

# Axia® PowerStation® Integrated Console Engine



## OVERVIEW

PowerStation is an all-in-one studio solution that combines audio I/O, a console power supply, mixing engine and built-for-broadcast network switch into one easy-to-deploy package. Each PowerStation Main provides 4 Analog inputs and 6 Analog outputs, 2 AES/EBU inputs and 2 AES/EBU outputs, 2 Microphone inputs with selectable Phantom power, 4 GPIO machine-control logic ports, each with 5 inputs and 5 outputs, an integrated network switch with 14 100BASE-T Ethernet ports and 2 1000BASE-T (Gigabit) ports with SFP, a heavy-duty Telecom-grade power supply with fanless convection cooling, and an industrial-grade CPU designed for harsh-environment reliability.

Use PowerStation Main with a Fusion mixing console as a standalone studio solution, or connect to other Axia equipment as part of a larger IP-Audio network. Simple Networking allows daisy-chain connection of up to 4 PowerStation-based studios without the use of an external network switch. Connecting a PowerStation Aux adds auto-switching redundant backup power and doubles audio I/O and GPIO capacity. I/O can also be easily expanded using Telos Alliance® xNodes.

## FEATURES

- Fanless design with heavy machined heat-sinks is completely silent in-studio.
- Front-panel status display monitors power and network status.
- Telecom grade power supplies are designed for maximum uptime under harsh conditions.
- Add a PowerStation Aux to PowerStation Main for dual-redundant power supply with automatic, seamless switching.
- Add redundant power to PowerStation Main without adding additional IO with Axia Console Power Supply.
- Built-in, zero-configuration network switch with Gigabit and SFP for long-distance fiber connection.
- Large variety of built-in audio I/O boasts studio-grade audio performance specs.
- Add more I/O with PowerStation Aux, or a la carte using Telos Alliance xNodes.
- Fusion 3.1 software update adds AES67 support.
- AES67 Support

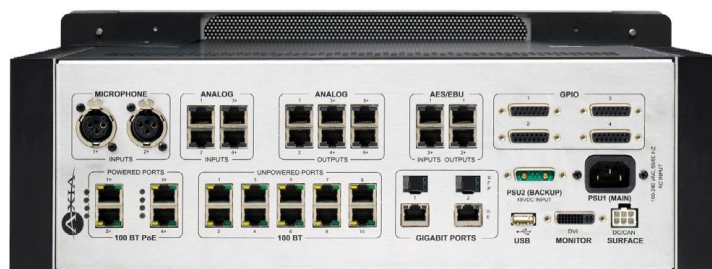
## IN DEPTH

### There's no such thing as too much uptime.

If you set out to build a console engine designed to power your studio 24 hours a day, 7 days a week, 52 weeks a year, you probably wouldn't skimp. You'd equip it with the most bulletproof, telecom-grade power supply you could find. You'd give it a redundant-power option, for even more peace of mind. You'd make it convection-cooled — no noisy cooling fans to assault your quiet studio. You'd give it plenty of I/O — analog, digital, Mic-level and GPIO logic. And then, the pièce de résistance: you'd equip it with a zero-configuration, built-for-broadcast Ethernet switch.

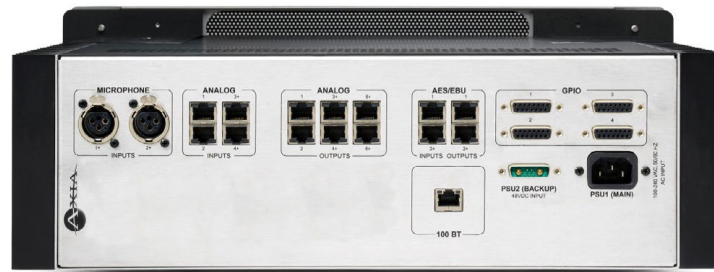
That's what we did when we designed PowerStation, the muscle behind our industry-leading Fusion mixing consoles. PowerStation is over-engineered to Axia standards, every part chosen for its ability to give constant, uninterrupted service. PowerStation combines four separate devices – a DSP mixing engine, a console CPU and power supply, audio I/O, GPIO and a custom, Axia-designed Ethernet switch – into a self-contained console engine that's engineered to ensure years of reliable, trouble-free service.

There are no compromises: PowerStation uses only best-of-the-best components, like studio-grade mic preamps and 24-bit, 256x oversampling A/D converters, a rigid, EM-tight chassis, an ultra-reliable DSP platform (not a common PC motherboard) and a hardened power supply designed for unflinching service, even in the harshest environments.



PowerStation Main is where you start. Inside is a bulletproof mixing engine capable of powering consoles of up to 40 faders. There's a massive fanless, convection-cooled power supply. There are two Mic inputs, four Analog inputs and six outputs, two AES/EBU inputs and two outputs, and four GPIO ports, each with five opto-isolated inputs and five opto-isolated outputs. There are 14 100BASE-T Ethernet ports with Livewire® for single-cable connection of Telos® phone systems, Omnia® audio processors and other Axia equipment, as well as gear from our huge list of Livewire partners. Two Gigabit ports with SFP enable connection to other studios via copper or fiber. Just connect it to your console (it only takes a single cable), plug in your audio devices, and perform some fast web-based configuration. Add power and you're on the air. It's that simple!

## PowerStation | Integrated Console Engine



To beef up your PowerStation studio even further, there's PowerStation Aux. Connect it to the PowerStation main to instantly double mic, analog, AES and GPIO ports, and add a redundant backup power supply with auto-switchover. Most redundant supplies protect only the console, but with PowerStation, the mixing engine, audio I/O and network switch are protected as well. You can also add redundant power to PowerStation Main without additional IO with Axia Console Power Supply, which offers a single-cable connection to PowerStation Main, providing backup power with automatic switching. (Auto-sensing power supply, 90VAC to 240VAC, 50 Hz to 60 Hz. 250 Watts, 2RU.)

Best of all, there's that zero-configuration Ethernet switch that's built specifically to handle IP-Audio. No settings to tweak, no configuration code to upload – just plug it in and go. There are even two Gigabit ports with SFP, to connect to other studios via fiber or copper. You can even daisy-chain up to four PowerStation studios directly, for a self-contained network that doesn't require an external Ethernet switch. No other console company makes AoIP this easy.

## SPECIFICATIONS

### Microphone Preamplifiers

- Source Impedance: 150 Ohms
- Input Impedance: 4 k Ohms minimum, balanced
- Nominal Level Range: Adjustable, -75 dBu to -20 dBu
- Input Headroom: >20 dB above nominal input
- Output Level: +4 dBu, nominal

### Analog Line Inputs

- Input Impedance: >40 k Ohms, balanced
- Nominal Level Range: Selectable, +4 dBu or -10dBv
- Input Headroom: 20 dB above nominal input

### Analog Line Outputs

- Output Source Impedance: <50 Ohms balanced
- Output Load Impedance: 600 Ohms, minimum
- Nominal Output Level: +4 dBu
- Maximum Output Level: +24 dBu

### Digital Audio Inputs and Outputs

- Reference Level: +4 dBu (-20 dB FSD)
- Impedance: 110 Ohms, balanced (XLR)
- Signal Format: AES-3 (AES/EBU)
- AES-3 Input Compliance: 24-bit with selectable sample rate conversion, 32 kHz to 96kHz input sample rate capable.
- AES-3 Output Compliance: 24-bit
- Digital Reference: Internal (network timebase) or external reference 48 kHz, +/- 2 ppm
- Internal Sampling Rate: 48 kHz
- Output Sample Rate: 44.1 kHz or 48 kHz
- A/D Conversions: 24-bit, Delta-Sigma, 256x oversampling
- D/A Conversions: 24-bit, Delta-Sigma, 256x oversampling
- Latency <3 ms, mic in to monitor out, including network and processor loop

## Frequency Response

- Any input to any output: +0.5 / -0.5 dB, 20 Hz to 20 kHz

## Dynamic Range

- Analog Input to Analog Output: 102 dB referenced to 0 dBFS, 105 dB "A" weighted to 0 dBFS
- Analog Input to Digital Output: 105 dB referenced to 0 dBFS
- Digital Input to Analog Output: 103 dB referenced to 0 dBFS, 106 dB "A" weighted
- Digital Input to Digital Output: 138 dB

## Equivalent Input Noise

- Microphone Preamp: -128 dBu, 150 ohm source, reference -50 dBu input level

## Total Harmonic Distortion + Noise

- Mic Pre Input to Analog Line Output: <0.005%, 1 kHz, -38 dBu input, +18 dBu output
- Analog Input to Analog Output: <0.008%, 1 kHz, +18 dBu input, +18 dBu output
- Digital Input to Digital Output: <0.0003%, 1 kHz, -20 dBFS
- Digital Input to Analog Output: <0.005%, 1 kHz, -6 dBFS input, +18 dBu output

## Crosstalk Isolation, Stereo Separation and CMRR

- Analog Line channel to channel isolation: 90 dB isolation minimum, 20 Hz to 20 kHz
- Microphone channel to channel isolation: 80 dB isolation minimum, 20 Hz to 20 kHz
- Analog Line Stereo separation: 85 dB isolation minimum, 20Hz to 20 kHz
- Analog Line Input CMRR: >60 dB, 20 Hz to 20 kHz
- Microphone Input CMRR: >55 dB, 20 Hz to 20 kHz

## Audio Processing

### Equalizer

- Frequency Bands: 20Hz to 320Hz, 125Hz to 2KHz, 1.25KHz to 20KHz.
- Cut/Boost range on each band: -25dB to +15dB.
- Q-factor: Automatic - bandwidth varies based on amount of cut or boost.

### Compressor

- Threshold: -30dB to 0dB Ratio: 1:1 to 16:1
- Post-processor Trim Level: Adjustable from -20dB to +20dB

## PowerStation | Integrated Console Engine

### Expander/Noise Gate

- Threshold: -50dB to 0dB Ratio: -30dB to 0dB

### De-esser

- Threshold: -20dB to 0dB Ratio: 1:1 to 8:1

## Power Supply AC Input, PowerStation Aux & Main

- Auto-sensing supply, 90VAC to 240VAC, 50 Hz to 60 Hz, IEC receptacle, internal fuse
- Power consumption: 500 Watts

## Axia Console Power Supply

- Add redundant power to PowerStation main without additional IO.
- Single-cable connection to PowerStation main provides backup power with automatic switching.
- Auto-sensing power supply, 90VAC to 240VAC, 50 Hz to 60 Hz.
- Power consumption: 250 Watts.

## Operating Temperatures

- -10 degrees C to +40 degrees C, <90% humidity, no condensation

## Dimensions (HxWxD) and Weight

- PowerStation Main/Aux: 7 x 19 x 15.5 inches (behind rail)
- Front panel extends 2.25 inches in front of rack rail
- PowerStation Main: 45 pounds
- PowerStation Aux: 40 pounds

## Regulatory

**North America:** FCC and CE tested and compliant, power supply is UL approved.

**Europe:** Complies with the European Union Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), as amended by Commission Decisions 2005/618/EC, 2005/717/ EC, 2005/747/EC (RoHS Directive), and WEEE.