instructions.

2. AUDIO SIG

To be supported soon.

3. CONTROL BUTTON

Button for menu, various playback and source.

4. PLAY / STREAM BUTTON

To control start / stop the playlist.

5. MUSIC CLIENT GROUP KEY

8 front group buttons for direct music client activation.

6. POWER CONNECTORS

24V DC input for power, use only regulated power supply or Amperes PS9400 power supply unit.

7. POWER SWITCH

Power switch for the unit.

8. RESET BUTTON

Press this button to reboot the unit. If we hold the button for 5 seconds, iPX5200 will enter bootloader mode where we can perform RESTORE FACTORY settings, check IP address and firmware versions.

Parts Identification

9. ETHERNET PORT

Connectivity to network switch.

10. MICRO SD CARD SLOT

SD Card Slot, up to 16GB capacity is supported by the unit (standard supplied card is 16GB).

11. LINE INPUTS

RCA jack for receiving external audio source with line output, such as CD, MP3 players, etc.

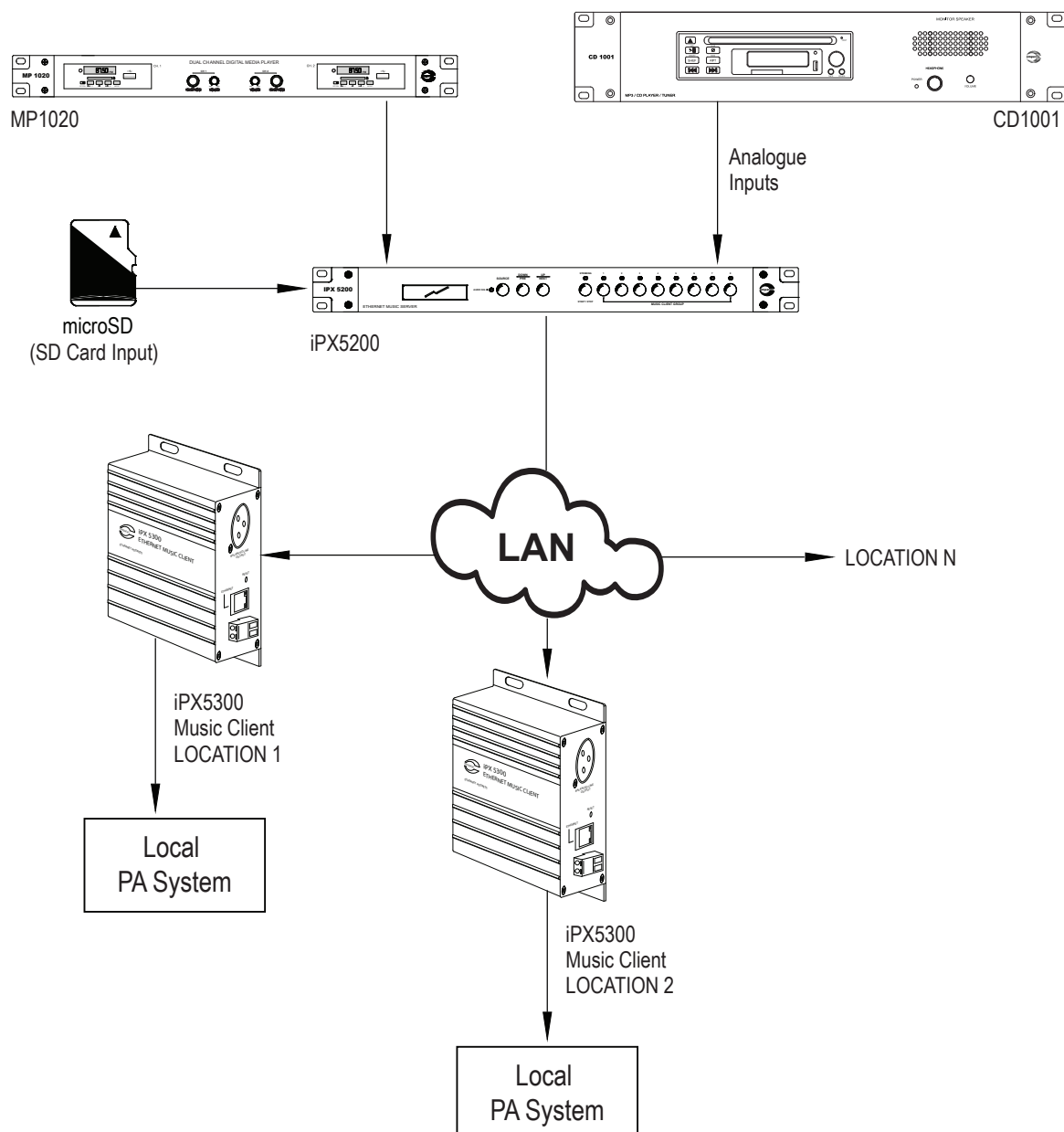
iPX5200 Application Note

iPX5200 is a music server which is similar to pre-amplifier mixer / source selector of analogue version. The difference is that it works in LAN environment for music transmission over IP Network to multiple locations in installations such as university campus, factories, multi tower complexes and soon over the internet to remote locations.

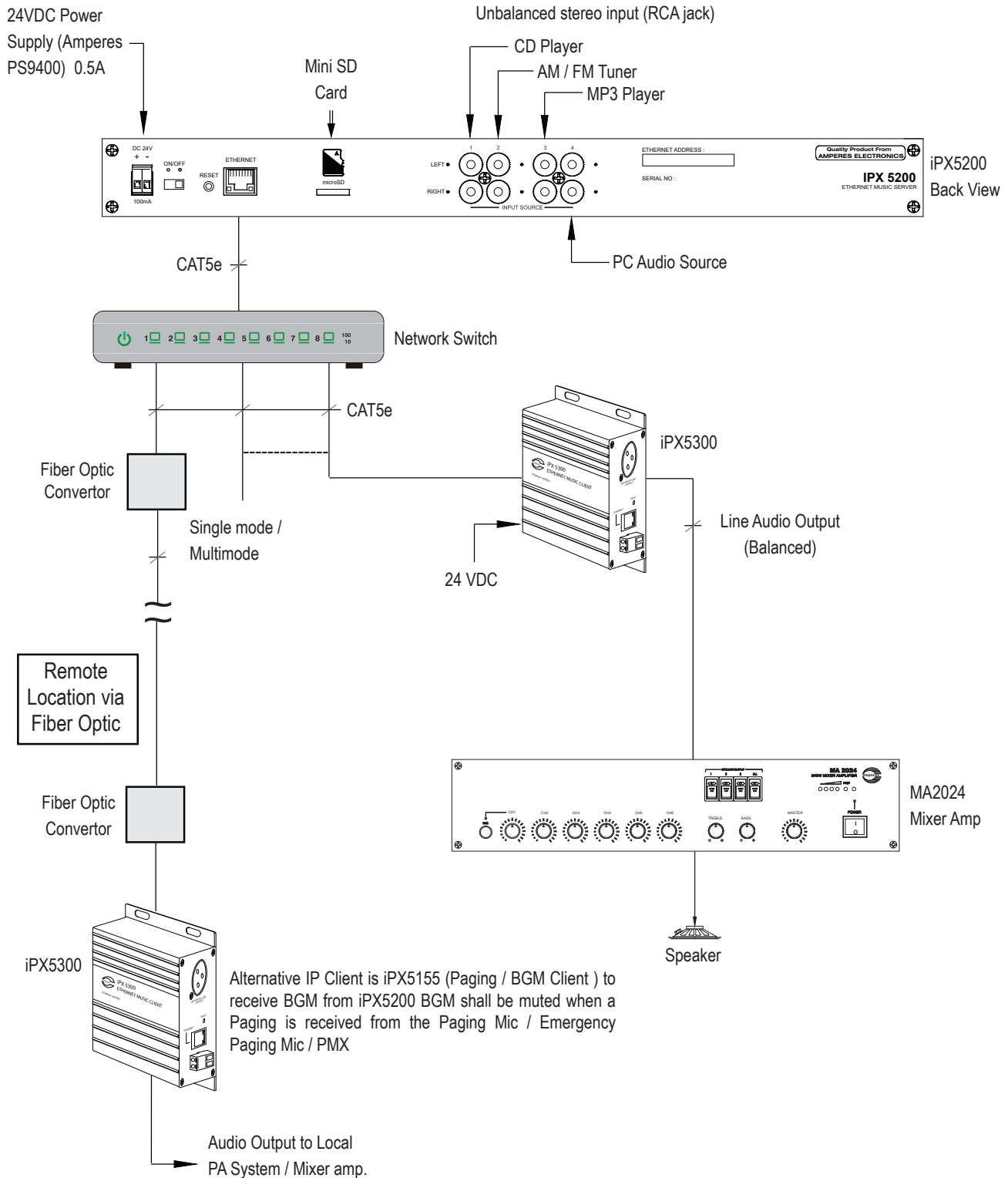
It accepts analogue music sources such as CD player, tuner or perhaps music from IPOD / IPAD and converts the selected source into high quality digital format and thereafter transmit it over the IP. In addition, the unit has a slot for SD card input, which can transfer files such as MP3, WAV directly over the network.

One distinctive difference from other similar product is the client selection feature. The central has the control over which destination to broadcast the music by push of buttons, which can be easily configured.

Application Diagram



Connecting to iPX5200



Device Setup Via Browser

iPX5200 shall require some simple setups, kindly follow the step by step instructions as listed below. The unit shall be connected to LAN network together with iPX5300 IP Clients to form a complete system. The default IP address is **192.168.0.100**. Login page shall appear and the default User ID and Password are both “**admin**”.

Device Info:

Info: Providing hardware, network and System configuration. This shall be the first page once you entered the system's http browser.

Network Configuration: For configuration of IP address and its related ports.

System Configuration: For Application Settings such as volume controls, User and Password setup and System's web page and firmware updates.

Music Server: Providing real time information on streaming status, Client connections and file information in SD Card.

The screenshot displays the 'DEVICE INFO' page. On the left is a sidebar with navigation options: 'Info' (selected), 'Network Configuration', 'System Configuration', and 'Music Server'. The main content area is divided into three sections: 'Hardware Information', 'Network Information', and 'Application Information'. Each section contains key-value pairs for various system parameters.

DEVICE INFO	
Hardware Information	
Firmware Version	V02.06 (Oct 17 2018)
Hardware Revision	01.00
Serial Number	228816080001
Device Name	IPX Device
Network Information	
MAC Address	72:6A:76:10:04:16
IPv4 Address	192.168.0.101
Subnet Mask	255.255.255.0
Gateway Address	192.168.0.1
Application Information	
Data Port	3000
Multicast IP	224.1.1.11,
Audio	
Default Groups	

The screenshot displays the 'NETWORK CONFIGURATION' page. It is divided into two main sections: 'Network Settings' and 'Application Settings'. Each section contains input fields for various parameters, some with dropdown menus. At the bottom, there are two buttons: 'Save changes' and 'Restore Defaults'.

NETWORK CONFIGURATION	
Network Settings	
IP Address	192.168.0.101
Subnet Mask	255.255.255.0
Gateway Address	192.168.0.1
Application Settings	
Data Port	3000
Multicast IP Address	224.1.1.11,
Audio Port	3100
Buttons: Save changes, Restore Defaults	

Network Configuration

Unless required, you are recommended to change the IP address only, leaving other setting such as port number as default. Once the address has been changed to suit the environment, click the “Save Changes” button.

Device Setup Via Browser

System Configuration

Application Settings:

Volume / Bass / Treble: Volume / Bass / Treble level can be adjusted here. Any changes made will affect all clients audio level.

Group: Group refer to default clients that are active each time iPX5200 is powered up. Example, if Group 1 & 2 are checked, whenever iPX5200 is powered up, clients that belong to Group 1 & 2 will receive streaming audio from iPX5200.

Default Source: iPX5200 can either play audio files from SD card or audio that applied to its RCA ports. The Default Source select default audio source that iPX5200 will play each time it is powered up.

Device Name: A meaningful device name like "GnD Flr Music Server" can be entered here. The name will be reflected in iPX5200 Info page.

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

Firmware Update: Firmware are stored in the unit's memory. Should there be any updates available, use this section to perform system upgrades accordingly. Refer page 9 for the details.

The screenshot shows the 'SYSTEM CONFIGURATION' web interface. It is divided into three main sections: 'Application Settings', 'Authentication', and 'Firmware Update'.
1. **Application Settings:** Includes controls for Volume (set to Mute), Bass (0dB), and Treble (-10.5dB). There are buttons for 'Linear Bass Enhancement (20Hz - 150Hz)' and 'Linear Treble Enhancement (1kHz - 15kHz)'. A 'Group' section has checkboxes for Groups 1 through 8. 'Default Source' is set to 'SD Card'. 'Device Name' is 'iPX Device'. 'Web Page Theme' is 'Dark'. 'Save changes' and 'Cancel' buttons are at the bottom.
2. **Authentication:** Fields for 'New User Name' (admin), 'Old Password', 'New Password', and 'Confirm Password'. 'Save changes' and 'Cancel' buttons are at the bottom.
3. **Firmware Update:** A 'File' field with a 'Browse...' button and the text 'No file selected.'. An 'Update' button is at the bottom.

The screenshot shows the 'Music Server - Control Panel' web interface. It features a 'Destination Group' selector (1-8), an 'Audio Source' selector (uSD Card, Line Input), and a 'Now Streaming' section showing '04 - David Bowie - Moonage Daydream.mp3' with playback controls. Below is a 'Connected Clients' table with one client listed. At the bottom is an 'SD Card Files' table listing two files.

No.	Client Name	Client Status	Client IP Address
1	MUSIC CLIENT 01	Connecting	192.168.1.130

No.	File Name	Duration
1	Memories - Maroon 5.mp3	00:03:35
2	Someone you loved_Lewis_Capaldi.mp3	00:03:55

Music Server

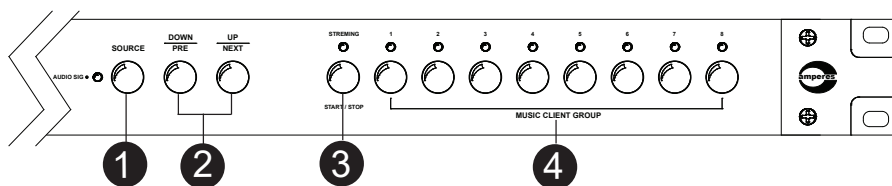
Destination Group: Indicate client groups that are active.

Audio Source: If selected audio source is uSD Card, this field will indicate audio file name that is currently playing. User can select to play previous / next track via provided buttons. If selected audio source is Line Input, this field show line input that is currently active.

Connected Clients: iPX5300 Music Clients and iPX5155 paging and BGM clients that are connected to the server are listed here.

SD Card Files: Audio files that store in SD card can be viewed here.

Setup : Front Button Setting



The buttons for streaming target (8 nos) is similar to zone selector. An administrator shall have the control over which client to receive the music streaming. Each button can be assigned a single client (iPX5300) or a group of clients.

To set the matching Client Button (Destination) with related iPX5300 Music Client, it is required to access the webpage of the Client. Follow the steps below :

1. Open a browser and enter the iPX5300 IP address.
2. Under SYSTEM CONFIGURATION > Application Settings, look for “ Music Server IP ” field. Enter the iPX5200 IP address here.
3. Under “ Group ”, assign group number to this iPX5300. Example, if Group 1 & 2 are checked, that mean this iPX5300 will receive streaming audio from iPX5200 whenever iPX5200 activate its Group 1 or 2.
4. We can assign a Device Name to this iPX5300 for easy identification, example “ Building A Client ”.
5. The volume / bass / treble level of iPX5300 can also be adjusted here. If we check the box “ Sync with Server ”, then each time iPX5300 is powered up, it will follow the volume / bass / treble level that are configured on iPX5200.
6. Save any changes made.

SYSTEM CONFIGURATION

Application Settings

Connection Mode

Auto

Music Server IP

192.168.0.200

Sync with Server

☐

Volume

80%

Bass

0dB

Linear Bass Enhancement (20Hz - 150Hz)

Treble

Off

Linear Treble Enhancement (1khz - 15khz)

Apply

Revert

Group

☒ Group 1
 ☒ Group 2
 ☒ Group 3
 ☒ Group 4
 ☐ Group 5
 ☐ Group 6
 ☐ Group 7
 ☐ Group 8

Device Name

Building A Client

Web Page Theme

Dark

Save changes

Cancel

Operating iPX5200

On Powering Up, the iPX5200 will automatically switch to audio source that defined in SYSTEM CONFIGURATION page. To change the audio source:

We can press the SOURCE button to switch between SD Card and Line Inputs. If SD Card is our choice, press PRE / NEXT button to play desired audio file.

If Line Inputs is our choice, press PRE / NEXT button to select INPUT 1,2,3 or 4.

To stream music to client:

1. Activate the client groups by pressing the desired group buttons.
2. Press the STREAMING button to start streaming audio to the clients.

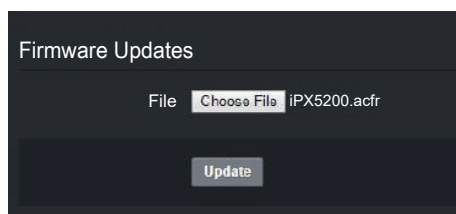
At the destination end, mixer / audio processing equipment / zone selector must be activated to broadcast the audio.

Firmware Update

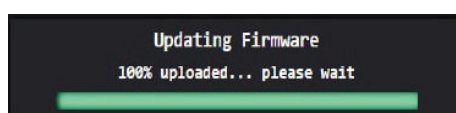
System firmware shall be updated once in a while when new features or bug fixes are available. There are 2 methods of doing;

Update firmware in Normal Operation Mode:

1. Open a browser and type in the iPX5200 IP Address.
2. Under “System Configuration” page look for “Firmware Update” section as shown in below.



Click “ Choose File” and choose a binary file with “.acfr” extension. Click “Update”.



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

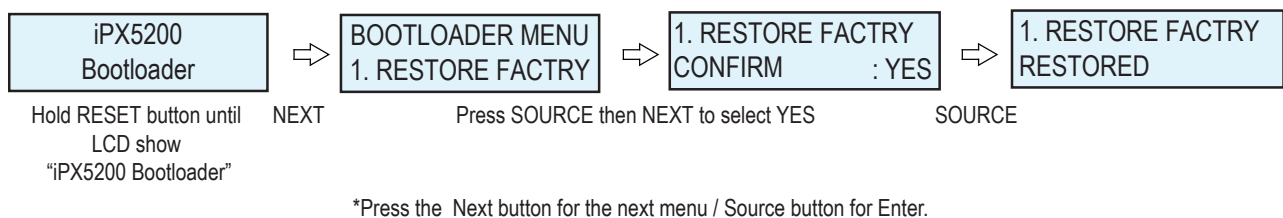
Firmware Update

Update firmware in Bootloader Mode:

If the iPX5200 “hanged”, it is required to perform RESTORE FACTORY settings by :

1. Press & hold the reset button until “ iPX5200 Bootloader ” is showing on LCD. This indicates iPX5200 is now operate in Bootloader mode.
2. Press SOURCE button, LCD will shows “ 1. RESTORE FACTRY ” > Press SOURCE button again to enter RESTORE FACTRY menu > Press NEXT to select “ YES ” > Press SOURCE button again to confirm restoring to factory default settings.
3. Once the restoring process is completed, the unit will reboot and enter normal operation mode. The IP address is now reset to 192.168.0.100.
4. Follow “ Update firmware in Normal operation mode ” steps to update the firmware.

Note: RESTORE FACTORY settings will not affect audio files stored in SD card.



BOOTLOADER MENU FUNCTIONS:

- 1. RESTORE FACTORY:** Reset IP address to 192.168.0.100. All settings in NETWORK CONFIGURATION and SYSTEM CONFIGURATION pages will be reset to default settings.
- 2. IP ADDRESS:** Show iPX5200 IP Address
- 3. BTLDR VERSION:** Show Bootloader firmware version
- 4. APP VERSION:** Show application firmware version
- 5. EXIT:** Exit Bootloader mode

Technical Specifications

Power Requirement : Voltage Current	18 ~ 30V DC (Normal DC 24V) <100 mA
Connectivity - LAN Interface - Common Protocols - Priority Protocols	RJ-45, 100Mb/s TCP/IP, UDP, IGMP, HTTP UDMP, ADP
Audio - Analogue Input (peak-to-peak) - Input Load resistance - Input Load Capacitance - Total Harmonic Distortion (THD) - S/N Ratio (full scale signal) - Digital Format	1.25Vrms 30 Ohm 100 pF 0.1% 83 dB IMAADPCM / MP3 (CBR / 320 kbps max) / WAV
Client Connection	255 Max
User Interface	(Web Browser) IE V8+, Firefox V22+, Google Chrome V25+ RS485
Firmware Upgrade	Via Web Browser
Operating Condition : Temperature Humidity	-20°C ~ 80°C 0 - 70%
Case : Dimension Weight	482 x 44 x 130 mm 1.9 kg

Warranty Conditions

Only Amperes Electronics Service Centres are allowed to make warranty repairs : a list of Amperes Electronics Service Centres may be asked for by the purchaser or send directly to Amperes Electronics Sdn Bhd at 70 Jalan Industri PBP 3, Tmn Perindustrian Pusat Bandar Puchong, 47100, Puchong, Selangor, Malaysia or its authorized dealers. 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 risks 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, neglect, accident of the product as well as using the product with power supply voltage other than shown on the product, or any other power supply source / adaptor 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 be caused to people and things when using the product.

This warranty certificate is valid only for the described product, and is not valid if modifications are made on this certificate or on the identification label applied on the product.

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.

Disclaimer

Information contained in this manual is subject 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 on this product be carried out by AMPERES ELECTRONICS SDN BHD or its authorized service agents.

AMPERES series must only be used for the purpose they were intended by the manufacturer and in conjunction with this operating 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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