

# PAX

Public  
Address  
Exchange



## Zoned Audio and Priority Controller

### Overview:

The PAX is a microprocessor based multi-input, multi-output, audio and announcement controller. Because the PAX has an integrated 16x16 audio switch matrix onboard, it is capable of switching any of sixteen inputs to any of 16 outputs. Additionally, multiple inputs and outputs can be used concurrently or in a multi-zone broadcast manner. The PAX occupies only 2 units of rack-space and consumes less than 20 Watts of power.

A typical passenger terminal or station installation consists of a single PAX providing multi-zone paging and ADA compliant visual messaging. Supporting interfaces would be local control microphones, telephone interface for remote paging access, pre-recorded messaging for repeat announcement or automated information, one or more amplifiers per zone, and Visual Message Signs for ADA compliance.

A typical onboard vehicle installation consists of a single PAX unit, an operator's microphone, one or several vehicle microphones, one or several emergency phones, amplifiers, speakers, and Visual Display Signs. The PAX can automatically generate pre-recorded audio and visual station stop messages based on contact closure or data received via the onboard Ethernet or serial channels. Manually initiated pre-recorded arrival and departure messages can be generated from a keypad or terminal on the operator's control panel.

### PRIORITY MANAGEMENT

To prevent announcement collisions or contention, each PAX audio input is configured with a priority assignment. If more than one input attempts to announce over the same output, the PAX prevents 'talk over' by switching only the input with the highest priority to the output zone(s).

### BACKGROUND MUSIC/DUCKING

An input can be configured as a background music source. The input can be configured to broadcast over any zone, group of zones, or all zones. Upon initiation of a manual or pre-recorded announcement, the background music is turned off or reduced in volume sufficient to allow the higher priority announcement to be heard (ducking). When the announcement is completed, the background audio returns to its pre-configured volume.

### REMOTE CONTROL PAGING AND VISUAL MESSAGING

Audio inputs can be switched remotely via the PAX's onboard 10BaseT Ethernet port or one of the three configurable asynchronous serial channels. The remote application sends a command to the PAX to connect an input(s) to an output(s). The PAX will confirm the action by sending the appropriate data response. When the remote message is delivered it will be heard over the selected zone. Likewise, the PAX can receive a remote message digitally to be displayed on the local ADA compliant Variable Message Signs.

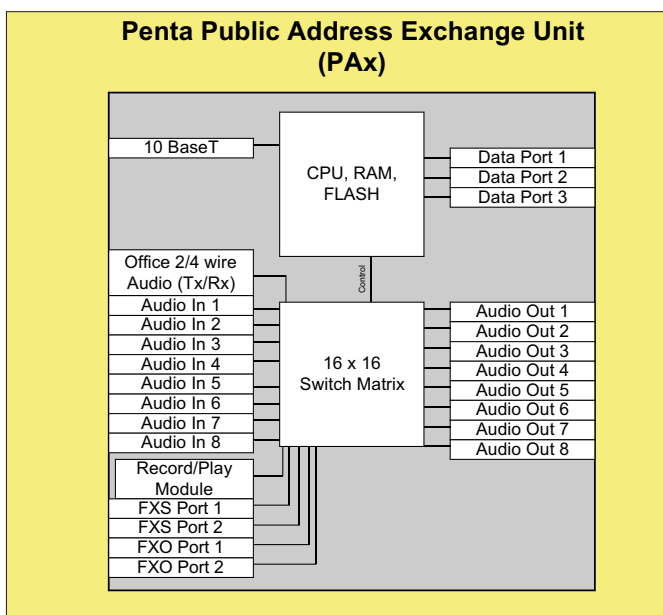
Using onboard Ethernet, serial communications, and I/O, the PAX can communicate directly with several manufacturer's audio, video and control components to provide remote supervision, device management, announcement verification, and error reporting. The PAX will interrogate the devices and report all relevant or pre-configured data to the remote equipment.

### LOCAL AND REMOTE PAX CONFIGURATION MANAGEMENT

To locally program and configure the PAX requires Penta's PAX Communicator software installed in a laptop or computer connected through the primary serial port or the Ethernet of the PAX. The PAX can be re-configured and altered remotely via Ethernet or serial port using the PAX Communicator or a control system application that uses the PAX software application interface commands (API). This allows the altering of priorities, volume settings, and default parameters of the PAX as required for the location.

### INTEGRATED PASSENGER INFORMATION SYSTEM

Multiple PAX Controllers can be integrated into a complete multi-terminal, multi-station Passenger Information System by using Penta's WavWriter Suite of PIS applications or through 3rd Party Control applications taking advantage of the PAX's easy to use API and data command interface. (Contact Penta for information and documentation on the PAX application interface.)



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## Modules: \*All modules are HOT Swappable

### LINE MODULE (2/4 wire)

- ◆ Supports 2 or 4 wire leased or dedicated circuit with DTMF signaling

### PA/RADIO MODULE

- ◆ 4 wire audio in/out for radio or Public Address use
- ◆ 600 ohm, balanced, and transformer isolated audio input/output
- ◆ Tone generation for PA alert or EIA sequential tone Radio PTT
- ◆ E&M I/O for PA local mic PTT sense and Radio PTT

### DIALUP MODULE (FXO)

- ◆ Standard 2-wire dialup line support with DAA on the module
- ◆ DTMF
- ◆ Ring Detect
- ◆ Loop Start

### VOICE MODULE

- ◆ Audio Record and Playback functions
- ◆ Supports up to 16 minutes of recorded audio
- ◆ Supports up to 64 separate messages files of 15 seconds each or any combination of message length to a total of 16 minutes non-volatile storage for all recorded messages

#### OPTIONAL:

Professionally pre-recorded messages and message segments with play-list support for creating spoken announcements in real time (date/time, train arrival/departure, gate announcements, safety announcements, advertisements, etc.).

### AMBIENT NOISE DETECTION MODULE

- ◆ Four independent ANS mic inputs
- ◆ Four Zone Output gain controls
- ◆ Input attack time is software configurable
- ◆ Output gain decay (hold) time is software configurable.

### GPIO MODULE (General Purpose Input/Output)

- ◆ 16 bit input or output (selectable bit by bit for a total of 16)
- ◆ 2-wire audio I/O

### PAX Basic Unit

2 RU 19" Rack Mount  
12-24VDC  
User Programmable FLASH Memory  
512 KB Battery backed RAM  
Real Time Clock with Battery Backup

10Mbit Ethernet (10 Base T)  
TCP/IP Protocol Support  
3 Asynchronous serial channels  
16x16 non-blocking audio matrix  
16 slot mother board for PAX modules

## Typical PAX Application

