

# Lynx AES16

## 192 kHz Multichannel AES/EBU Interface

PRODUCT DATA

- ⦿ Sixteen-channel AES/EBU Digital I/O
- ⦿ 192 kHz / 24-bit Single-wire and Dual-wire Modes
- ⦿ SynchroLock™ Jitter Attenuation
- ⦿ Word Clock and Multi-card Synchronization
- ⦿ Powerful Mixing and Routing Engine
- ⦿ Low-latency Drivers for Windows and Macintosh
- ⦿ Cabling for Direct Digital Interface to Yamaha, Apogee, Mackie, and other Equipment

*Integrates digital consoles, multi-channel A/D and D/A converters, and hard disk recorders with computer-based workstations*

The AES16 offers unprecedented AES/EBU channel capacity and routing flexibility in a single PCI card format. With support for up to 16 channels of input and output at sample rates up to 192 kHz, the AES16 turns your computer into a powerful digital router or patchbay with extensive flexibility with minimal cabling. Most importantly, the AES16 supports the emerging single-wire 192 kHz standard and is compatible with existing dual-wire AES/EBU devices. Up to four AES16's can be installed in a single computer.

Offering a solution for jitter problems in AES signals, the AES16 incorporates a new Lynx technology called SynchroLock™ that provides extreme jitter tolerance at all inputs. By coupling statistical analysis with low-noise clock generation techniques, SynchroLock is able to extract a very clean clock from AES signals affected by long cable lengths and other noise sources. The clock output of SynchroLock can also be used as a very accurate word clock source for other studio devices.

Glitch-free recording and playback is assured due to the AES16's large on-board buffers and extremely efficient zero-wait state DMA engine. These features provide tolerance to system latencies and significantly reduce load on the host CPU. Data transfer hardware and software are highly optimized to provide extremely low latencies for ASIO and other real-time applications.

The AES16 includes an LStream expansion port for increasing its I/O capabilities. Connecting a Lynx LS-ADAT adds multi-channel ADAT lightpipe I/O and supports format conversion between AES/EBU and ADAT. The LStream port can also be used for routing data to a second AES16 and increasing the channel count to 32.

The AES16-SRC model offers eight channels of mastering quality sample rate conversion to accommodate studios running multiple samples rates or signals not locked to "house sync".



The on-board digital mixer offers flexible patch-bay style routing and digital mixing.

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## MODELS

<b>AES16</b>	Standard model without cables. Refer to the optional cables listed below.
<b>AES16-XLR</b>	Includes two six-foot D-sub to XLR cables sets.
<b>AES16-SRC</b>	Includes XLR cable sets and eight channels of onboard sample rate conversion.

## DIGITAL I/O

<b>Number/Type</b>	Eight stereo inputs and eight stereo outputs 24-bit AES/EBU format, transformer coupled
<b>Channels</b>	16 in/out in single-wire mode 8 in/out in dual-wire mode
<b>Sample Rates</b>	All standard rates and variable rates up to 192 kHz in both single-wire and dual-wire modes
<b>Sample Rate Conversion</b>	Eight channels available with support for conversion ratios up to 8:1 Dynamic range: 142 dB Multiple-input SRC phase matching Available on AES16-SRC model only

## ARCHITECTURE

<b>Core</b>	FPGA-based core contains custom PCI interface, data routing and formatting, device control, digital mixing, clock routing and control, and DMA engine. 256 Kbytes of on-board RAM for data buffering Support for field upgrades of firmware.
<b>Audio Devices</b>	Card is visible to host applications as eight record devices and eight play devices. Each device has two channels and can be used independently for multi-client functionality.

## CLOCKING

<b>Sources</b>	Digital inputs 1 - 4, external word clock (with XLR cables only) on BNC, internal word clock on header, on-board low-jitter crystal oscillator
<b>SynchroLock™</b>	Multi-stage, VCXO-based clock generation system with high jitter attenuation. Wide mode tracks off-frequency clocks, narrow mode generates ultra-low jitter output for standard frequencies.

## ON-BOARD DIGITAL MIXER

<b>Type</b>	Hardware-based, low latency
<b>Routing</b>	Ability to route any input to any or multiple outputs
<b>Mixing</b>	Up to four input or playback signals mixed to any output, 40-bit precision
<b>Status</b>	Peak levels to -114 dB on all inputs and outputs

## LSTREAM™ EXPANSION PORT

<b>Compatibility</b>	Supports Lynx LStream expansion cards including the LS-ADAT 16-Channel ADAT I/O card
<b>Type</b>	High-speed serial, up to 16 channels @ 24-bits on 14-pin internal connector

## CONNECTIONS

<b>I/O Ports</b>	Two bracket-mounted 26-pin high-density female D-sub connectors. Can be configured to support eight channel or four channel AES connections.
<b>External Clock</b>	75-ohm BNC word clock input and output provided on XLR cable set
<b>Internal Clock</b>	Two 75-ohm board mounted 2-pin headers for word clock input and output

## SOFTWARE

<b>Windows Drivers</b>	For Windows 2000 / XP platforms: MME, ASIO 2.0, WDM, DirectSound, Direct Kernel Streaming and GSIF
<b>Macintosh Drivers</b>	CoreAudio for OSX
<b>Mixer Application</b>	Multi-window GUI provides complete control of digital mixer and all hardware settings

## GENERAL

<b>PCI Bus</b>	Version 2.2 compliant
<b>Data Transfers</b>	Up to 132 Mbytes/sec using custom 16-channel zero-wait state, scatter-gather DMA engine Bus mastering supported
<b>Size</b>	5.0" H X 7.4" W X 0.75" D (standard half-size PCI card)

## CABLES

<b>Included with AES16-XLR &amp; AES16-SRC only</b>	CBL-AES1604 (qty. 2): 26-pin high-density male D-sub to four female XLR's (AES inputs), four male XLR's (AES outputs), and two female BNC's (word clock I/O) Six-foot, 110-ohm shielded twisted pair cabling
<b>Optional cables for AES16 Standard Model</b>	CBL-AES1603: 26-pin high-density male D-sub to 25-pin male D-sub. Supports either 8 channels of input or output Compatible with Apogee AD16 and DA16 Twelve-foot, 110-ohm shielded twisted pair cabling CBL-AES1605: 26-pin high-density male D- sub to 25-pin male D-sub. Supports 4 channels of input and output. Compatible with devices with standard Yamaha digital I/O pinout from Yamaha, Apogee, Mackie, and others. Twelve- foot, 110-ohm shielded twisted pair cabling

*Other cables will be offered for connection to equipment from  
Tascam, Sony and digidesign. For a complete up-to-date list of all  
products supported, please go to <http://www.lynxstudio.com>.*



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