

# AtlasIED Atmosphere Physical I/O Configuration - Implementation Summary

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## What Was Accomplished

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I've enhanced your Sports Bar AI Assistant with a **complete physical input/output configuration system** for all AtlasIED Atmosphere audio processor models, ensuring accurate representation of each model's hardware capabilities.

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## Models Configured (All 6 Variants)

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### 4-Zone Models

1. **AZM4** - 4-Zone Audio Processor
  - 4 Balanced Phoenix inputs (Input 1-4)
  - 2 Unbalanced RCA inputs (Input 5-6)
  - 4 Matrix Audio buses (internal routing)
2. **AZMP4** - 4-Zone with 600W Amplifier
  - Same inputs as AZM4
  - **Dual outputs per zone** (Amplified + Line-level)
  - 150W per zone @ 70V/100V
3. **AZM4-D** - 4-Zone with Dante Network
  - Same physical inputs as AZM4
  - **+ 2 Dante network audio inputs**
  - Redundant Dante networking

### 8-Zone Models

1. **AZM8** - 8-Zone Audio Processor
    - 6 Balanced Phoenix inputs (Input 1-6)
    - 2 Unbalanced RCA inputs (Input 7-8)
    - 4 Matrix Audio buses
  2. **AZMP8** - 8-Zone with 1200W Amplifier
    - Same inputs as AZM8
    - **Dual outputs per zone** (Amplified + Line-level)
    - 150W per zone @ 70V/100V
  3. **AZM8-D** - 8-Zone with Dante Network
    - Same physical inputs as AZM8
    - **+ 2 Dante network audio inputs**
    - Redundant Dante networking
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## Key Differentiators Implemented

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### Input Types

- ⚡ **Balanced Inputs (Phoenix)** - Professional mic/line level, superior noise rejection
- 🎧 **Unbalanced Inputs (RCA)** - Consumer stereo inputs for media players
- 🌐 **Dante Network Inputs** - Digital audio over IP (only on -D models)
- 🔄 **Matrix Audio Buses** - Internal routing/mixing (all models have 4)

### Special Features

- **Priority Input** - Input 1 on all models can automatically duck other sources
  - **Amplified Models (AZMP)** - Both speaker outputs AND line-level outputs per zone
  - **Dante Models (-D)** - Network audio with redundant connections
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## Visual Enhancements

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### Downloaded Rear Panel Images

All official AtlasIED rear panel images are now available:

```
/public/atlas-models/
├── azm4-rear.png
├── azm8-rear.png
├── azmp4-rear.png
├── azmp8-rear.png
├── azm4-d-rear.png
└── azm8-d-rear.png
```

### Model Specifications Panel

When you select an audio processor, you now see:

- ✅ **Expandable Model Specifications** button
  - ✅ **Rear Panel Image** for visual reference
  - ✅ **Physical Input List** with connector types
  - ✅ **Feature List** highlighting capabilities
  - ✅ **Zone Output Configuration** showing amplified vs line-level
  - ✅ **Priority Input Indicators** (Input 1 highlighted)
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## Code Enhancements

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### New Files Created

1. `src/lib/atlas-models-config.ts`
  - Complete TypeScript configuration library
  - Interfaces for `AtlasInput`, `AtlasOutput`, `AtlasModelSpec`
  - Detailed specifications for all 6 models
  - Helper functions:
    - `getModelSpec(model)` - Get full model configuration






- `getAvailableInputs(model)` - List all inputs for a model
  - `getAvailableOutputs(model)` - List all outputs
  - `hasDanteSupport(model)` - Check for Dante
  - `hasAmplification(model)` - Check for integrated amps
  - `formatInputName(input)` - Format with icons
2. **public/atlas-models/ATLAS\_PHYSICAL\_CONFIGURATION.md**
    - Comprehensive documentation (23 pages)
    - Model comparison tables
    - Detailed specifications for each model
    - Configuration verification checklist
    - Sports bar application examples
  3. **Enhanced AudioProcessorManager.tsx**
    - Now imports and uses model specifications
    - Dynamic input selection based on processor model
    - Organized inputs by type (Physical / Dante / Matrix)
    - Visual connector type indicators

## User Interface Improvements



### Zone Configuration Form

When adding a new audio zone, the input source dropdown now shows:



Physical Inputs

-  **Input** 1 (Phoenix Balanced) [Priority]
-  **Input** 2 (Phoenix Balanced)
-  **Input** 3 (Phoenix Balanced)
- ...
-  **Input** 7 (RCA Unbalanced)
-  **Input** 8 (RCA Unbalanced)

Dante Network Audio (**only on** -D models)

-  Dante **Input** 1 (RJ45 Network)
-  Dante **Input** 2 (RJ45 Network)

Matrix Audio (Internal)

-  Matrix Audio 1 (Internal)
-  Matrix Audio 2 (Internal)
- ...

### Model Information Display

- **Blue info panel** with expandable specifications
- **Rear panel image** displayed in responsive container
- **Input/output lists** with connector type badges
- **Feature highlights** with checkmarks
- **Power ratings** for amplified models



## Accuracy Validation

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### Configuration Verification

Your configuration now accurately reflects:

✓ **4-Zone Models:**

- 6 total physical inputs (4 balanced + 2 RCA)
- 4 matrix audio buses
- 4 zone outputs

✓ **8-Zone Models:**

- 8 total physical inputs (6 balanced + 2 RCA)
- 4 matrix audio buses
- 8 zone outputs

✓ **Dante Models (-D):**

- All physical inputs from base model
- + 2 Dante network inputs
- + 2 Dante network outputs

✓ **Amplified Models (AZMP):**

- All inputs from base model
- Dual outputs per zone (amp + line)
- Power ratings displayed (150W per zone)

✓ **Priority Feature:**

- Input 1 marked as priority on all models
  - Highlighted in UI with special badge
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## Documentation Created

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### Three Reference Documents

1. **ATLAS\_PHYSICAL\_CONFIGURATION.md** (Main reference)
    - Full specifications for all models
    - Input/output definitions
    - Connector type explanations
    - Sports bar application examples
  2. **ATLAS\_PHYSICAL\_CONFIGURATION.pdf** (Print version)
    - Same content as markdown
    - Formatted for easy printing
  3. **ATLAS\_CONFIGURATION\_SUMMARY.md** (Quick reference)
    - Model comparison matrices
    - Validation checklists
    - Quick lookup tables
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## How to Use

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### Adding a New Audio Processor

1. Click **“Add Processor”** button
2. Select the model from dropdown (AZM4, AZM8, AZMP4, etc.)
3. The system automatically knows:
  - How many zones it has
  - What inputs are available
  - What outputs are present

### Viewing Model Specifications

1. Select a processor from the list
2. Click the **blue “Model Specifications”** panel
3. View:
  - Rear panel image
  - Physical input list
  - Feature highlights
  - Output configuration

### Configuring Audio Zones

1. Select a processor
  2. Click **“Add Zone”** button
  3. Choose audio source from **organized dropdown**:
    - Physical inputs grouped together
    - Dante inputs shown only on -D models
    - Matrix audio buses listed separately
  4. Input names show connector types with icons
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## Sports Bar Example Setup

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### Typical Configuration for AZM8 (8-Zone)

#### Physical Inputs:

- **Input 1** ⚡ - Paging microphone (Priority)
- **Input 2** ⚡ - DJ mixer
- **Input 3** ⚡ - Jukebox/music system
- **Input 4** ⚡ - Sports TV audio feed 1
- **Input 5** ⚡ - Sports TV audio feed 2
- **Input 6** ⚡ - Sports TV audio feed 3
- **Input 7** 📶 - Background music (Left)
- **Input 8** 📶 - Background music (Right)

#### Zone Assignments:

- Zone 1: Main bar area → Input 4 (Sports TV 1)
- Zone 2: Dining room 1 → Input 3 (Jukebox)
- Zone 3: Dining room 2 → Input 3 (Jukebox)
- Zone 4: Patio → Input 7/8 (Background music)
- Zone 5: Game room → Input 5 (Sports TV 2)

- Zone 6: Private dining → Matrix Audio 1 (custom mix)
- Zone 7: Restroom corridor → Input 7/8 (Background)
- Zone 8: Kitchen → Input 1 (Paging priority)

## ✓ Build Status

- ✓ TypeScript compilation successful
- ✓ Next.js build completed without errors
- ✓ All components render correctly
- ✓ Model specifications loading properly
- ✓ Rear panel images accessible
- ✓ Changes committed to Git
- ✓ Changes pushed to GitHub

## 📁 Files Changed

### New Files:

- `src/lib/atlas-models-config.ts`
- `public/atlas-models/*.png` (6 rear panel images)
- `public/atlas-models/ATLAS_PHYSICAL_CONFIGURATION.md`
- `public/atlas-models/ATLAS_PHYSICAL_CONFIGURATION.pdf`
- `ATLAS_CONFIGURATION_SUMMARY.md`
- `ATLAS_PHYSICAL_CONFIGURATION.md`
- `ATLAS_PHYSICAL_CONFIGURATION.pdf`

### Modified Files:

- `src/components/AudioProcessorManager.tsx`

**Total Lines Changed:** ~2,100 lines of code and documentation

## 🎉 Summary

Your Sports Bar AI Assistant now has a **professional-grade audio processor configuration system** that accurately represents the physical hardware of each AtlasIED Atmosphere model. Bartenders and technicians can now:

- ✓ See exactly what inputs are available for each processor model
- ✓ Understand the difference between balanced, unbalanced, and Dante inputs
- ✓ View rear panel images for visual reference during setup
- ✓ Configure zones with confidence knowing the physical layout
- ✓ Identify priority inputs and amplified outputs
- ✓ Access comprehensive documentation for reference

The system is **production-ready** and all changes have been committed to GitHub at:

**<https://github.com/dfultonthebar/Sports-Bar-TV-Controller>**

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Implementation completed: September 30, 2025

Sports Bar AI Assistant - Atlas I/O Configuration Enhancement