iPX Ethernet Paging System

In the coming future, our lives would evolve around IT, and so will the field of EVAC or BGM broadcasting in buildings. Amperes is pursuing this evolution by expanding its product range in the interests of providing total solutions with stability, quality and reliability. Amperes IP System shall enable flexibility for system configuration, expansion, monitoring and much more to your imagination.

What Amperes iPX Ethernet Paging Systems can offer .....

ULTRA LOW LATENCY AUDIO TRANSMISSION

Amperes IP System has been improved with Ultra Low Latency transmission for audio and data. Delays has been almost non noticeable

MULTI CHANNEL AUDIO BROADCAST

Only IP system allows simultaneous audio broadcast to different zones uninterrupted, which conventional single output PA are unable to perform.

DECENTRALISED SYSTEM

Decentralised system is preferred for large setup with lower maintenance and better cost efficiency. Copper cabling costs shall be greatly reduced, it will also reduce environmental hazards such as lightning strikes and other factors that may cause signal disturbances and degradations.

FLEXIBLE SYSTEM EXPANSIONS

IP System allows easier system expansion such as additional building or zones. Additional new systems may not necessarily run back to main control room but can be expanded from nearest network points.

SIMPLEX & DUPLEX MODE

Bidirectional audio and data streaming is made possible in IP environment, enabling cross paging within the network. This is important for large installations such as airports, mega complexes, universities, etc.

CHOICE OF SYSTEM LINKS

Communications between sub racks, main and remote IP devices can be chosen from existing LAN, dedicated fiber link or network cable.

REMOTE MONITOR AND CONTROLS

With control room located away from sub system, operators will be able to monitor condition of external equipments such as speaker line monitoring, amplifier etc. In some extend, user shall be able to control them such as volume, etc.

NO LIMITATIONS ON DISTANCE

Limitations due to distance is generally eliminated with networked system and noise being reduced as all audio are digitized. Furthermore, there would be no power loss due to cabling if fiber is utilised.

MOBILITY

Relocating, remote paging and monitoring are possible within network through any PC or smartphones

REMOTE SITE CONNECTIVITY

Centralised announcement or music broadcast to branches at different cities shall be made possible through VPN networks.

Amperes iPX Paging System is suitable & not limited to such installations :

- Shopping complexes
- Hospitals
- Airports
- Transportation Hubs
- Office Complexes
- Mixed Developments
- Military Camps
- Early Warning Systems
- Universities & Schools
- Sports Complexes

Product Selection Guidelines

Ethernet Network Controller iPX5101

iPX5101 is a network controller for iPX Ethernet PA system which regulates and monitors all traffics and communications for priority access of network clients, logging details, etc. In default, Amperes iPX System operates on Multicast mode with exceptional for iPX5400.

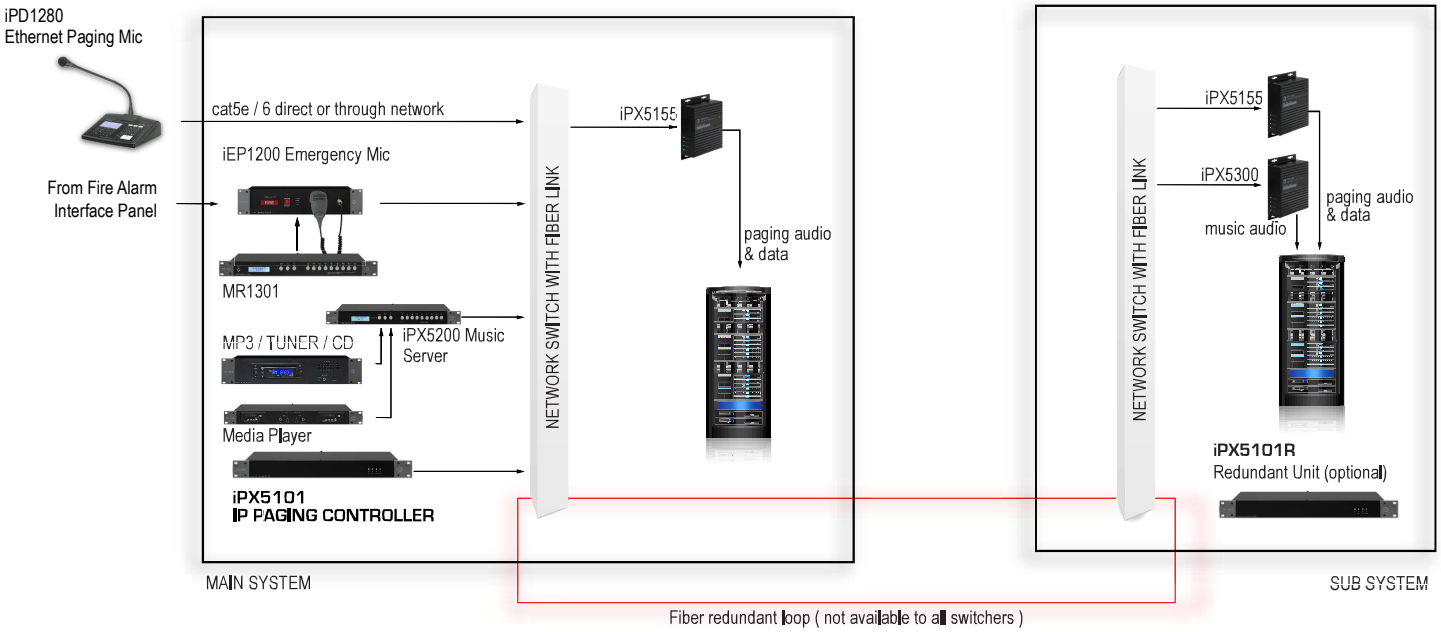
Only one iPX5101 shall be required for entire system and a redundant unit shall be made available in the event that the main unit failed. With a PC connected to the controller, user shall be able to monitor connectivity of all clients to ensure all sub system or links are always up.

Rear View:

Technical Specifications

Power requirement :	
Voltage	18 ~ 24V DC (Normal DC 24V)
Current	350 mA
Connectivity	
- LAN interface	RJ-45, 10 / 100 Base-T
- Common protocols	TCP/IP, UDP, IGMP, HTTP
- Priority protocols	UDMP, ADP
Client connection	254 Max
User interface	(Web Browser) IE V8+, Firefox V22+, Google Chrome V25+, RS485
Firmware upgrade	Via Web Browser
Operating condition :	
Temperature	-20°C ~ 80°C
Humidity	80%
Case :	
Dimension	482 x 44 x 180 mm
Weight	1.90 kg

Application Schematic



Packing information

Carton size : 555 (L) x 295 (W) x 95 (H) mm
Gross weight : 2.90 kg
1 unit per carton

iPX5200 Ethernet Music Server

iPX5200 is a BGM audio server, streaming audio files in LAN to clients such as Amperes iPX5300 and iPX5155. Also known as audio inserter, it will receive analogue audio inputs from media players such as CD or mixer sources and feed into IP network.

With its selectable input sources, either from analogue or SD card files, users will be able to stream to selected destination or group of iPX5300 / 5155 of their choice. Destination audio extractor can be grouped into 8, each of up to 32 clients.

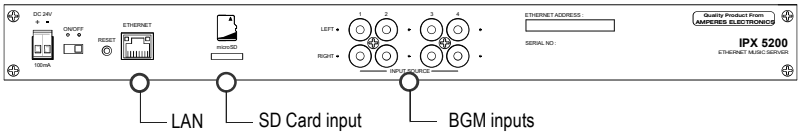
The unit's setup has been made easy with its user friendly UI. Status of each client can be directly monitored at real time.

iPX5200 is an ideal tool to broadcast your BGM within your network and it can work independently with or without iPX5101.

Features

- Selectable 4 analogue line inputs and 1 SD card files for audio streaming
- Connectivity of up to 254 iPX5300 music clients
- Client groupings into 8 groups for easier streaming destination
- Hi quality audio encoding and streaming
- Multi format audio file transmission
- Ease of programming or configuration with user friendly GUI

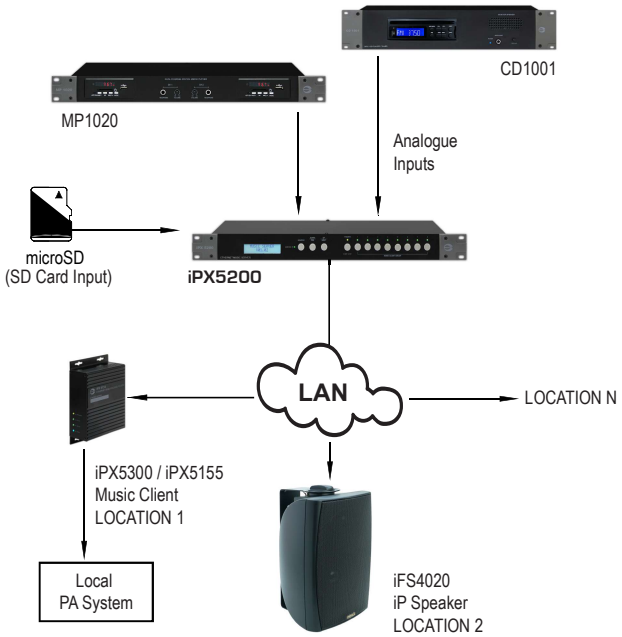
Rear View:



Technical Specifications

Power requirement :	
Voltage	18 ~ 30V DC (Normal DC 24V)
Current	100 mA
Connectivity	
- Interface	10/100 Base-T
- Common protocols	TCP/IP, UDP, IGMP, HTTP
- Priority Protocols	UDMP, ADP
Audio	
- Analogue input (max)	1.25Vrms unbalanced
- Input impedance	3 K Ohm
- Total harmonic distortion (THD)	0.1%
- S/N ratio (full scale signal)	83 dB
- Digital format	IMA ADPCM / MP3 (CBR / 320 kbps max) / WAV
Client connection	254 Max
User interface	(Web Browser) IE V8+, Firefox V22+, Google Chrome V25+,
Firmware upgrade	Via Web Browser
Operating condition :	
Temperature	-20°C ~ 80°C
Humidity	0 - 70%
Dimension	482 x 44 x 180 mm
Weight	1.90 kg

Application Schematic



Packing information

Carton size : 555 (L) x 295 (W) x 95 (H) mm
Gross weight : 2.90 kg
1 unit per carton

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Ethernet Emergency Paging Mic iEP1200

iEP1200 is an IP based Emergency Paging Panel which is an essential tool for firemen in order to have direct access to EVAC system with highest priority. All other paging in progress, such as music streaming and EVAC auto announcement shall be cut off upon activation of the unit.

It can be used as local system's highest priority paging device or as a global highest priority paging device.

It has analogue IO ports ie. message player input, emergency dry contact and aux line audio output. All network configurations shall be done via web browser.

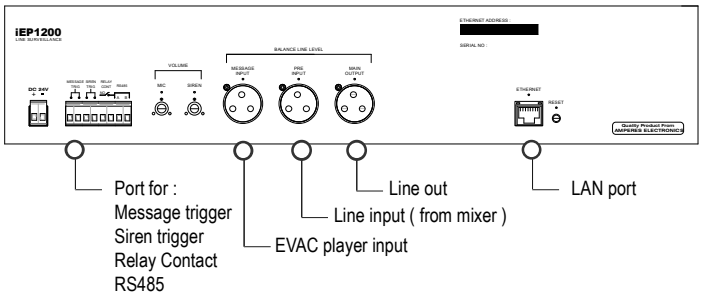
Features

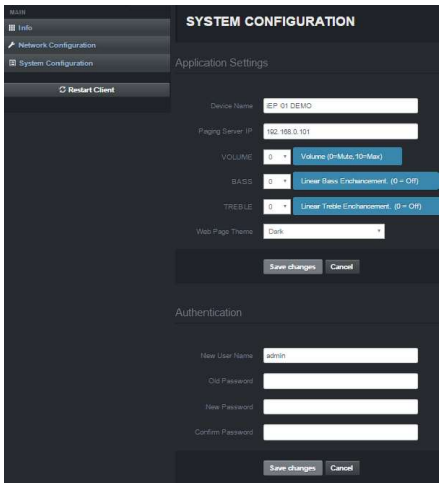
- Simple initial setting via web browser
- Local or Global high priority setting
- Built in siren tone generator with dual mode activation
- Visual FIRE indicator
- Dry contact for unit's activation
- Aux RS485 data comm port
- Volume controls for siren, mic and message sources

Technical Specifications

Power requirement :	
Voltage	24V DC
Current	<200 mA
Connectivity	
- Data / LAN interface	RJ-45, 10/100 Base-T
- Common protocols	TCP/IP, UDP, IGMP, HTTP
- Priority Protocols	UDMP, ADP
- User interface	Web browser IE V8+, Google Chrome
Audio	
- Microphone	Condenser omni directional mic
- Analogue line input (max)	1.25 Vrms unbalanced (+4 dBU)
- Input impedance	10 K Ohm
- Siren frequency	8 kHz continuous
- Priority sequence	Paging mic - siren - message - line input (pre amp)
- Total harmonic distortion (THD)	0.1%
- S/N ratio (full scale signal)	83 dB
Indicators	Fire LED, Front siren switch
Operating condition :	
Temperature	-20°C ~ 80°C
Humidity	0 - 70%
Dimension	482 x 88 x 180 mm
Weight	2.85 kg

Rear View:





Web interface for configurations

Packing information

Carton size : 555 (L) x 295 (W) x 165 (H) mm
Gross weight : 3.85 kg
1 unit per carton

iEP1202 Ethernet Desktop Emergency Paging Mic

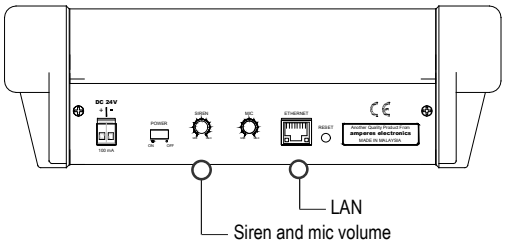
iEP1202 is a desktop version of Emergency Paging Mic which has several more added features as compared to iEP1200. There are 8 programmable zone groupings to facilitate targeted zone or specific building emergency paging. Also available are 4 presets of messages which can be assigned through web setting.

iEP1200 is suitable to be placed at guard house, reception or security control console. It has highest priority over other audio sources such as BGM, normal paging and auto EVAC messages.

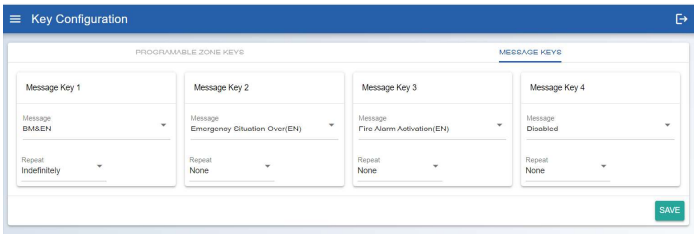
Features

- 8 programmable zone groupings for direct zones access
- 4 message banks of up to 14 minutes messages with total of 20 files
- Siren tone generator
- Volume controls for Mic and Siren
- User friendly setup via web browser

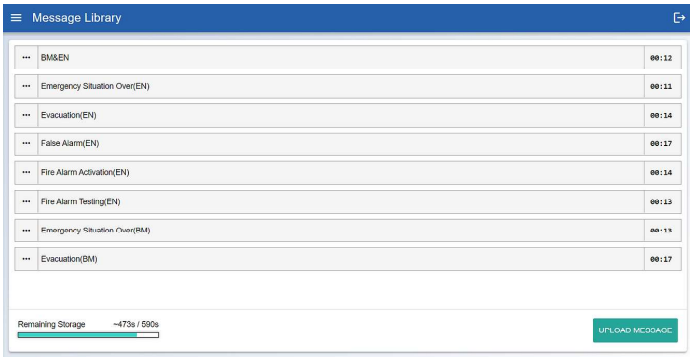
Rear View:



Flexible button assignments for zone grouping and message keys



Message library for brief messaging



Technical Specifications

Power requirement	24V DC
Current	0.1 A (2.4 W)
Microphone	Handheld condenser omni directional
Siren frequency	Continuous at 8 KHz
Connectivity:	
- Data	RJ45 ; 10 / 100 Base-T
- Protocols	TCP/IP, UDP, IGMP, Http
- Priority Protocols	ADMP, ADP
Transmission mode	Unicast & Multicast
Audio conversion format	IMA ADPCM 36KHz 16Bit
Zone groupings	8
Zones per group	128 (or 248 for All Call)
Message:	
Total duration	590 seconds
Max files	20
Message storage	4 (configuration via browser)
Format	MP3 64k Bit/s
User interface	IE Ver 9 and above, Firefox or Google Chrome (preferred)
Dimension (WxHxD)	248 x 65 x 190 (excl. mic)
Weight	900 g

Packing information

Carton size : 525 (L) x 270 (W) x 85 (H) mm
Gross weight : 1.90 kg
1 unit per carton

Ethernet Paging Microphone iPD1280

iPD1280 is an ethernet based paging microphone with soft touch keys, zone groupings and with a large LCD screen for ease of monitoring. It has all the features of conventional PD1280 such as zone groupings, priority settings, etc.

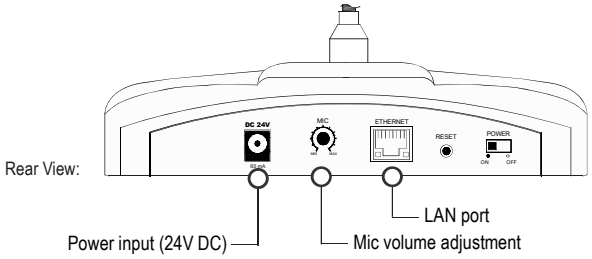
The unit setup has been made simple with an easy to use UI, done through web browser.

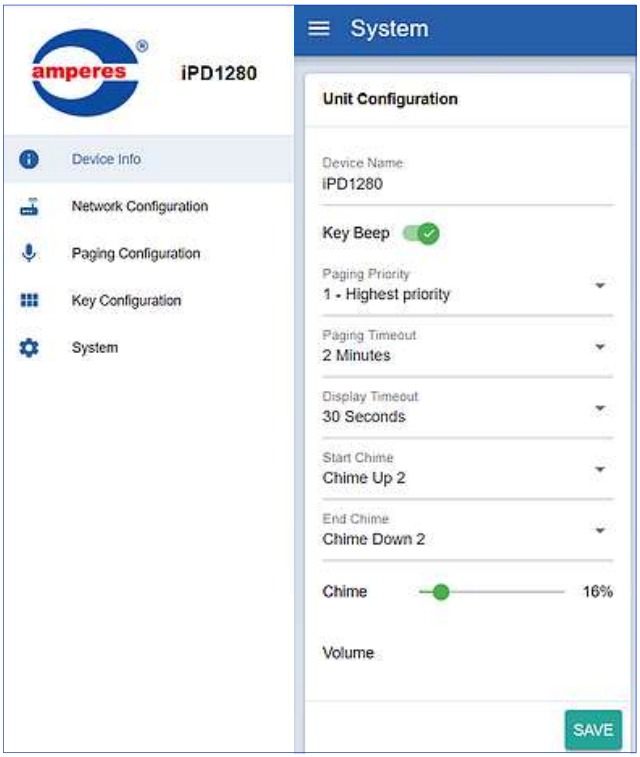
Features

- Sensor soft touch keypad
- Large LCD display for easy viewing with name setting for identification
- Large multi point paging setup with network
- Built in chime with selectable tone file
- Adjustable volume for mic and chime
- Ease of programming or configuration with user friendly GUI
- Ultra low latency audio transmission

Technical Specifications

Operating voltage	24V DC
Power consumption	2.0 W
24V power connector	1 x male barrel jack
Zone selection	Numerical keypad for Zones, Groups, Siren, All Call, Repeat, Chime + Talk
Zone controls	254
Switching selection	Sensor touch keypad
Microphone	Gooseneck condenser capsule; unidirectional
Chime	4 tone up and 4 tone down
LED Indicator	Zone, power, audio, data, gooseneck ring LED
Displays	LCD display; white back illumination
Frequency response	100 - 12 kHz @ 1 kHz +/- 3 dB
S / N ratio	>70 dB @ 1 kHz
Audio conversion format	IMA ADPCM 36 kHz 16 bit
Audio output controls	Mic from local and Chime from Web
Data Interface	RJ45, 10 / 100 Base-T
Protocols	TCP / IP, UDP, IGMP, HTTP
Priority protocols	ADMP, ADP
Transmission mode	Unicast & Multicast
User interface	(Web browser) IE Ver 9 and above, Firefox or Google Chrome (preferred)
Gooseneck mic length	370 mm
Dimension (W x H x D)	230 x 192 x 65 mm (Excluding Mic)
Weight	850 g





User friendly UI for ease of setup for setting unit address, zone limits, system access, groupings etc.

Packing information

Carton size : 555 (L) x 270 (W) x 85 (H) mm
Gross weight : 1.75 kg
1 unit per carton

iPX5155 Ethernet BGM / Paging Client
iPX5300 Ethernet Music Client
iPX5500 Ethernet Communication Client

iPX5000 Series of IP Network Clients consists of several models with each made for specific application in Amperes iP PA System. They are available in modules, which enable easy placement inside rack cabinet.

Overall, iPX5000 transmission has been improved with ultra low latency thus making announcement almost instantly with unnoticeable delays.

Packing information

Carton size : 155 (L) x 105 (W) x 125 (H) mm
Gross weight : 0.9 kg incl. adaptor
1 unit per carton

iPX5155

Ethernet BGM / Paging Client

iPX5155 is an audio extract which receives BGM and Paging broadcast. Muting feature would enable a paging announcement to bypass the BGM in session.

It can also be used as a transmitter.

iPX5300

Ethernet Music Client

iPX5300 is used to receive audio streaming from central rack either rom iPX5200 Ethernet Music Server or PMX II LAN. Quality sound can be expected as it plays MP3 audio at up to 320 kbps.

iPX5500

IP Communication Box

iPX5500 is the communication interface for equipment with RS485 outputs and remote PC, enabling remote monitoring and controls via Amperes PMX II LAN software.

Among equipment that can be used with iPX5000 are QP and QD amplifiers, LS4808 / 16, AX3800 etc.

Technical Specifications

	iPX5155	iPX5300	iPX5500
Power requirement			
Voltage	24V DC		
Current	60 mA (1.5W)		
Connectivity			
Interface	RS485 (19.2 kbps) , 10 / 100 Bast T		
Protocols	TCP / IP, UDP, IGMP, HTTP		
Broadcast mode	Unicast / Multicast		Multicast
Audio			
Analogue in / out (peak to peak)	1.25 V rms (+4 dBU)		Not Applicable
THD	< 0.1 %		
S/N ratio	83 dB		
Audio format	IMA ADPCM / MP3 320 kbps max/ WAV		
User interface	Web Browser (IE V8 above, Google Chrome, Firefox)		
Operating condition			
Temperature	-20 to 80 Deg C		
Humidity	0 - 70 %		
Dimensions	100 x 147 x 40 mm		
Weight	300 gms (excluding adaptor)		

iPX5455 4 Ch Ethernet BGM / Paging Client

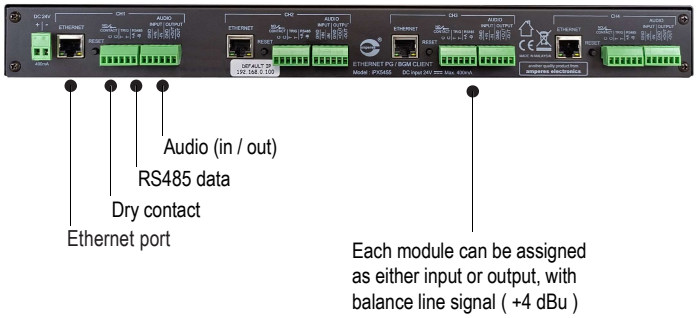
iPX5455 is a rack mounted 4 channel BGM / Paging client, also known as Ethernet audio extract. It works similarly as iPX5155, which extracts BGM and paging broadcast in iPX network. Multiple modules of iPX5155 in a 1 hu casing will reduce space usage in a rack, also making cabling works neat and easier to manage during maintenance work.

Each channel shall work independently with own network connection and audio / RS485 output. It can also be used as input source or sender, depending on your application and can be set through the web browser.

Features

- 4 channels of independent Ethernet audio extracts
- Redesigned with ultra low noise and low latency
- Save rack space for installation with multiple clients
- API available for 3rd party software integration
- Low bandwidth with high quality audio retrieval
- Ease of programming or configuration with user friendly GUI

Rear View



Technical Specifications

Power requirement	
Voltage	24V DC
Current	280 mA (6.8 W max)
Connectivity	
Interface	RS485 (19.2 kbps) , 10 / 100 Bast T
Protocols	TCP / IP, UDP, IGMP, HTTP
Broadcast mode	Unicast / Multicast
Audio	
Analogue in / out (peak to peak)	1.25 V rms (+4 dBU)
THD	< 0.1 %
S/N ratio	83 dB
Audio format	IMA ADPCM / MP3 320 kbps max/ WAV
User interface	Web Browser (IE V8 above, Google Chrome, Firefox)
Operating condition	
Temperature	-20 to 80 Deg C
Humidity	0 - 70 %
Dimensions	482 x 44 x 180 mm
Weight	2.40 kg

Packing information

Carton size : 555 (L) x 295 (W) x 95 (H) mm
Gross weight : 2.95 kg
1 unit per carton

iPX5400 works in pair, and is a convenient way of sending audio and RS485 data to another location through LAN , dedicated fiber or network cable. In the case of using dedicated fiber link, an ethernet to fiber converter shall be required.

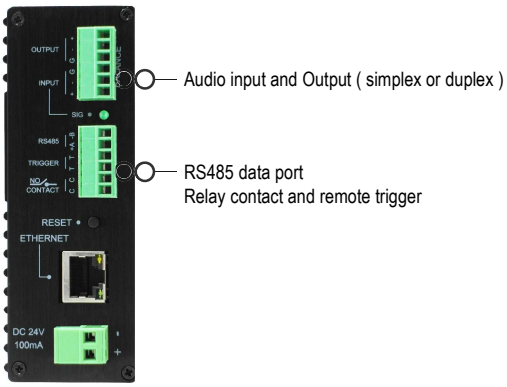
iPX5400 is a simple device which is able to work in simplex and duplex mode, which can be used in standalone pair without the need of iPX5101 server or full IP solutions.

Features

- Low latency audio and data transceiver
- RS485 and voice at full duplex; hi definition audio at simplex
- Works independently without other iP equipment or iPX5101 controller
- Setup via web browser and controllable via PMX Software
- Dry contact available for remote triggering
- Supports 3 modes with : 1.Always ON, 2.ON on remote trigger, 3.ON on paging activation

Technical Specifications

Power requirement :	
Voltage	12 - 24V DC (Normal DC 24V)
Current	<100 mA
Connectivity :	
- Data interface	RJ-45, 10/100 Base-T
- Protocols	TCP/IP, UDP, IGMP, HTTP
- Priority protocols	UDMP, ADP
Audio :	
- Analogue in/out (peak-to-peak)	1.25V (line)
- Total harmonic distortion (THD)	0.1%
- S/N ratio (full scale signal)	83 dB
- Conversion format	WAV PCM 48KHz 16 Bit (Bidirectional & Half Duplex)
- Data	UART RS485 (Bidirectional & Full Duplex)
User interface	IE Ver 9 and above, Firefox, Google Chrome (preferred)
Case :	
Dimension (WxHxD)	100 x 147 x 40 mm
Weight	320 g

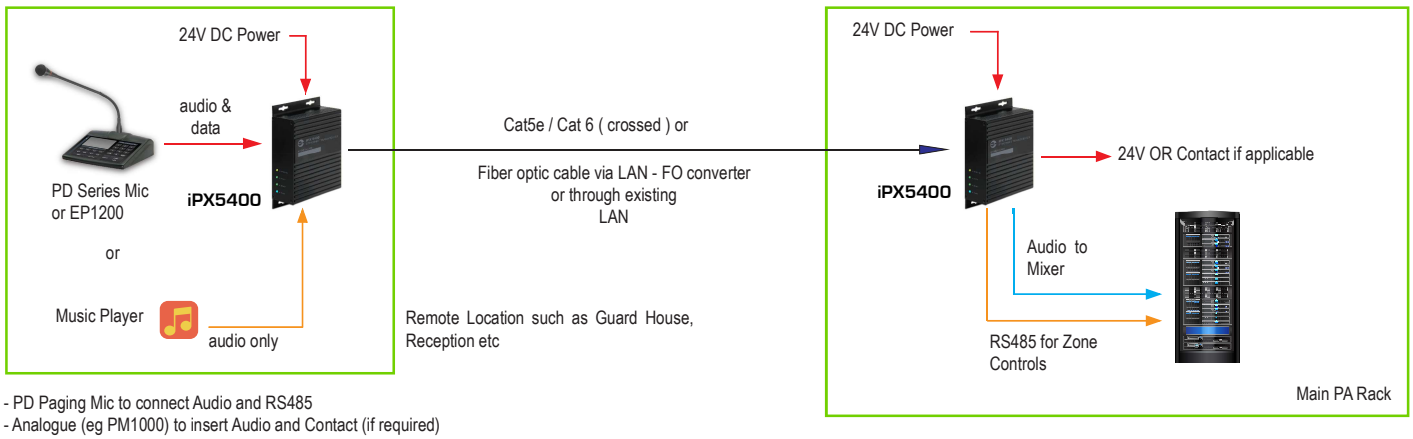


Packing information

Carton size : 155 (L) x 105 (W) x 125 (H) mm
Gross weight : 0.9 kg (including adaptor)
1 unit per carton

Application Schematic

Application Example : Peer to Peer Direct Connectivity



- PD Paging Mic to connect Audio and RS485
- Analogue (eg PM1000) to insert Audio and Contact (if required)
- Music player to insert audio signal only and set to continuous streaming

Ethernet Power Amplifier

iPA5060 60W 100V
iPA5120 120W 100V
iPA5240 240W 100V
iPA5360 360W 100V

improved

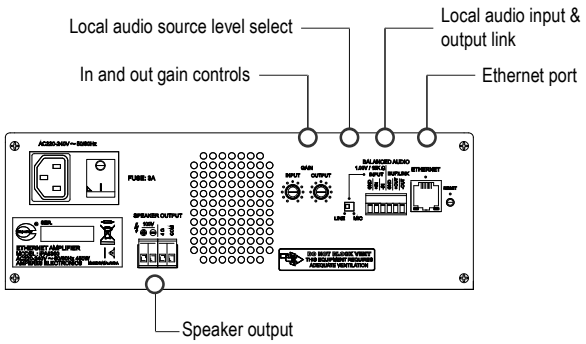
iPA5000 series of ethernet power amplifiers has been improved with added power ratings of 240 and 360W 100V line. They are now powered by the high efficiency and better performance Class D amplifier circuits with reduced physical size and weight.

They are suitable for decentralised IP PA systems in mid to large installations such as in parks, classrooms, high rise buildings, resorts, ports as well as security pole alarm system.

iPX5000 has local audio source input with selectable line or mic level to enable local paging such as in classrooms, park entrances or kiosks. The local source shall be bypassed if central paging or EVAC broadcast with higher priority is activated.

Features

- Available in 60 / 120 / 240 and 360W 100V line output
- High efficiency Class D amplifier
- Plays remote LAN BGM / paging and Local input
- Local mic / line source input; toggle via a push button switch
- Audio priority level to comply with EN54 / BS Standards
- Auto muting function for Emergency Broadcast from central paging system



Packing information

Carton size : 295 (L) x 260 (W) x 115 (H) mm
Gross weight : 3.40 kg
1 unit per carton

Technical Specifications

	iPA5060	iPA5120	iPA5240	iPA5360
Power rating (W rms 100V out)	60 W	120 W	240 W	360 W
Operating voltage	220 - 240 V AC : 50 / 60 Hz			
Power consumption - load (240V ac)	115 W / 0.8 A	160 W / 1.1 A	285 W / 2.0 A	450 W / 2.9 A
Power consumption - standby (240V ac)	18 W / 0.25 A			
Analogue input sensitivity	Balanced : line - 1 V rms / Mic - 50 mV rms			
Input impedance	Line - 10 k Ohm / Mic - 6 kOhm			
Gain controls	- 40 to 4 dBU			
THD + N at rated power	< 0.2 %			
S/N ratio	> 68 %			
Frequency response	120 - 20 kHz (+/- 3 dB)			
Output voltage (at 4 Ohm)	50 V Max			
Network / Paging protocol	TCP / IP, UDP, HTTP, ADP			
Playback format	WAV, MP3			
Tone / volume controls	5 band EQ / local input / streaming input / speaker output			
Local / remote stream selection	Push button			
Line / mic level selection	Slide switch			
User interface	Web browser ; Google Chrome / MS Edge, Firefox			
Protections	Thermal (70 Deg C), over current, short circuit, AC fuse			
Indicators	Power, linke status to paging server, streaming, local input source active			
Cooling system	Thermostat auto fan switching at 45 Deg C			
Operating temperature / humidity	-10 to 70 Deg C			
Dimensions (W x H x D)	250 x 83 x 200 mm (excluding hinge)			
Weight	3.10 kg			

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20W IP PoE Full Range Speaker iFS4020
20W IP PoE Ceiling Speaker iCS6020
20W IP PoE Horn Speaker iHS8020
20W IP PoE Pendant Speaker iPS8020

iFS4020

It is a 2 way full range speaker with 4" driver and 1" tweeter. Suitable for gyms, offices, restaurants, etc.

iCS6020

It is a 20W full range co-axial ceiling speaker with 6.5" driver and 1" tweeter. Suitable for wide range of applications such as gyms, lobbies, etc.

iHS8020

20W rated IP PoE horn speaker with ABS flare and is suitable for car parks, outdoor area paging. Waterproof RJ45 connectors are provided for outdoor applications.

iPS8020

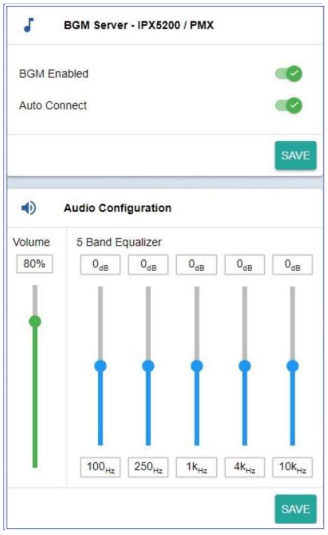
It is a 20W Pendant Ball speaker driven by full range co-axial ceiling speaker with 8" driver and 1" tweeter. Suitable for mounting at high bay areas such as warehouse, hypermarkets, etc, delivering 180 degree of coverage.

IP Speakers provide a convenient way to place your speakers in whatever place there is a need for either BGM or paging purpose in IP PA Setup. Home run cabling shall not be required, thus a great savings in wiring works, provided that a network port is available in the vicinity.

Amperes IP speakers are available in 4 versions, being full range box, ceiling, pendant ball and horn. They are all powered from PoE+ network switch

All the IP versions are PoE powered and amplified by Class D amplifiers. They work seamlessly with Amperes iPX environment, receiving audio from PMX Software or through iPX5200 while paging audio is broadcasted via iPD or iEP paging microphones.

In compliance to Fire Codes, Paging audio shall mute the BGM audio being played. Each speaker can be remotely configured via Web Interface.



Easy to use User Interfaces (UI) for IP settings, equalisation and controls

Technical Specifications

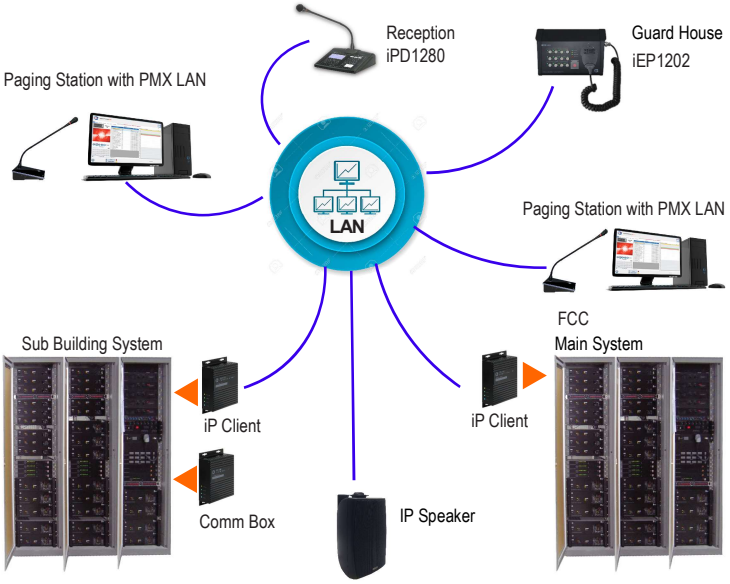
	iFS4020	iCS6020	iPS8020	iHS8020
Power rating	20 W			
Power source	PoE+ (IEEE802.3 at : 48V)			
Standby power consumptions	0.5W			
Operating power consumptions	15W Max			
Amplifier rating	20W 4 Ohm			
Speaker type	2 way : 4" + 1" tweeter	2 way : 6" + 1" tweeter	2 way : 8" + 1" tweeter	Compression coil
Speaker driver diameter	4" (100 mm)	6.5" (165 mm)	8" (200 mm)	2 " (50mm)
Sensitivity @1kHz / w / m	87 dB	90 dB	110 dB	92 dB
Frequency response @ 1 kHz +/- 3dB	105 - 18 kHz	115 - 19 kHz	90 - 18 kHz	200 - 8 kHz
S/N ratio	85 dB			
Audio codec	IMA ADPCM / MP3 / WAV			
Network & Protocols	100Base T / TCP/IP, UDP, IGMP. HTTP, ADMP, ADP			
User interface incl. firmware upgrade	Google Chrome, IE V8+ / via web browser			
Priority controls	Paging over BGM			
Operating temperature / humidity	0 - 70 degree C / 70%			
Housing	ABS enclosure / Aluminum grille		ABS	
Dimensions (mm) WxHxD	165 x 270 x 170	250 dia x 142 H	254 dia	293 x 212 x 290
Net weight (kg)	1.95	1.85	1.90	1.80
Colour	Black	White		

PMX LAN Paging & Music Server Software

PMX LAN is a virtual hardware components such as music / BGM player, music file storage, programmable timer, message player and paging station. They shall be able to integrate with components of Amperes IP system including data communication box ie. iPX5500.

With extension modules for remote monitoring, PMX LAN shall be able to monitor and in some extend able to control remotely located equipment such as QP Series amplifiers, AX3800 fault changeover, LS4808 / 16 speaker line monitor panels and others.

Application Concept



Features

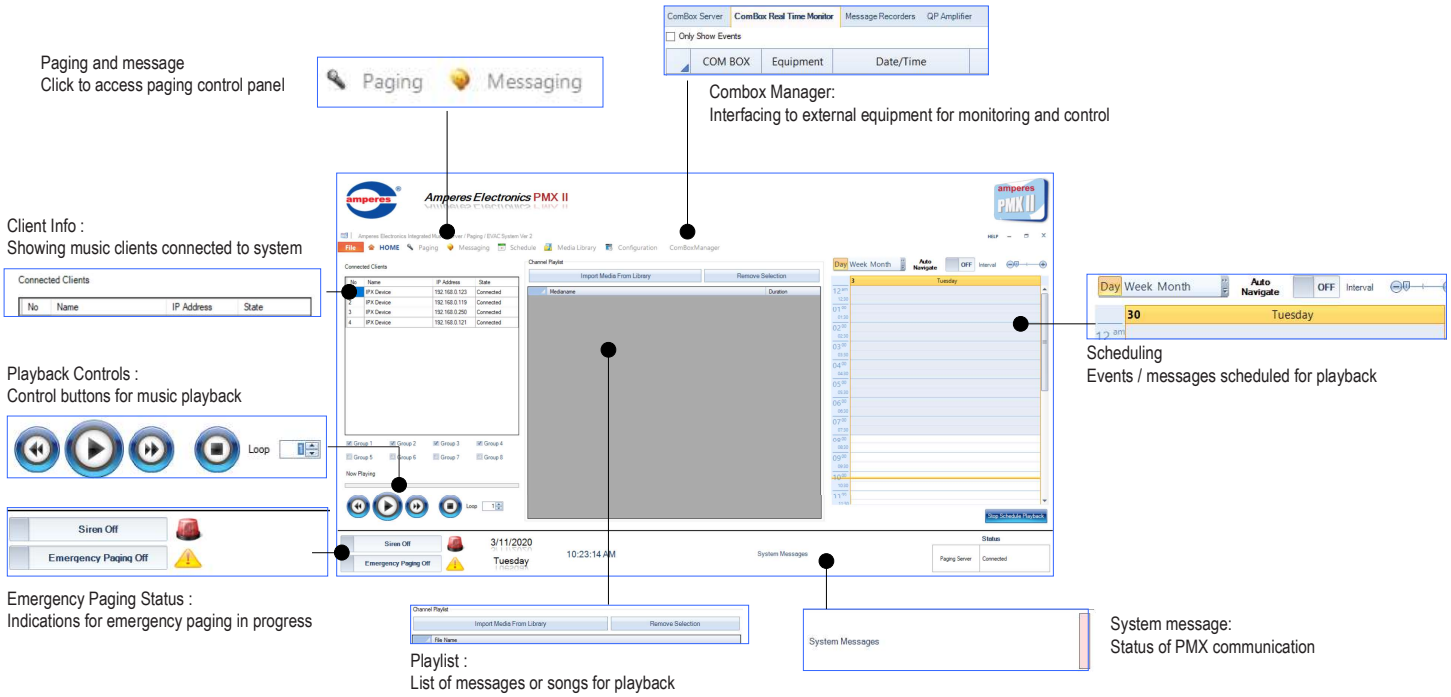
- Works with Amperes iPX ethernet clients for audio streaming, monitoring
- Activity status of connected equipment.
- Play any source supported by Windows Media Player
- Media library to store virtually unlimited songs in HDD.
- Weekly programmable timer for message or chimes playback.
- Calendar scheduling for media playback.
- Zone controls up to 254 zones.
- Naming of zones for easy identifications.
- Group paging / media playback.
- Priority paging setup with other PD mic in the system.
- Emergency paging alert.

Variant

PMX II Standalone PMX Paging & Music Software

Standalone version of PMX is also available with limited features as compared to PMX LAN. It shall require a PMX6500 audio converter to operate in conventional system.

Components of PMX LAN



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