Axia® StudioCore™

Our newest console engine for iQ, Radius, RAQ, and DESQ mixing surfaces.

Telos Alliance®



Axia® StudioCore

Integrated Engine for Axia iQ Consoles





Abundant I/O plus a dedicated AoIP network switch and mixing engine

Overview

StudioCore™ is an integrated console engine for Axia iQ, Radius, RAQ, and DESQ mixing consoles that combines audio I/O, a console power supply, a mixing engine, and a dedicated five-port AoIP network switch with PoE into a single fanless 2RU rack-mounted package.

StudioCore provides four selectable mic/line inputs, eight dedicated line inputs and outputs, and three digital inputs and outputs that are user-configurable as AES/EBU, S/PDIF, and USB Audio, which eliminates the need for an IP driver for stereo applications. It also includes two headphone outputs with independent DACs and built-in amplifiers, a built-in audio file player via USB data port, and four GPI/O ports. The Option Board slot provides the option to install a CAN bus board with three CAN ports, providing connectivity for up to three Axia iQ surfaces.

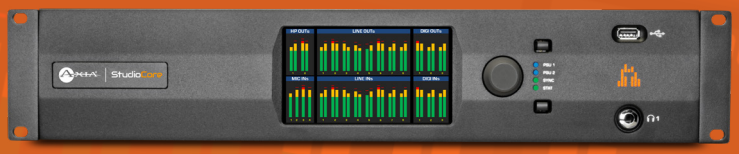
The optional Core Soft remote control solution provides HTML5 browser-based control of StudioCore, allowing it to function as a standalone mixer (with or without a hardware control surface), control a connected iQ surface, and serve as an in-browser monitor for the control room monitor output.

A second redundant internal power supply is optionally available.

Features

- 2RU fanless design for silent in-studio use
- 5” color IPS LCD touchscreen display
- Front panel UI for local control of routing, I/O, and audio levels
- Single internal power supply (second internal PSU optional)
- Dedicated 5-port AoIP network switch with PoE
- 4 selectable mic/line inputs
- 8 dedicated line inputs/line outputs
- 3 digital inputs/outputs (user-configurable combinations of AES/EBU, USB Audio, and S/PDIF)
- USB Audio I/O eliminates the need for an IP driver for stereo applications
- 2 headphone outputs with independent DACs and built-in amplifiers
- 4 GPI/O ports
- Optional CAN board with 3 CAN connections
- Built-in audio file player via USB data port

Front panel color touchscreen display and UI



- 8 output monitor matrix system
- 24-channel mixing engine
- Livewire+ AES67 stream capacity of 32 inputs and 32 outputs
- Optional Core Soft license provides HTML5 browser-based control of StudioCore as a standalone mixer or to control a connected iQ surface

In Depth

StudioCore is an integrated console engine for Axia iQ, Radius, RAQ, and DESQ mixing consoles. It combines an abundance of audio I/O, a robust internal console power supply (with a redundant supply available as an option), a full-featured 24-channel mixing engine, and a dedicated five-port AoIP network switch with PoE into a single 2RU rack-mounted package.

Its front panel boasts a 5” color IPS LCD touchscreen display that is viewable from any angle. Its UI provides complete local control of routing, I/O, and audio levels. Two dedicated headphone outputs with independent DACs and built-in amplifiers easily and cleanly drive low- and high-impedance headphones. Its fanless design ensures studio-friendly silent operation.

StudioCore’s easy-to-configure built-in 5-port Ethernet switch with PoE makes connecting to other compatible devices on the AoIP network simple and straightforward.

StudioCore provides plenty of input and output options for small- to medium-sized studios. There are four selectable mic/line inputs, eight dedicated line inputs and outputs, three digital inputs and outputs that are user-configurable as AES/EBU, S/PDIF, and USB Audio, which eliminates the need for an IP driver for stereo applications. Its generous Livewire+ AES67 stream capacity offers thirty-two inputs and thirty-two outputs. An eight-output monitor matrix system provides for flexible monitoring. StudioCore also includes a built-in audio file player via its USB data port and four GPI/O ports. Optionally, three CAN bus ports provide connectivity with up to three Axia iQ consoles.

The optional Core Soft license provides HTML5 browser-based control of StudioCore, allowing it to function as a standalone mixer (with or without a hardware control surface), control a connected iQ surface, and serve as an in-browser monitor for the control room monitor output.



Fanless design for silent in-studio use

General Specifications

Power Supply

- Universal AC Input Range (90 – 264VAC)
- Operating Mains Frequency 47-63Hz
- -10 to +40 degrees Celsius, <70% humidity, no condensation
- IEC receptacle. Internal fuse.
- Mains Outlet rating: 100W minimum (for each PSU module)
- Standard Operating Power consumption: 25W (each PSU module)

Mechanical Data

- Standard Rack-Mounted chassis, 2RU (Rack Units)
- Overall External Depth: 307mm, Rack depth: 272mm, Height: 89mm
- Unit Weight: 4.8kg
- Shipping Weight: 6.0kg

Edge I/O Specifications

Microphone Inputs 1 - 4

- Input Type: MIC/LINE selectable, electronically balanced
- Input Impedance: 2k ohms minimum, balanced
- Preamp Gain Range: Adjustable, 0dB (Line), 8dB .. 63dB in 1dB steps (Mic)
- Digital Gain Range: Adjustable, -100dB to +27dB on all Line Inputs
- A/D Conversion: 32-Bit Delta-Sigma, 256x oversampling
- Maximum Input Level: +18dBu
- Frequency Response: +/-0.25dB @ 20Hz to 22kHz on all Mic/Line Inputs
- THD: < 0.0012% (-98dB) @ 1kHz, -1dBFS (+17dBu)
- Dynamic Range: -112dB A-Weighted, -110dB unweighted
- Equivalent Input Noise: -128dBu, 150-ohm source, -50dBu input level
- Phantom Power: 48V switchable, 14mA per channel

Mic/Line inputs with selectable phantom power plus analog and AES/EBU I/O



Analog Line Inputs 1 - 8

- Input Type: Electronically Balanced
- Input Impedance: 12k Ohms
- A/D Conversion: 32-Bit Delta-Sigma, 256x oversampling
- Digital Gain Range: Adjustable, -100dB to +27dB on all Line Inputs
- Maximum Input Level: +24dBu
- Frequency Response: +/-0.25dB, 20Hz to 22kHz, on all Line Inputs
- THD: < 0.0017% (-95dB) @ 1kHz, -1dBFS (+23dBu)
- Dynamic Range: -112.5 dB (A-Weighted), -109.5dB (Unweighted)
- S/N Ratio: 112dB (Unweighted)
- Idle Noise: -112.5 dB (A-Weighted), -109.5dB (Unweighted)

Digital Audio Inputs and Outputs 1 - 3

- Reference Level: +4dBu (-20dB FSD)
- Signal Format: Switchable AES/EBU (AES3), S/PDIF, USB Audio (Class 1.0), 24-bit
- Impedance: 110 Ohm balanced (AES3), 75 Ohm (S/PDIF)
- SRC Type: 24-bit switchable on all inputs
- Digital Reference: Internal (network timebase) or external reference 48 kHz, +/- 2 ppm
- Internal Sampling Rate: 48 kHz
- Dynamic Range with –60dB Input (A-Weighted): 128dB typical
- Input SRC THD+N: -125dB, 22Hz to 24kHz @ -1dBFS
- Input Sample Rate: 32kHz to 216kHz
- Output Sample Rate: 48kHz

Analog Line Outputs 1 - 8

- Output Type: Electronically Balanced
- D/A Conversion: 32-bit, Delta-Sigma, 256x oversampling
- Digital Gain Range: Adjustable, -127.5dB to 0dB, 1dB step on all Line Outputs
- Maximum Output Level: +24dBu
- Frequency Response: +/-0.1dB, 10Hz to 22kHz on all Line Outputs
- THD: < 0.013% (-77.5dB) @ 1kHz, -1dBFS (+23dBu)
- Dynamic Range: -114dB (A-Weighted), -111.5dB (Unweighted)
- S/N Ratio: -111dB (Unweighted)
- Output Type: Electronically Balanced



Livewire+ AES67 AoIP with 32 inputs and 32 outputs

Headphone Outputs 1-2

- Output Type: Stereo unbalanced, with headphone plug detection
- D/A Conversion: 32-bit Delta-Sigma, 256x oversampling
- S/N Ratio: 128dB A-Weighted.
- THD+N: 108dB @ 1kHz, -1dBFS (+23dBu)
- Continuous output power, 32-Ω stereo load: 2 W
- Minimum load impedance 8 Ω
- CMRR: 100dB

Network Switch

- 1x 1000BASE-T with PoE+, RJ-45 port
- 2x 1000BASE-T with PoE, RJ-45 ports
- 2x 1000BASE-T, RJ-45 ports

CAN Option Board

- Console Frame Connections: 3x, 6-pin Molex ports, “latch and lock” style

Latency

- Mic/Line IN to Line/HP OUT: 1.4ms (ADC + Internal AoIP Loopback Routing + DAC)
- Usage scenario: Analog Monitor Matrix
- Mic/Line IN to Network to Line/HP OUT: 2.28ms (ADC + External AoIP Network + DAC)
- Usage scenario: 2x StudioEdge units interconnected via external Network switch
- Mic IN to Monitor OUT: 3.9ms (ADC + Internal AoIP Net + Core DSP + Internal AoIP Net + DAC)
- Usage scenario: Console Mic to Headphone monitoring in a StudioCore
- Digital IN to Digital OUT: 4.0ms (A-SRC input + Internal AoIP Loopback Routing + Digital output)
- Usage scenario: Digital Monitor Matrix

Built-In Mic Processing and EQ



I/O Endpoint Audio Buffering

- Live Streams: 1ms
- AES67 Streams: 20ms
- Standard Streams: 20ms
- AES67 Streams with pTime>5ms : 100ms

Core DSP Specifications

4-Band Equalizer

- Band 1 Frequency: 20Hz to 320Hz
- Band 2 Frequency: 125Hz to 2.0kHz
- Band 3 Frequency: 1.25kHz to 20kHz
- Bands 1-2-3 Gain: -25.0dB to +15.0dB
- Band 1 Type: Auto
- Band 2 Type: Peak
- Band 3 Type: Peak/Shelf selectable

Microphone Processing

- Noise Gate Threshold: -50.0dB to 0.0dB
- Noise Gate Depth: -30.0dB to 0.0dB
- Compressor Threshold: -60.0dB to 0.0dB
- Compressor Ratio: 1.0 : 1 to 16.0 : 1 , with selectable Freeze mode
- De-Esser Threshold: -20.0dB to 0.0dB
- De-Esser Ratio: 1.0 : 1 to 8.0 : 1 , with selectable Freeze mode
- Post-Processing Trim Gain: -20.0dB to +20.0dB

Engine Audio Buffering

- Live Streams: 2.5ms
- AES67 Streams: 10ms
- Standard Streams: 20ms
- AES67 Streams with pTime>5ms : 30ms

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