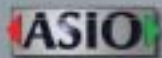


# E-MU Digital Audio Systems

E-MU'S new Digital Audio Systems deliver everything you need to produce audio on a PC with professional results – 24-bit/192kHz converters, hardware-accelerated effects and mixing, comprehensive sync options and seamless compatibility with your favorite PC audio/sequencer software. E-MU Systems has teamed up with the Creative Advanced Technology Center, a world leader in ASIC and algorithm development for PC audio, to develop the new line of Creative Professional hardware interfaces that stand toe-to-toe with the most advanced and expensive audio systems in the world. E-MU offers three Digital Audio Systems: the E-MU 1820M, 1820 and 1212M, each matched with I/O and sync options to suit the specific needs of musicians, recording engineers and sound designers.

All three Digital Audio Systems ship with a PCI card that features ADAT, S/PDIF and FireWire® interfaces, as well as connectivity to a family of internal and external I/O and sync options. Whether you are recording full-blown productions or running virtual instruments on a dedicated computer, E-MU's Digital Audio Systems deliver everything needed to create professional-quality music on your PC at a price that will change your expectations of desktop recording forever.

- Features mastering-grade 24-bit, 192kHz converters – the same A/D converters used in Digidesign®'s flagship ProTools® HD I/O Interface
- E-DSP 32-bit Multi-effects Processor offers you over 20 hardware-accelerated effects (over 500 presets) with no CPU overhead – plug-in architecture allows you to add new effects as needed
- 32 channels of zero latency hardware mixing/monitoring with super-flexible virtual patchbay – no external mixer needed
- Compatibility with most popular audio/sequencer applications with ultra-low latency WDM, DirectSound® and ASIO™ 2.0 Drivers
- Powerful software studio package included



## E-MU 1820™



24-bit/192kHz  
160-pin PCI Connector

### I/O Configuration:

- Two TFPro™ Mic/Line/Hi-Z preamps (w/48V phantom power)
- Six 1/4" Balanced Inputs
- Eight 1/4" Balanced Outputs
- Turntable Input (w/ground lug and hardware RIAA preamp)
- 24-bit/192kHz ADAT In/Out (switchable to S/PDIF)
- 24-bit/96kHz coaxial S/PDIF In/Out (switchable to AES/EBU)
- 24-bit/96kHz optical S/PDIF Out (switchable to AES/EBU)
- Two sets of MIDI In/Out
- Four stereo 1/8" Speaker Outputs (configurable from stereo to 7.1)
- Stereo Headphone Output
- FireWire® Interface

### Sync Configuration:

- Word Clock In/Out
- SMPTE In/Out
- MTC Out

## E-MU 1820



24-bit/192kHz

### I/O Configuration:

- Two TFPro Mic/Line/Hi-Z preamps (w/48V phantom power)
- Six 1/4" Balanced Inputs
- Eight 1/4" Balanced Outputs
- Turntable Input (w/ground lug and hardware RIAA preamp)
- 24-bit/192kHz ADAT In/Out (switchable to S/PDIF)
- 24-bit/96kHz coaxial S/PDIF In/Out (switchable to AES/EBU)
- 24-bit/96kHz optical S/PDIF Out (switchable to AES/EBU)
- Two sets of MIDI In/Out
- Four stereo 1/8" Speaker Outputs (configurable from stereo to 7.1)
- Stereo Headphone Output
- FireWire® Interface

## E-MU 1212™



24-bit/192kHz  
160-pin PCI Connector

### I/O Configuration:

- Two 1/4" Balanced Inputs
- Two 1/4" Balanced Outputs
- 24-bit/192kHz ADAT In/Out (switchable to S/PDIF)
- 24-bit/96kHz S/PDIF In/Out (switchable to AES/EBU)
- MIDI In/Out
- FireWire® Interface

# Total Analog and Digital Connectivity

## AudioDock M

Front

Two premium TFPro™ Mic Preamps with Neutrik® Connectors, 48V Phantom Power and 40dB of Input Gain control



MIDI, Sample Rate and Sync Source Indicators

MIDI In/Out 1    Optical S/PDIF Output    Stereo Headphone Output

Back

Six balanced 1/4" Analog Inputs (24-bit/192kHz)



Stereo Turntable Input with RIAA Preamp and Ground

4 Stereo 1/8" Speaker Outputs (configurable from stereo to 7.1)

EDI Connector to E-MU 1010 PCI Card (no external power required)

Eight balanced 1/4" Analog Outputs (24-bit/192kHz)

MIDI In/Out 2

### E-MU 1010 PCI Card

### Sync Daughter Card

### E-MU 0202 I/O Daughter Card

EDI Connector to E-MU AudioDock M

Coaxial S/PDIF In and Out

ADAT In and Out (192kHz compatible) - switchable to optical S/PDIF

FireWire® Port for Video Capture, connecting peripheral devices and/or additional hard drives



Word Clock Sync In and Out

SMPTE Sync In and Out

MTC Out



Two balanced 1/4" Analog Inputs (24-bit/192kHz)

Two balanced 1/4" Analog Outputs (24-bit/192kHz)

MIDI In/Out



# Integrated Hardware-accelerated Effects, Mixing and Monitoring

## E-MU PatchMix DSP

### Toolbar

Quick access to your most-used functions (e.g. Show/Hide, Session and effects management, etc.)

### Viewer Window (3 Modes)

- Effects Editor lets you view all effects parameters for quick editing
- Input/Output Patchbays give you an instant overview of your I/O configurations at a glance

### Effects Presets

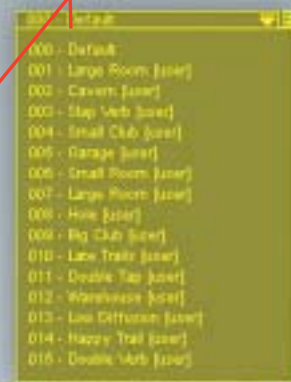
Save your favorite effects parameter settings as presets within the effects plug-in

### Audio Source

A Patchstrip can be fed by any external analog or digital input, as well as internal host sources from your audio application via ASIO™ or DirectSound®

### Insert Chain

The Insert Chain allows you to easily route a channel of audio to any effects plug-in, physical output, or virtual output (ASIO) in any order (i.e. monitor your recording with effects but record dry). You can also send and return audio to/from your outboard gear like a traditional insert



### Main & Auxiliary Buses

Offer you the same flexibility as the Insert Chain above to route your Aux Buses and Main Bus to effects plug-ins, physical outputs and virtual outputs (ASIO)

### Sync

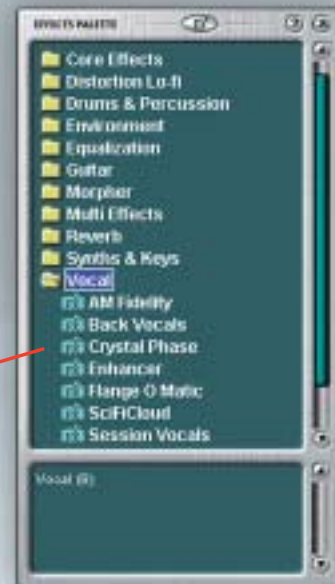
Choose from Internal Clock, External ADAT, or External S/PDIF sync to synchronize your entire digital studio

### Aux Sends

The two Aux Sends let you patch your audio to Busses for effects processing or submixing before hitting your audio recorder (perfect for headphone cuemixes)

### Effects Palette (over 500 Effects Presets)

Puts all your E-DSP effects plug-ins at your fingertips, letting you effortlessly drag-and-drop effects onto Patchstrip Inserts and Aux/Main Buses, as well as create and organize new effects presets and configurations – you can even chain multiple effects plug-ins and save them together to create specialized effects (e.g. vocal channel, guitar recording channel)





## 1820M Specifications

### General Specifications

- Sample Rates: 44.1, 48, 96, 192 from internal crystal or externally supplied clock
- Bit Depth: 16 or 24 bits
- PCI Bus-Mastering DMA subsystem reduces CPU usage
- Zero-latency direct hardware monitoring w/effects

### Analog Line Inputs

- Type: servo-balanced, DC-coupled, low-noise input circuitry
- Level (software selectable)
  - Professional: +4 dbu nominal, 20 dBu maximum
  - Consumer: -10 dBV nominal, 6 dBV maximum
- Frequency Response:  $\pm 0.05$  dB, 20 Hz- 20 kHz
- THD+N (1 kHz at -1 dBFS): -110 dB (.0003%)
- SNR (A-weighted): 120 dB
- Dynamic Range (1 kHz, A-weighted): 120 dB
- Stereo Crosstalk (1 kHz at -1 dBFS): < -115 dB
- Common-Mode Rejection (60 Hz): > 40 dB

### Analog Line Outputs

- Type: balanced, low-noise, 2-pole low-pass differential filter
- Level (software selectable)
  - Professional: +4 dbu nominal, 20 dBu (bal)
  - Consumer: -10 dBV nominal, 6 dBV max (unbal)
- Frequency Response: +0.0/-0.35 dB, 20 Hz- 20 kHz
- THD+N (1 kHz at -1 dBFS): -105 dB (.0006%)
- SNR (A-weighted): 120 dB
- Dynamic Range (1 kHz, A-weighted): 120 dB
- Stereo Crosstalk (1 kHz at -1 dBFS): < -115 dB

### Combo Microphone Preamplifier/Line Inputs

- Type: TFPro™ combination microphone preamp and line input
- Frequency Response: +0.8/-0.1 dB, 20 Hz - 20 kHz
- Stereo Crosstalk (1 kHz): < -120 dB
- Line Input:
  - Gain Range: -12 to +28 dB
  - Max Level: +17 dBV (19.2 dBu)
  - THD+N (1 kHz at -1 dBFS, min gain): -100 dB (.001%)
  - Dynamic Range (A-weighted, min gain): 107 dB
  - SNR (A-weighted, min gain): 107 dB
  - Input Impedance: 10K ohm
  - Common-Mode Rejection Ratio (60 Hz): > 40 dB
- Microphone Preamplifier
  - Gain Range: +10 to +50 dB
  - Max Level: -12 dBV (-9.8 dBu)
  - THD+N (1 kHz at -1 dBFS, min gain): -100 dB (.001%)
- SNR (A-weighted, min gain): 106 dB
  - Input impedance: 330 ohms
  - Common-Mode Rejection Ratio (60 Hz): > 80 dB

### Headphones

- Type: linear power amplifier
- Frequency Response: +0.0/-0.35 dB, 20 Hz - 20 kHz
- THD+N (1 kHz, max level)
  - 33 ohm load: -69 dB (0.035%)
  - 600 ohm load: -94 dB (0.002%)
- SNR (A-weighted): 117 dB
- Dynamic Range (A-weighted): 117 dB
- Stereo Crosstalk (1 kHz at -1 dBFS, 600 ohm load): < -100 dB

- Maximum Output Power: 500 mW
- Output impedance: 22 ohms
- Gain Range: 85 dB

### Phono Input

- RIAA Equalized phono input
- Frequency Response:  $\pm 0.5$  dB, 50 Hz - 20 kHz
- THD+N (1 kHz, 10 mV RMS unbal input): -76 dB (.015%)
- SNR (10 mV RMS unbal input, A-weighted): 90 dB
- Stereo Crosstalk (1 kHz at -1 dBFS): < -80 dB
- Maximum level:
  - Professional: 80 mV RMS
  - Consumer: 20 mV RMS
- Input capacitance: 220 pF
- Input impedance: 47K ohm

### Digital I/O

- S/PDIF
  - 2 in/2out coaxial (transformer coupled)
  - 2 in/3 out optical (software switched with ADAT)
  - AES/EBU or S/PDIF format (software controlled)
- ADAT
  - 8 channels, 24-bit @ 44.1/48 kHz
  - 4 channels, 24-bit @ 96 kHz (S-Mux compatible)
  - 2 channels, 24-bit @ 192 kHz
- Firewire
  - 400 Mbps 1394a port (6-pin)
  - Compatible with DV cameras, storage peripherals, etc.
- MIDI
  - 2 in, 2 out

### Synchronization

- Internal crystal sync at 44.1, 48, 96, 192
- External sample rate sync
  - ADAT
  - SPDIF (opt. or coax)
  - Word clock (75 ohm termination, switchable)
- SMPTE LTC Timecode
  - Converts to/from longitudinal time code (LTC) to MIDI time code (MTC)
  - Regen, stripe, and conversion modes
  - 24, 25, 30 drop, 30 non-drop frames/sec
  - Compatible with 29.97 fps timecode
  - Input level: 0.5 – 4V p-p
  - Output levels: +4 dBu, -10 dBV (software selectable)
  - Input impedance: 10K ohm

## Package Includes

- E-MU® 1010 PCI card
- E-MU AudioDock M
- E-MU Sync daughter card
- EDI (E-MU Digital Interface) cable (3 meters)
- Sync cable
- Mini-DIN MIDI adapter cable
- Headphone splitter cable
- PC power cable
- Quick Start guide
- Operation Manual on CD-ROM
- Creative Professional software CD-ROM
  - Windows 2000 and XP Drivers
  - E-MU PatchMix DSP
  - E-MU E-DSP effects Library
- Audio software package on CD-ROM

## Minimum System Requirements

- Genuine Intel® Pentium® III or AMD® K6® class processor or higher operating at 500MHz or faster
- Intel®, AMD® or 100% compatible motherboard & chipset
- 128MB System RAM
- 500MB of free hard disk space for full installation
- Windows® 2000 SP 4, Windows® XP SP 1 or greater
- PCI 2.1 compliant slot for E-MU® 1010 PCI card
- Adjacent PCI slot for E-MU® sync daughter card
- CD-ROM or DVD-ROM drive required for software installation
- X VGA Video (1024 X 768)



## 1820 Specifications

### General Specifications

- Sample Rates: 44.1, 48, 96, 192 from internal crystal or externally supplied clock
- Bit Depth: 16 or 24 bits
- PCI Bus-Mastering DMA subsystem reduces CPU usage
- Zero-latency direct hardware monitoring w/effects

### Analog Line Inputs

- Type: servo-balanced, DC-coupled, low-noise input circuitry
- Level (software selectable):
  - Professional: +4 dbu nominal, 20 dBu maximum
  - Consumer: -10 dBV nominal, 6 dBV maximum
- Frequency Response: +0.0/-0.2 dB, 20 Hz- 20 kHz
- THD+N (1 kHz at -1 dBFS): -102 dB (.0008%)
- SNR (A-weighted): 111 dB
- Dynamic Range (A-weighted): 112 dB
- Stereo Crosstalk (1 kHz at -1 dBFS): < -115 dB
- Common-Mode Rejection (60 Hz): > 40 dB

### Analog Line Outputs

- Type: balanced, low-noise, 3-pole low-pass differential filter
- Level (software selectable):
  - Professional: +4 dbu nominal, 20 dBu (bal)
  - Consumer: -10 dBV nominal, 6 dBV max (unbal)
- Frequency Response: +0.0/-0.8 dB, 20 Hz- 20 kHz
- THD+N (1 kHz at -1 dBFS): -98 dB (.0013%)
- SNR (A-weighted): 112 dB
- Dynamic Range (A-weighted): 112 dB
- Stereo Crosstalk (1 kHz at -1 dBFS): < -115 dB

### Combo Microphone Preamplifier/Line Inputs

- Type: TFPro™ combination microphone preamp and line input
- Frequency Response: +0.8/-0.1 dB, 20 Hz - 20 kHz
- Stereo Crosstalk (1 kHz): < -120 dB
- Line Input:
  - Gain Range: -12 to +28 dB
  - Max Level: +17 dBV (19.2 dBu)
  - THD+N (1 kHz at -1 dBFS, min gain): -94 dB (.002%)
  - Dynamic Range (A-weighted, min gain): 100 dB
  - SNR (A-weighted, min gain): 100 dB
  - Input Impedance: 10K ohm
  - Common-Mode Rejection Ratio (60 Hz): > 40 dB
- Microphone Preamplifier
  - Gain Range: +10 to +50 dB
  - Max Level: -12 dBV (-9.8 dBu)
  - THD+N (1 kHz at -1 dBFS, min gain): -95 dB (.0018%)
  - SNR (A-weighted, min gain): 100 dB
  - Input impedance: 330 ohms
  - Common-Mode Rejection Ratio (60 Hz): > 80 dB

### Headphones

- Type: linear power amplifier
- Frequency Response: +0.0/-0.35 dB, 20 Hz - 20 kHz
- THD+N (1 kHz, max level):
  - 33 ohm load: -70 dB (0.032%)
  - 600 ohm load: -85 dB (0.006%)
- SNR (A-weighted): 112 dB
- Dynamic Range (A-weighted): 112 dB

- Stereo Crosstalk (1 kHz at -1 dBFS, 600 ohm load): < -100 dB
- Maximum Output Power: 500 mW
- Output impedance: 22 ohms
- Gain Range: 85 dB

### Phono Input

- Type: RIAA equalized phono input
- Frequency Response: +/-0.5 dB, 50 Hz - 20 kHz
- THD+N (1 kHz, 10 mV RMS unbal input): -76 dB (.015%)
- SNR (10 mV RMS unbal input, A-weighted): 90 dB
- Stereo Crosstalk (1 kHz at -1 dBFS): < -80 dB
- Maximum level:
  - Professional: 80 mV RMS
  - Consumer: 20 mV RMS
- Input capacitance: 220 pF
- Input impedance: 47K ohm

### Digital I/O

- S/PDIF
  - 2 in/2out coaxial (transformer coupled)
  - 2 in/3 out optical (software switched with ADAT)
  - AES/EBU or S/PDIF format (software controlled)
- ADAT
  - 8 channels, 24-bit @ 44.1/48 kHz
  - 4 channels, 24-bit @ 96 kHz (S-Mux compatible)
  - 2 channels, 24-bit @ 192 kHz
- Firewire
  - 400 Mbps 1394a port (6-pin)
  - Compatible with DV cameras, storage peripherals, etc.)
- MIDI
  - 2 in, 2 out

### Synchronization

- Internal crystal sync at 44.1, 48, 96, 192
- External sample rate sync
  - ADAT
  - SPDIF (opt. or coax)

## Package Includes

- E-MU® 1010 PCI card
- E-MU AudioDock
- EDI (E-MU Digital Interface) cable (3 meters)
- Headphone splitter cable
- PC power cable
- Quick Start guide
- Operation Manual on CD-ROM
- Creative Professional software CD-ROM
  - Windows 2000 and XP Drivers
  - E-MU PatchMix DSP
  - E-MU E-DSP effects Library
- Audio software package on CD-ROM

## Minimum System Requirements

- Genuine Intel® Pentium® III or AMD® K6® class processor or higher operating at 500MHz or faster
- Intel®, AMD® or 100% compatible motherboard & chipset
- 128MB System RAM
- 500MB of free hard disk space for full installation
- Windows® 2000 SP 4, Windows® XP SP 1 or greater
- PCI 2.1 compliant slot for E-MU® 1010 PCI card
- CD-ROM or DVD-ROM drive required for software installation
- XVGA Video (1024 X 768)



## 1212M Specifications

### General Specifications

- Sample Rates: 44.1, 48, 96, 192 from internal crystal or externally supplied clock
- Bit Depth: 16 or 24 bits
- PCI Bus-Mastering DMA subsystem reduces CPU usage
- Zero-latency direct hardware monitoring w/effects

### Analog Line Inputs

- Type: servo-balanced, DC-coupled, low-noise input circuitry
- Level (software selectable)
  - Professional: +4 dbu nominal, 20 dBu maximum
  - Consumer: -10 dBV nominal, 6 dBV maximum
- Frequency Response:  $\pm 0.05$  dB, 20 Hz- 20 kHz
- THD+N (1 kHz at -1 dBFS): -110 dB (.0003%)
- SNR (A-weighted): 120 dB
- Dynamic Range (1 kHz, A-weighted): 120 dB
- Stereo Crosstalk (1 kHz at -1 dBFS): < -115 dB
- Common-Mode Rejection (60 Hz): > 40 dB

### Analog Line Outputs

- Type: balanced, low-noise, 2-pole low-pass differential filter
- Level (software selectable)
  - Professional: +4 dbu nominal, 20 dBu (bal)
  - Consumer: -10 dBV nominal, 6 dBV max (unbal)
- Frequency Response:  $\pm 0.0/-0.35$  dB, 20 Hz- 20 kHz
- THD+N (1 kHz at -1 dBFS): -105 dB (.0006%)
- SNR (A-weighted): 120 dB
- Dynamic Range (1 kHz, A-weighted): 120 dB
- Stereo Crosstalk (1 kHz at -1 dBFS): < -115 dB

### Digital I/O

- S/PDIF
  - 2 in/2out coaxial (transformer coupled)
  - 2 in/2 out optical (software switched with ADAT)
  - AES/EBU or S/PDIF format (software controlled)
- ADAT
  - 8 channels, 24-bit @ 44.1/48 kHz
  - 4 channels, 24-bit @ 96 kHz (S-Mux compatible)
  - 2 channels, 24-bit @ 192 kHz
- Firewire
  - 400 Mbps 1394a port (6-pin)
  - Compatible with DV cameras, storage peripherals, etc.
- MIDI
  - 1 in, 1 out

### Synchronization

- Internal crystal sync at 44.1, 48, 96, 192
- External sample rate sync
  - ADAT
  - SPDIF (opt. or coax)

## Package Includes

- E-MU® 1010 PCI card
- E-MU 0202 I/O daughter card
- I/O card cable
- Mini-DIN MIDI adapter cables
- Quick Start guide
- Operation Manual on CD-ROM
- Creative Professional Software CD-ROM
  - Windows 2000 and XP Drivers
  - E-MU PatchMix DSP
  - E-MU E-DSP FX Library
- Audio software package on CD-ROM

## Minimum System Requirements

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- 128MB System RAM
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- Windows® 2000 SP 4, Windows® XP SP 1 or greater
- PCI 2.1 compliant slot for E-MU® 1010 PCI card
- Adjacent PCI slot for E-MU® 0202 I/O daughter card
- CD-ROM or DVD-ROM drive required for software installation
- X VGA Video (1024 X 768)