



# INSTRUCTION MANUAL

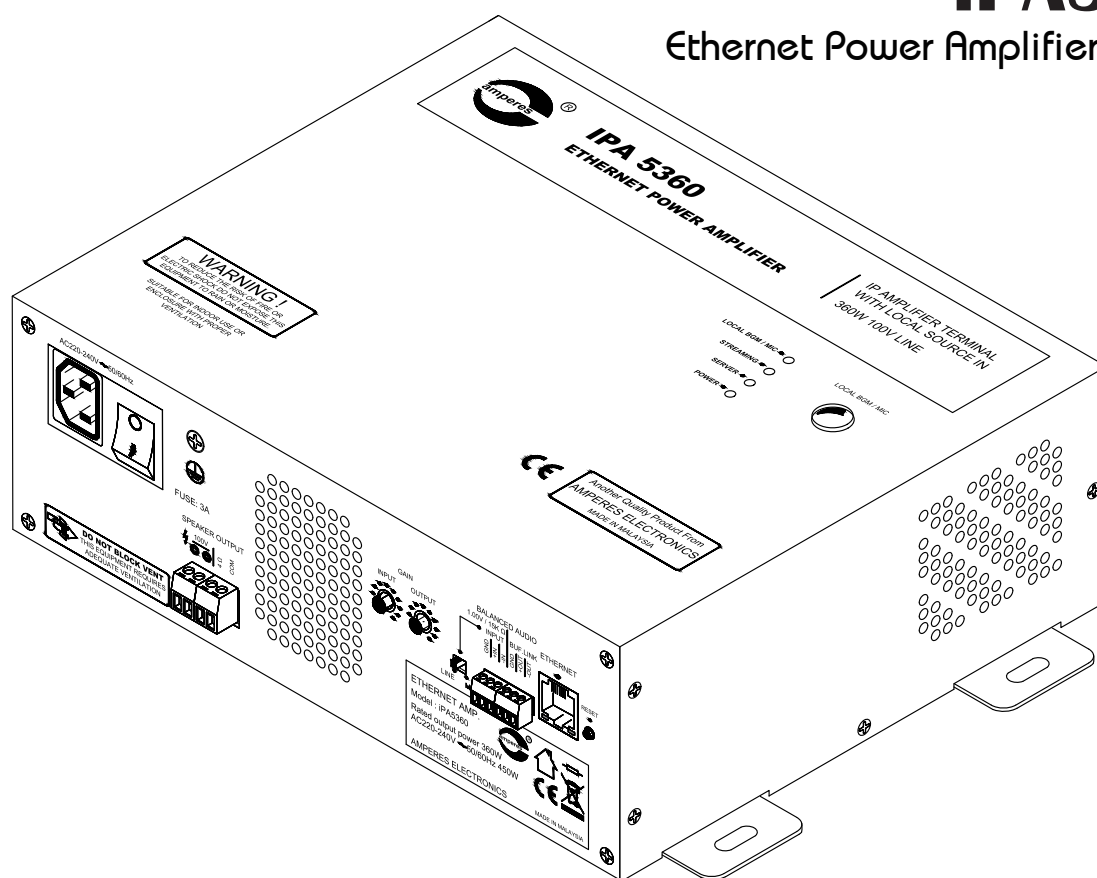
## iPA5060

## iPA5120

## iPA5240

## iPA5360

Ethernet Power Amplifier Terminal



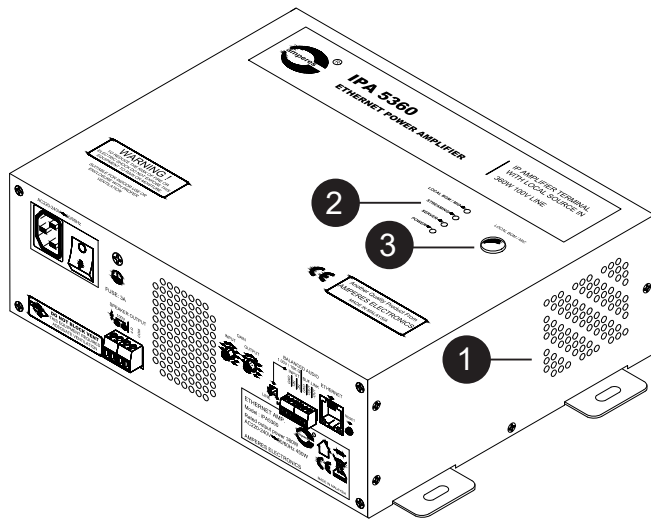
*Thank you for choosing another quality product from Amperes Electronics.*

iPA5000 Series of ethernet power amplifier is now improved with added features and circuit design, offering a more value added product with greater performance. The series now include 360W version to cater for larger installation. Both are suitable for decentralised IP PA system in locations such as park kiosks, ticketing booths, classrooms, floor risers, pole mounted speakers for power plants, ports etc.

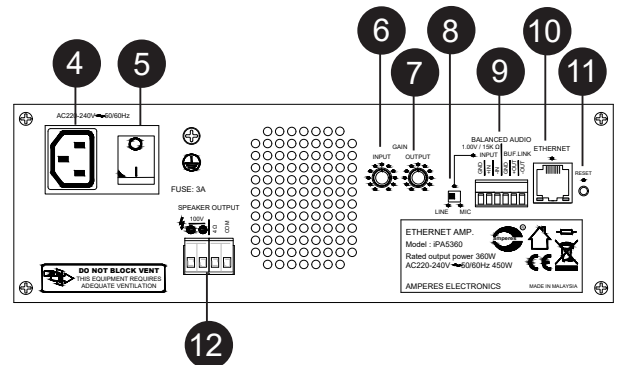
It has local audio source input, which can be either Mic or Line level, to enable local paging such as in classroom or park entrance. The local source shall be override by central paging and the highest priority shall be accorded to Emergency Paging or EVAC messages, to comply with EN54 or BS5839 requirement. Configuring the amplifier terminal is simple with user friendly browser interface, thanks to our detailed study and feedback from installers.

# Parts Identification

Front View



Rear View



## 1. SIDE VENT

External cool air enters the unit from these vent holes. Please ensure that there is sufficient clearance for ventilation.

## 2. INDICATOR LEDS

LOCAL BGM / MIC - This LED shall lit when audio input source is switched to local input.

SERVER - This green LED shall lit when iPA is successfully establish a connection with Paging Server (iPX5101).

STREAMING - Blink whenever iPA is receiving streaming audio from a paging client or music server.

POWER - This blue LED shall lit when iPA is powered On.

## 3. LOCAL BGM / MIC BUTTON

To switch between local input and remote streaming from music server (iPX5200) or paging client.

## 4. MAINS AC INLET

Operating voltage is 220 to 240V ac; 50 / 60 Hz.

## 5. POWER BUTTON

Mains ac power switch.

## 6. INPUT VOLUME CONTROL

This knob adjusts local input source volume as well as BUF. LINK volume.

## 7. OUTPUT VOLUME CONTROL

Speaker output volume control. Use this knob to adjust the volume if local audio is used as input source. For remote streaming audio, the volume is adjusted via System Configuration settings.

## 8. LINE / MIC LEVEL SELECTION

Local input source can be line or mic level. Use this switch to set the level accordingly.

## 9. AUDIO INPUT / LINK TERMINAL

Connect local input source to this INPUT terminal. The BUF. LINK allows audio signal been diverted to external power amplifier for extra power amplification. When local input is selected, the BUF. LINK shall play the local input source audio; when local input is turned off, the BUF. LINK shall play the remote streaming audio.

## 10. ETHERNET PORT

Ethernet Port for connecting to network switch.

## 11. RESET BUTTON

Button to allow iPA enters Bootloader mode or reset settings to factory default settings.

Bootloader mode: To enter this mode, hold the reset button until LOCAL BGM/MIC and STREAMING LEDs lit. Enter this mode to do firmware updating if normal mode updating does not work (refer to Firmware Update section)

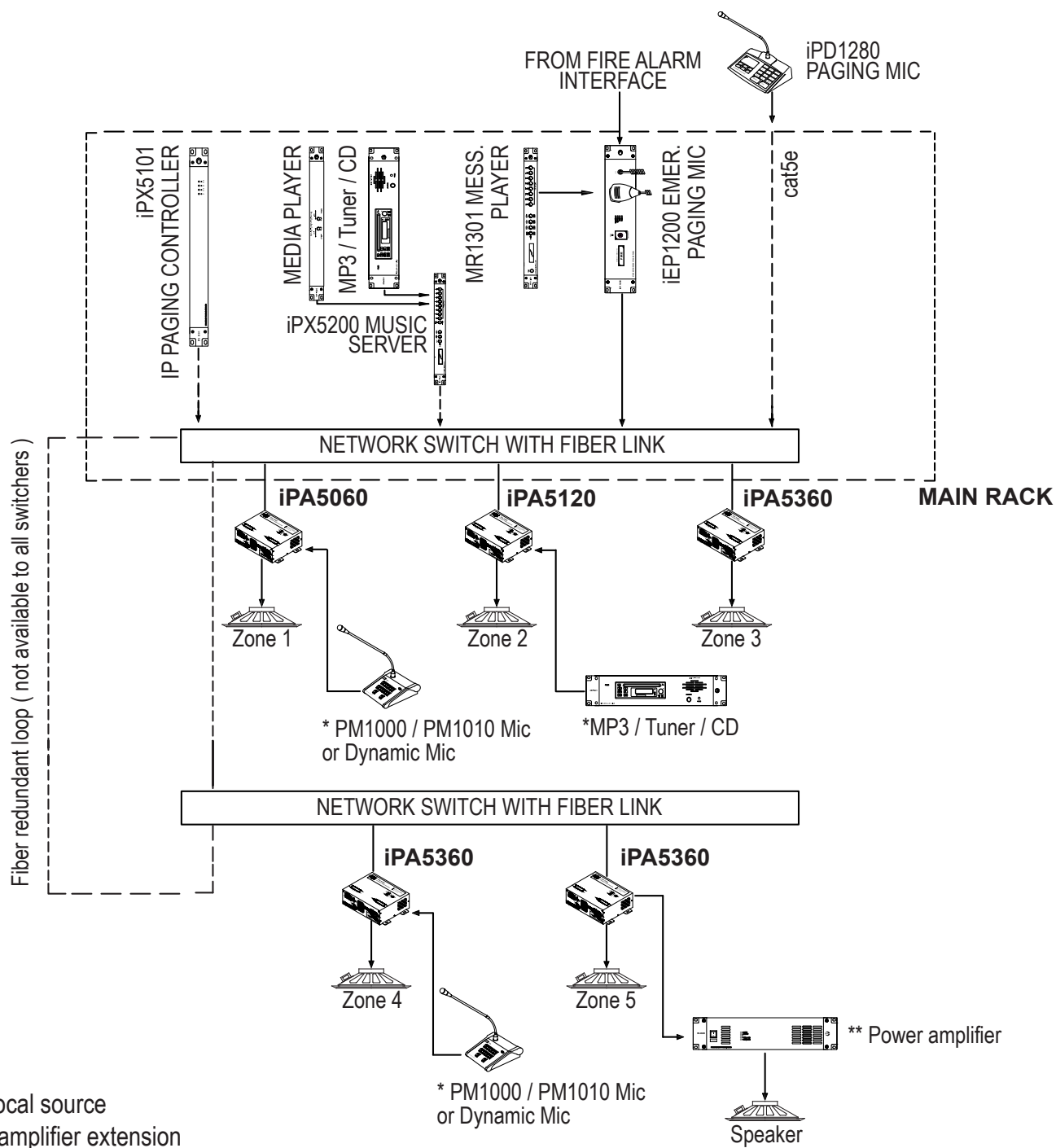
Reset to factory default settings: Hold the reset button until LOCAL BGM/MIC, STREAMING and SERVER LEDs lit will reset all iPA settings to factory default settings. This includes reset the IP address to 192.168.0.100 and reset the username and password to "admin".

Reset : Press and release the button will reboot the iPA .

## 12. SPEAKER OUTPUT

Outputs from the units are available in 100V line and also for 4 Ohm speakers. At any one time, connect only one terminal.

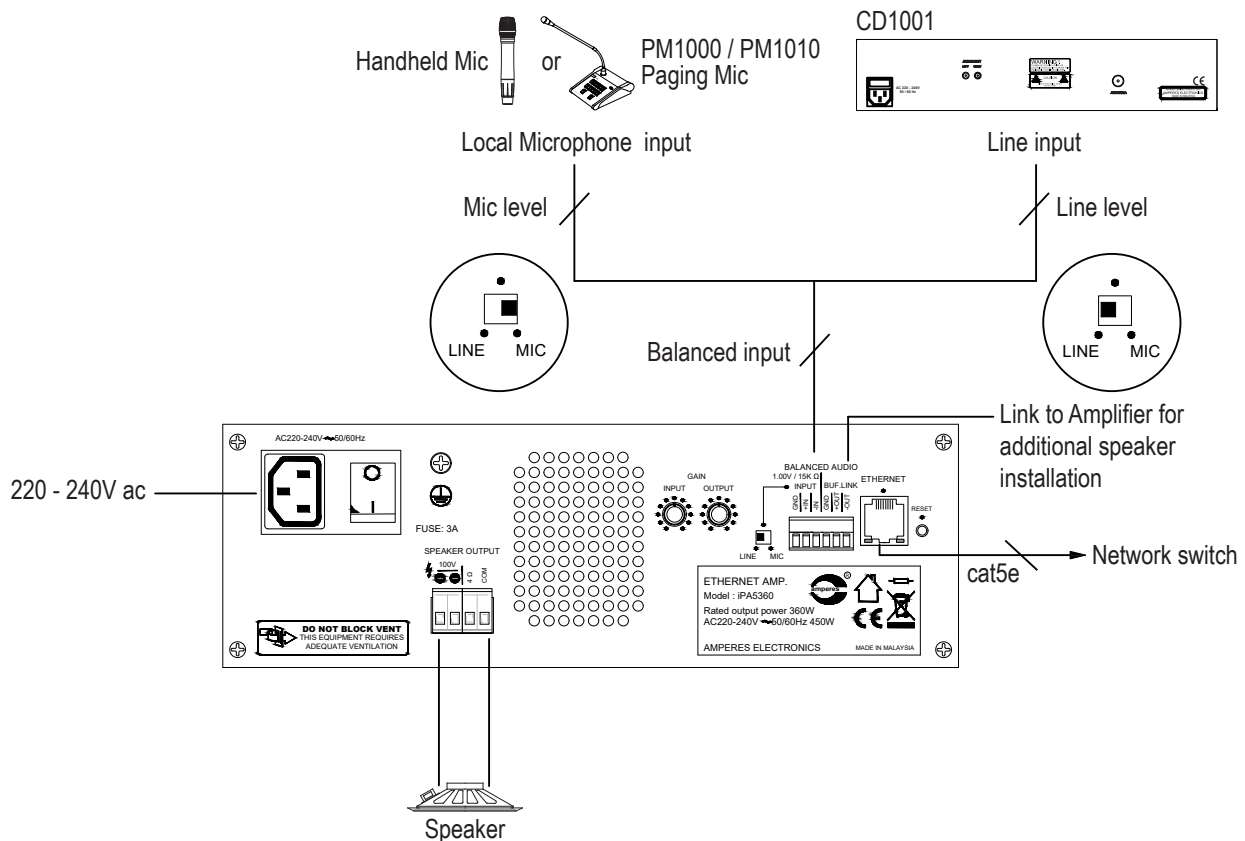
# Schematic Diagram



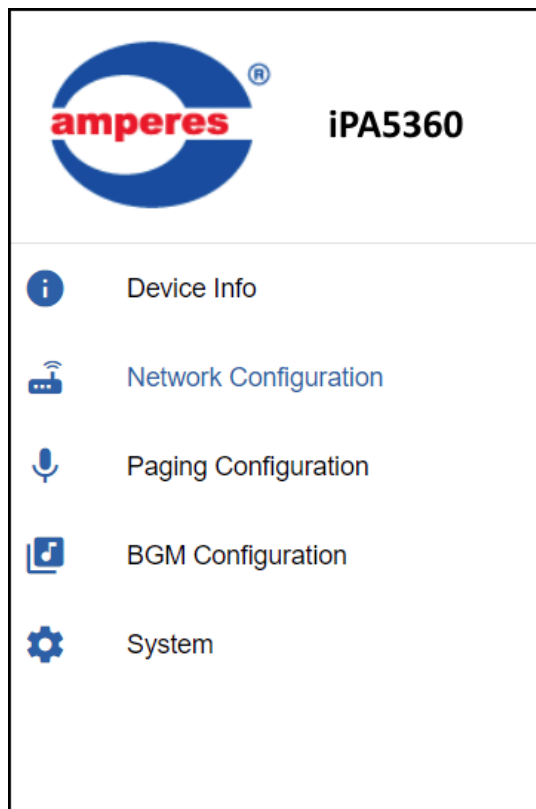
\* Optional local source

\*\* Optional amplifier extension

## Connecting The Unit



## Device Setup Via Browser



We can configure iPA device setup using a web browser (Chrome/ MS Edge). Open a browser and enter iPA IP address. We shall be able to access the configuration menus. The default IP address is 192.168.0.100. Default username and password are both "admin".

# Device Setup

## Device Info

Information such as firmware version, networking addresses and connection status to servers are shown here. No configuration is needed in this page.

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Device Info

i

Device Information

Firmware Version

1.21

Serial Number

Build Date

19 Oct 2020

Device Name

Blk A iPA

📶

Network Information

MAC Address

114:106:118:22:30:59

IP Address

192.168.0.120

Subnet Mask

255.255.255.0

Gateway Address

192.168.0.1

Data Port

3000

☰

Paging Server Status

Server Name

BlkA Paging Server

Server IP

192.168.0.101

Server Version

2.31

🎵

Music Server Status

Server Name

Blk A Music Server

Server IP

192.168.0.200

Server Version

2.07

## Network Configuration

Edit iPA IP address , subnet address and gateway address here to suit your networking environment. It is recommended to leave the data port number unchanged. Click the 'SAVE' button to save your changes.

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Network Configuration

↔

IPv4 Configuration

IP Address

192.168.0.100

Subnet Address

255.255.255.0

Gateway Address

192.168.0.1

Data Port

3000

SAVE

≡

Paging Configuration

Paging

Paging Enabled

✓

Auto Connect

×

Paging Server IP Address

192.168.0.101

Start Zone

1

End Zone

248

Restricted Zones

2,5

SAVE

## Paging Configuration

**Paging Enabled:** Enable this setting if an iPA is used as a paging client to broadcast IP based paging mic (e.g. iPD1280 or PD series paging mic + iPX5151 paging set) announcement. If the iPA is merely used as a music client, we can disable this setting.

**Auto Connect :** We can either turn On the Auto Connect to allow iPA 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 iPA to auto capture the server IP address and show it up in the device information page.

**Start/ End Zone:** This is iPA serving zone range. Whenever paging zones that fall within this zone range but excluded in the Restricted Zones (see below) were called, the iPA shall output the paging audio

**Restricted Zones:** Zone(s) that not served by iPA

Audio Configuration

Volume

80%

5 Band Equalizer

2<sub>dB</sub>

-2<sub>dB</sub>

-1<sub>dB</sub>

3<sub>dB</sub>

10<sub>dB</sub>

100<sub>Hz</sub>

250<sub>Hz</sub>

1<sub>kHz</sub>

4<sub>kHz</sub>

10<sub>kHz</sub>

SAVE

## Audio Configuration


**Audio Configuration:** To adjust volume and EQ of paging audio.

iPA5060 / iPA5120 / iPA5240 / iPA5360 | ETHERNET POWER AMPLIFIER

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# Device Setup

≡ BGM Configuration

 **BGM Server - IPX5200 / PMX**

BGM Enabled

☒

Auto Connect

☐

Music Server IP Address

192.168.0.120

SAVE

**Audio Configuration**

Volume

80%



5 Band Equalizer

2<sub>dB</sub>

-2<sub>dB</sub>

-1<sub>dB</sub>

3<sub>dB</sub>

10<sub>dB</sub>

100<sub>Hz</sub>

250<sub>Hz</sub>

1<sub>kHz</sub>

4<sub>kHz</sub>

10<sub>kHz</sub>

SAVE

≡ System

**Unit Configuration**

Device Name

Blk A iPA

SAVE

**Authentication**

Enter new username

Enter new password

SAVE

## BGM Configuration

**BGM Enabled:** Enable this setting if an iPA acts as a music client. If an iPA 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 iPA 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 iPA to auto capture the server IP address and show it up in the device information page.

## Audio Configuration

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

## Unit Configuration

**Device Name :** Give the unit a meaningful device name. E.g. Blk A iPA . The name will be shown up in Device Info Page as well as Paging Server/ Music Server client status page.

## Authentication

User can alter login username and password here to avoid unnecessary access to the system

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# Firmware Update

System firmware shall be updated once in a while when new features are available or to fix bugs. There are 2 methods of doing.

## Update firmware in Normal Operation Mode

1. Open a browser and type in the iPA IP address.
2. Under "System" page look for "Update Firmware" section as shown on the right.
3. Click "SELECT FIRMWARE" and choose a binary file with ".acfr" extension.
4. Click "UPLOAD".
5. Once the update is completed, the browser shall enter the login page.

**Update Firmware**

SELECT FIRMWARE

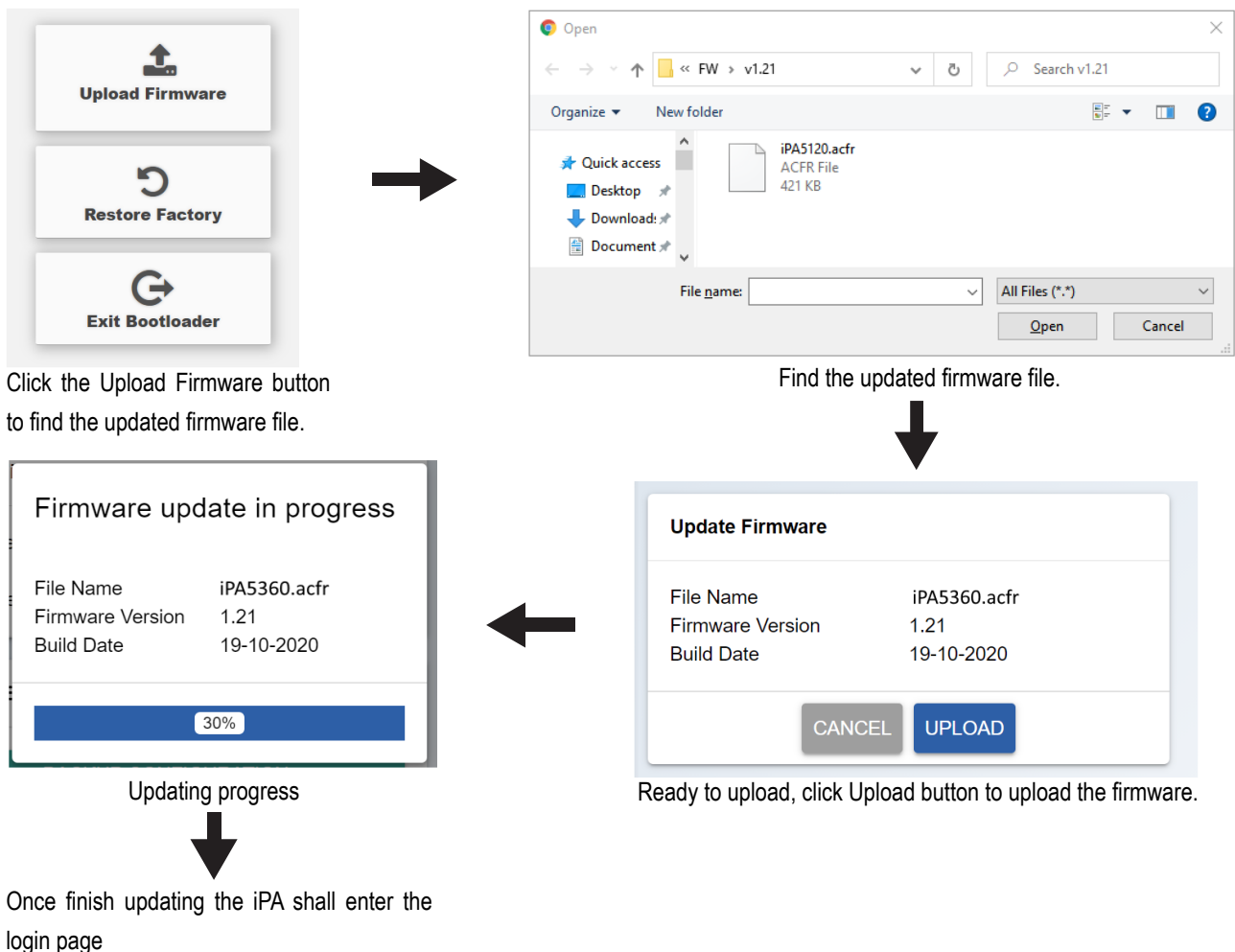
**Update Firmware**

File Name	iPA5360.acfr
Firmware Version	1.21
Build Date	19-10-2020

CANCEL UPLOAD

## Update firmware in Bootloader Mode

1. Hold the rear RESET button until LOCAL BGM/MIC and STREAMING LEDs lit then release the RESET button. iPA is now enter Bootloader mode.
2. Open a browser and enter the iPA IP address, 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 automatically exit the Bootloader mode and enter the login page.



# Paging and Music Operation

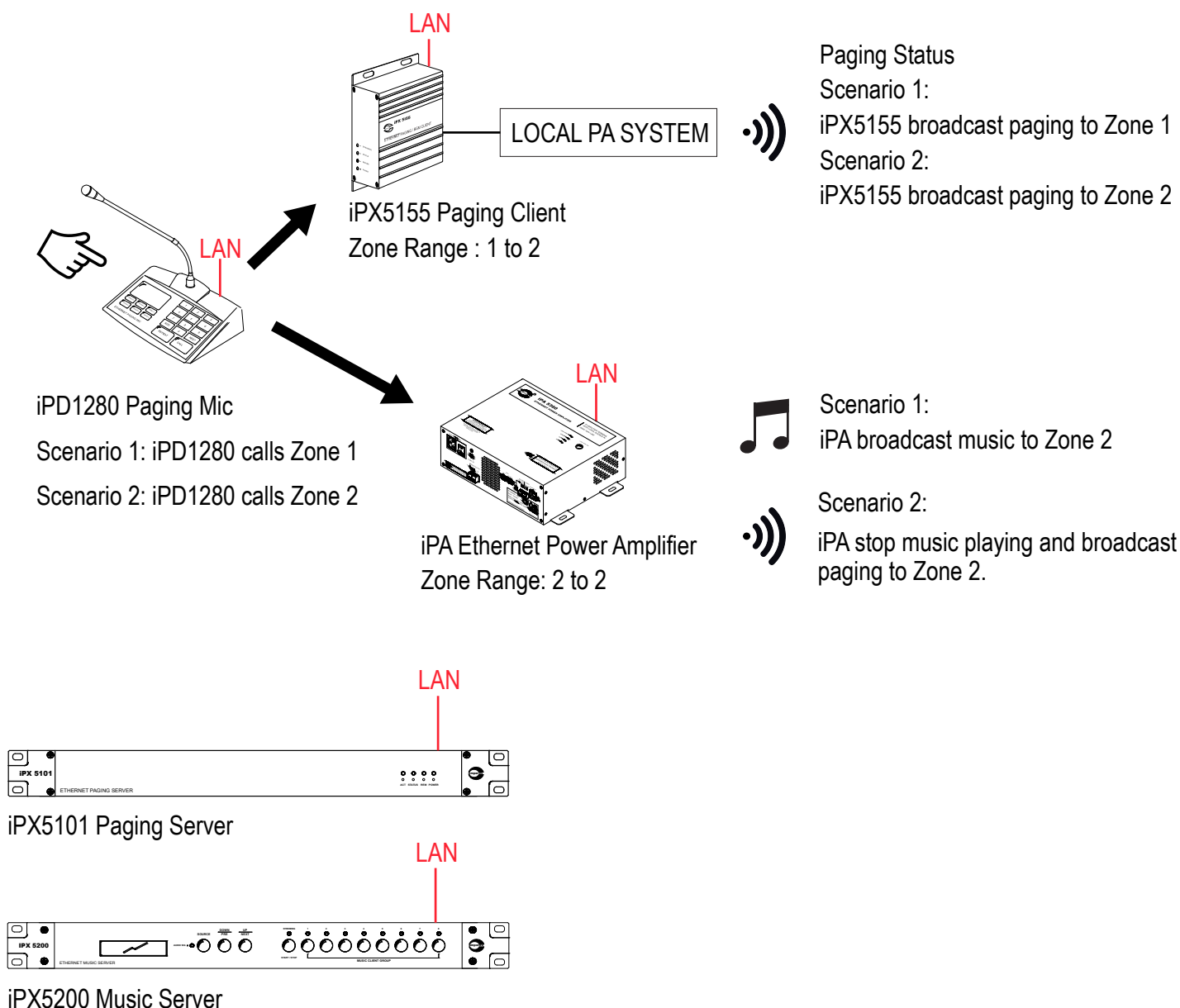


Figure above illustrates a typical way of using iPA in audio broadcasting. The iPX5155 paging client is serving Zone 1 and Zone 2; iPA serves Zone 2 only. When no paging is activated or iPD1280 calls to Zone 1, iPA shall continue to play music streaming from the music server. This is because Zone 1 is not an iPA serving zone. When iPD1280 calls Zone 2, iPA shall stop playing music and switch to broadcast the paging. Music shall resume playing when the paging mic ends the call.

# Technical Specifications

	iPA5060	iPA5120	iPA5240	iPA5360
Rating (W rms, 100V output)	60W	120W	240W	360W
Operating Voltage	220 - 240V ac; 50 / 60 Hz			
Power consumption (load / standby) @ 240Vac	115W / 18W	160W / 18W	285W / 18W	450W / 18W
Current (load / Standby) @ 240Vac	0.8A / 0.25A	1.1A / 0.25A	2.0A / 0.25A	2.9A / 0.25A
Power factor (Load) @ 240Vac	0.58	0.61	0.61	0.65

## Audio:

Analogue input sensitivity	Balanced Line 1Vrms / Mic 50mVrms
Analog input impedance	Line 10 kohm / Mic 6 kohm
THD + N (at rated power)	<0.02%
S / N ratio	>68 dB
Frequency response	120~20 kHz (+/-3dB)
Link output	Mute to +3dB (Input@1Vrms, 1kHz)
4 ohm speaker output (Vrms)	50% of 100V line speaker output
Media file format	WAV, MP3
Recording format	MP3
Networking/ Paging protocol	TCP/IP, UDP, HTTP, ADMP

## Controls :

Tone / Volume control	5-Band equalizer / Local input / Streaming input / Speaker output
Local / Remote streaming selection	Push button
Line / Mic level selection	Slide switch
User Interface	Web interface via Google Chrome / Ms Edge
Protection	Thermal (70°C Cutoff), Speaker output over current & Short circuit, AC Fuse
Indicator	Power, Link status to paging server, Streaming, Local input source
Cooling system	45°C Thermostat automatic fan control

## Case :

Dimension (WxHxD)	250 x 83 x 200 mm
Weight	3.1 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 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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