

IT'S ALL IN WHEATNET IP



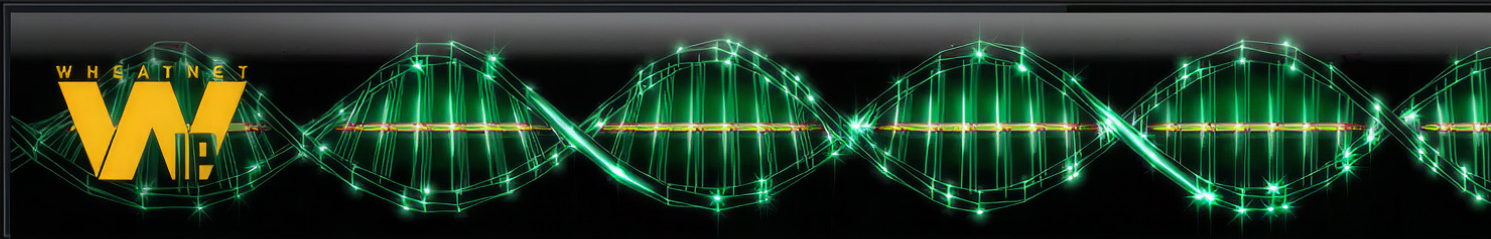
THE INTELLIGENT NETWORK

Blade 5

FIFTH-GENERATION ARCHITECTURE. FAILURE-PROOFING STARTS HERE.

BLADE 5 ANALOG/DIGITAL I/O NETWORK BLADE

 **Wheatstone**



 **Wheatstone**

Blade 5

Blade 5 is Wheatstone's fifth-generation I/O and Mix Engine architecture for the WheatNet IP audio network, engineered to take broadcast reliability and redundancy to the next level.



Designed for studios where staying on air is non-negotiable, Blade 5 introduces advanced failure recovery at both the network and mix-engine levels.

Mirrored Blade 5 Mix Engines remain synchronized through a high-frequency heartbeat for instantaneous failover, while I/O Blade 5 hitless path redundancy keeps audio moving across dual network paths without packet loss, downtime or operator intervention.

Blade 5 also brings together routing, control and audio tools including audio processing, utility mixers, OPUS codecs, AES67 compliance, onboard metering, routing and logic intelligence, dual Ethernet ports, redundant power supply and two onboard clip players — all within a compact 1RU architecture.

EXPAND WITHOUT STARTING OVER

Add Blade 5 I/O units to an existing WheatNet IP audio network, use a Blade 5 Mix Engine to power an Arcus, Strata, Tekton, LXE or GSX console, or build an entirely new WheatNet IP facility around fifth-generation reliability and redundancy.

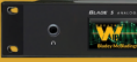


COOL BLADE FEATURES

- Two 8x2 Utility Mixers
- Stereo Audio Processing Tools
- Onboard Intelligent OS
- Salvos/Macros
- Audio Codecs (BLADE 4 and 5)
- Audio & Control Routing Matrix
- Silence Detection
- Associated Connections
- Auto Mono Summing
- Signal Splitting
- Gain Control on Every Input & Output
- AES67 Compliant
- Virtually All Audio Formats
- Two Built-in Audio Clip Players
- 12 Universal GPI/O Ports plus 128 Software Logic Ports
- LIO/SLIO Logging
- Automation Control Interface (ACI)
- Onboard ScreenBuilder (Optional)
- SNMP Management
- Variable Buffering (BLADE 4 and 5)
- Application Manager (BLADE 4 and 5)
- Enhanced Navigation Software (BLADE 4 and 5)

BLADE 5 vs. BLADE 3

FEATURE COMPARISON



AUDIO & PLAYBACK

Opus Audio Codecs

Clip Players

(2) 8x2 Utility Mixers

Stereo Audio Processing

Auto Mono Summing

Signal Splitting

Gain Control on I/O



RELIABILITY & REDUNDANCY

Dual Ethernet Ports

Redundant Power Supply

Mirrored Mix Engine

Hitless Path Redundancy



NETWORKING & STANDARDS

AES67

AES/EBU, SPDIF, & AoIP Formats

SMPTE ST 2110 Support

SNMP Network Management

Interoperable with 60+ 3rd-Party Vendors

HTML5 Browser Access



CONTROL & SOFTWARE

Onboard IP Meters App

Onboard ScreenBuilder

Headless Script Storage

ACI Support

Variable Buffering

Application Manager

Enhanced Navigation Software

Salvos / Macros

Silence Detection

Associated Connections



HARDWARE

Universal Logic Ports

Software Logic Ports

Onboard CPU & GPU Graphics

4K HDMI Output

BLADE 5		BLADE 3	
			
2 Included	—	Optional	—
2 Included	Optional	—	Optional
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
Compliant	Compliant	Compatible	Compatible
✓	✓	✓	✓
✓	✓	—	—
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	—	—
✓	✓	—	—
Optional	Optional	Optional	Optional
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	—	—
✓	✓	—	—
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
12	12	12	12
128	128	128	128
✓	Minimal	Minimal	Minimal
✓	—	—	—



KEY

✓
Included

Optional
Requires license or add-on

—
Not Available

Compliant
Fully meets AES67 standards

Compatible
Interoperates with AES67 devices

Minimal
Older chips

OVERVIEW



Run synchronized primary and backup Blade 5 Mix Engines with high-frequency heartbeat monitoring and instantaneous failover.



MIRRORED BLADE 5 MIX ENGINES

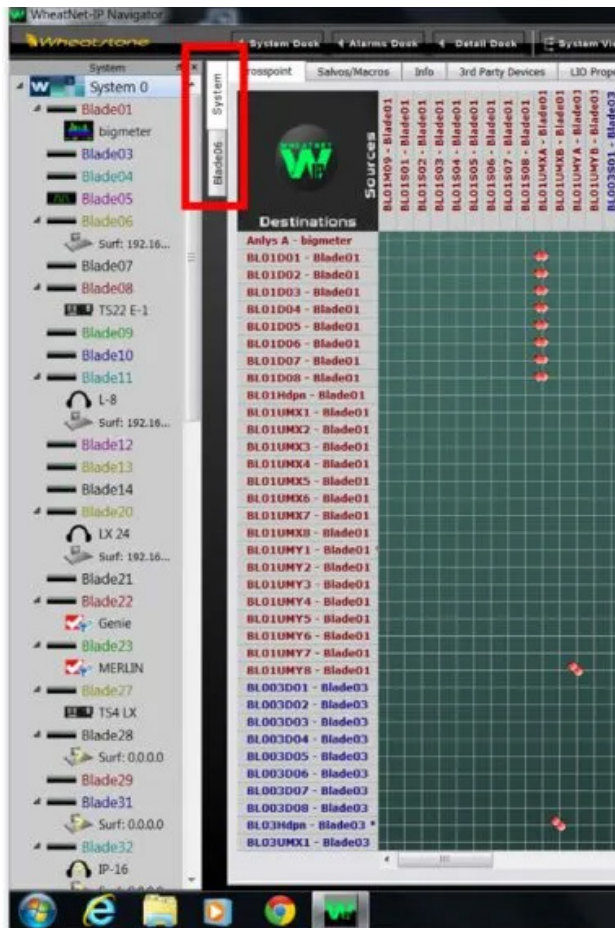
Primary and backup Blade 5 Mix Engines operate as synchronized mirrors, communicating through a high-frequency heartbeat. If the primary engine experiences a failure, the mirrored engine takes over instantaneously.

No more dead air while a hot standby launches and switches over in an emergency!

I/O BLADE 5 HITLESS PATH REDUNDANCY

Blade 5 provides redundant network paths through dual Ethernet connections with audio traveling over both paths simultaneously. If a network switch, cable or path goes down, audio continues over the remaining path without interruption.

Zero downtime. Zero packet loss.
Zero operator intervention.



FAILURE-PROOF FLEXIBILITY

Redundancy is only part of Blade 5.

Inside one rack unit are the audio processing, routing, mixing, streaming and control capabilities that make WheatNet IP BLADEs more than simple I/O nodes.

Blade 5 Includes:

-  Redundant power supply
-  Utility Mixers
-  Dual Ethernet ports
-  AES67 Compliance
-  Hitless path redundancy
-  Onboard metering
-  Two onboard audio clip players
-  Routing intelligence
-  Audio processing
-  Logic and control
-  OPUS codecs
-  WheatNet IP network integration

MIRRORED MIX ENGINE REDUNDANCY



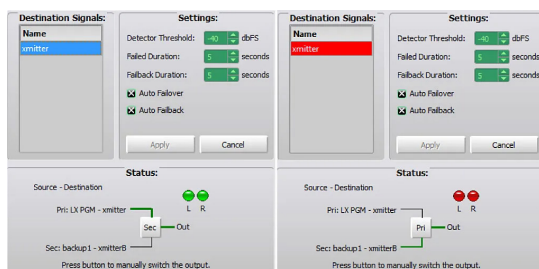
Run synchronized primary and backup Blade 5 Mix Engines with high-frequency heartbeat monitoring and instantaneous failover.

HITLESS NETWORK PATH REDUNDANCY



Dual Ethernet paths carry network traffic simultaneously, allowing broadcasts to continue uninterrupted if a network path, cable or switch fails.

ZERO OPERATOR INTERVENTION



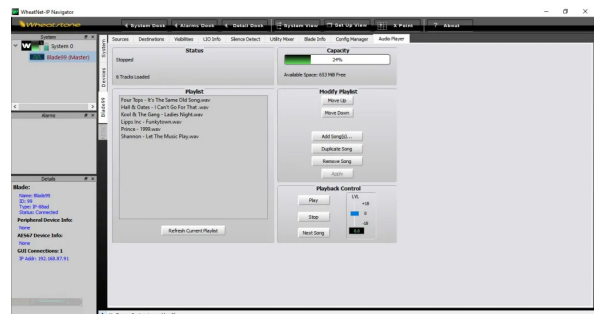
Automatic redundancy and failover happen in the background without requiring an operator to identify the failure or manually switch systems.

REDUNDANT POWER



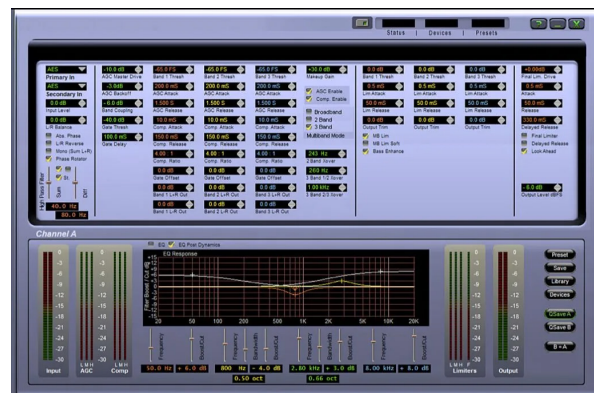
Add another layer of protection against downtime with redundant power supply.

DUAL ONBOARD CLIP PLAYERS



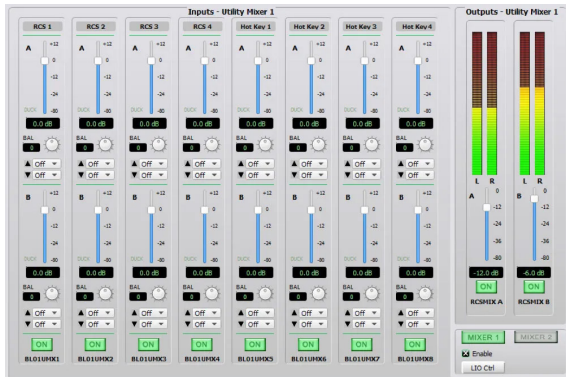
Two onboard clip players provide additional flexibility for playback and failover applications directly from the BLADE.

BUILT-IN AUDIO PROCESSING



Process incoming or outgoing audio directly within the WheatNet IP network without adding external hardware.

UTILITY MIXING



Utility mixers in Blades provide distributed, network-accessible 8×2 stereo mixing resources used for local or remote audio processing, routing, and control.

Purpose and Uses:

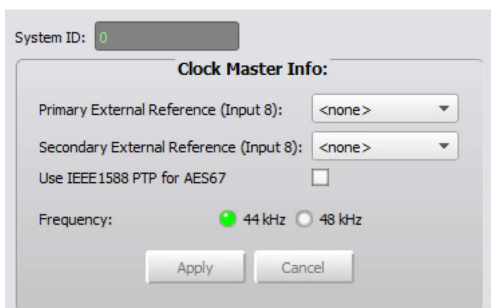
- Summing and Splitting
- Level Adjustment and Fades
- Crossfades and Segues
- Custom Mixes and Intercoms
- Replacing Hardware

OPUS AUDIO CODECS



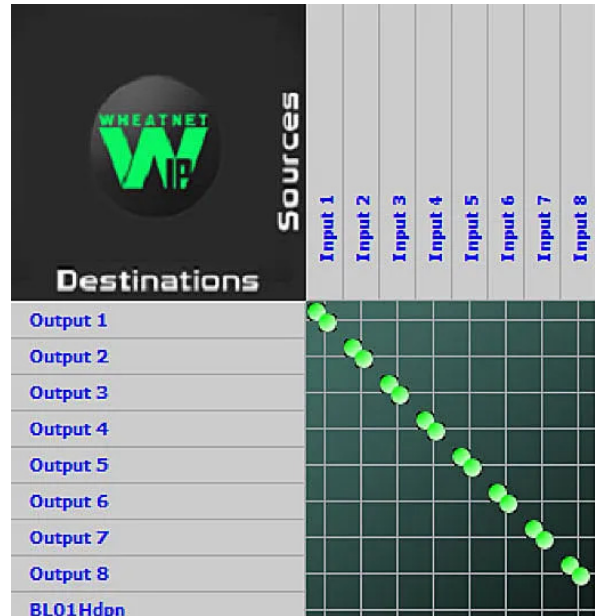
Route and stream audio between facilities, remote venues and studios using integrated OPUS codec capabilities.

AES67 COMPLIANCE



Integrate Blade 5 into AES67 environments while maintaining the native routing, control and intelligence of WheatNet IP.

ROUTING + LOGIC INTELLIGENCE



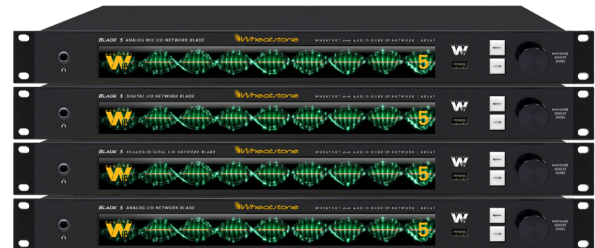
Audio routing and control intelligence live inside the BLADE, allowing WheatNet IP resources to work together throughout the network.

ONE RU. A LOT INSIDE.



Routing, processing, mixing, streaming, control, redundancy and intelligence come together in a compact 1RU architecture.

EXPAND WITHOUT STARTING OVER



Blade 5 can be added to an existing WheatNet IP audio network, allowing facilities to introduce fifth-generation capabilities without replacing their entire AoIP infrastructure.

Blade 5

I/O MODELS

IP88-5AD

BLADE 5 ANALOG/DIGITAL I/O



- Half digital, half analog I/O for 8 stereo channels, 16 mono channels, or any combination totaling 16 discrete channels (half analog, half AES digital).
- RJ45 connectors for audio (8 in, 8 out)
- 12 universal logic (GPIO) ports plus 128 software LIO ports
- AES67 compliant, SMPTE ST 2110 supported with NMOS discovery
- Redundant power supply and dual Ethernet ports
- Included: two 8x2 stereo utility mixers; OS and software apps; stereo processor with parametric EQ, compressor, and limiter; two Opus audio codecs; and two onboard clip players in 1RU.

IP88-5D

BLADE 5 DIGITAL I/O



- Digital inputs/outputs for 8 stereo channels, 16 mono channels, or any combination totaling 16 discrete channels (all AES digital).
- RJ45 connectors for audio (8 in, 8 out)
- 12 universal logic (GPIO) ports plus 128 software LIO ports
- AES67 compliant, SMPTE ST 2110 supported with NMOS discovery
- Redundant power supply and dual Ethernet ports
- Included: two 8x2 stereo utility mixers; OS and software apps; stereo processor with parametric EQ, compressor, and limiter; two Opus audio codecs; and two onboard clip players in 1RU.

IP88-5A BLADE 5 ANALOG I/O



- Analog inputs/outputs for 8 stereo channels, 16 mono channels, or any combination totaling 16 discrete channels.
- RJ45 connectors for audio (8 in, 8 out)
- 12 universal logic (GPIO) ports plus 128 software LIO ports
- AES67 compliant, SMPTE ST 2110 supported with NMOS discovery
- Redundant power supply and dual Ethernet ports
- Included: two 8×2 stereo utility mixers; OS and software apps; stereo processor with parametric EQ, compressor, and limiter; two Opus audio codecs; and two onboard clip players in 1RU.

IP5-88M BLADE 5 ANALOG MICROPHONE PROCESSOR AND I/O



- 8 female XLR jacks for microphone-level signals (-50dBu nominal)
- 8 low noise mic preamps with 70 dB of digital gain control with phantom power on/off on each mic input
- 8 mono analog line-level outputs, on four RJ45 jacks
- 12 GPIO ports on two RJ45 jacks
- AES67 compliant, SMPTE ST 2110 supported

Blade 5

I/O MODELS

IP5-M4USB

FOUR CHANNEL BLADE 5 MICROPHONE PROCESSOR AND I/O



- Four microphone preamps, four channels of microphone processing, four independent USB ports
- Four low noise mic preamps with 70 dB of digital gain control with phantom power on/off on each mic input
- 8 mono analog line-level outputs, on four RJ45 jacks
- 12 universal logic (GPIO) ports plus 128 software LIO ports
- AES67 compliant, SMPTE ST 2110 supported with NMOS discovery

SPECIAL USE BLADEs

IP88-5MADI

MULTICHANNEL AUDIO DIGITAL INTERFACE BLADE 5



- 64-channel bidirectional MADI interface
- BNC connectors for coaxial MADI inputs and outputs (1 each)
- One SFP transceiver slot for fiber connectivity
- CPU with OS
- 24-bit A/D and D/A converters
- 1RU, no fans
- AES67 compliant
- Redundant power supply and dual Ethernet ports
- Two stereo 8x2 utility mixers
- Silence sensing can be applied to any output
- 12 universal logic ports (GPIO) on 2 RJ45 connectors
- 128 software logic ports
- Full LED front panel display with graphical menu
- Front panel headphone jack

AURA8IP-5

8 CHANNEL AUDIO PROCESSOR BLADE 5



- **Eight Independent Processors:** Provides eight fully independent multi-band stereo audio processors in a single rack space.
- **Flexible Deployment:** Can be used as a standalone unit with analog and digital inputs or integrated into the WheatNet IP audio network.
- **High-Quality Processing:** Features ultra-high resolution audio processing with 4-band parametric EQ, crossover, multi-band compression, and broadband lookahead limiter.
- **Comprehensive I/O Options:** Includes four stereo pairs of AES digital audio and four stereo pairs of analog line level audio inputs and outputs.
- **Ease of Control:** Configurable and controllable via Ethernet with Wheatstone’s “Audio Processing GURU®” software or the advanced “GUI Pro” interface.
- **Built-In Utility Features:** Includes a routing matrix, routing control interface, two 8×2 stereo utility mixers, built-in web server, GPI logic with 12 universal ports, SNMP messaging, and silence detection.
- **Creative Applications:** Ideal for a wide range of applications, from satellite feeds and remote audio to processing headphone feeds and more, all within a single, cost-effective unit.

Blade 5

MIX ENGINE BLADES

The Wheatstone Mix Engine (often housed in a WheatNet IP Audio Network Blade or dedicated rack unit) handles the actual audio mixing, routing, processing, and logic control behind the broadcast console or touchscreen.

BLADE 5 CORE FUNCTIONS

Audio Processing and Mixing: Performs mixing functions, digital signal processing (DSP), equalization (EQ), compression, and limiting for console channels and utility mixers.

Network Routing: Connects directly into Ethernet switches via Audio over IP (AoIP) to route audio sources and destinations across multiple studios.

Logic Control: Manages universal logic ports (LIO/GPO) to control studio indicators, automation events, and tally lights.

Fedundancy and Failover: Provides synchronized mirrored backup options (such as in Blade 5 units) that take over instantly if a primary engine fails.

BLADE 5 MIX ENGINES CAN POWER THE FOLLOWING WHEATNET IP CONSOLES:

- **ARCUS** - A large-format TV mixing console that is designed for fast-tracking live productions.
- **STRATA** - A compact IP audio console for TV stations that's equally at home in newsrooms, remote vans or sports venues.
- **TEKTON 32** - TV IP audio console with intuitive navigation and all the essential audio routing, logic, and processing on the WheatNet IP audio network.
- **LXE** - The LXE is the ultimate AoIP radio console. Every knob, button, and display can be programmed to accommodate virtually any workflow needed. Configure as a single tabletop with or without meterbridge or inset into your furniture grouped as separate bays
- **GSX** - For small spaces and fast work flows, the GSX radio console provides a streamlined workspace optimized for managing live broadcasts or complex productions.

IP88-5E

Blade 5 MIX ENGINE



- True IP connectivity: Includes DSP processing
- 12 universal logic ports (GPIO) on 2 RJ45 connectors
- AES67 compliant
- Front panel headphone jack
- Full LED front panel display with graphical menu
- Redundant power supply and dual Ethernet ports.

B5-TVE

Blade 5 TV MIX ENGINE



- True IP Connectivity and Distributed Network
- Hundreds of Networked Sources and Destinations
- Audio and Logic on the Same Network
- Third-Party Device Integration
- Multiple Control Surface Support
- Remote Control Capability
- Flexible Studio Reconfiguration
- 24/7/365 Network Reliability
- Automatic Mix Engine Failover

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