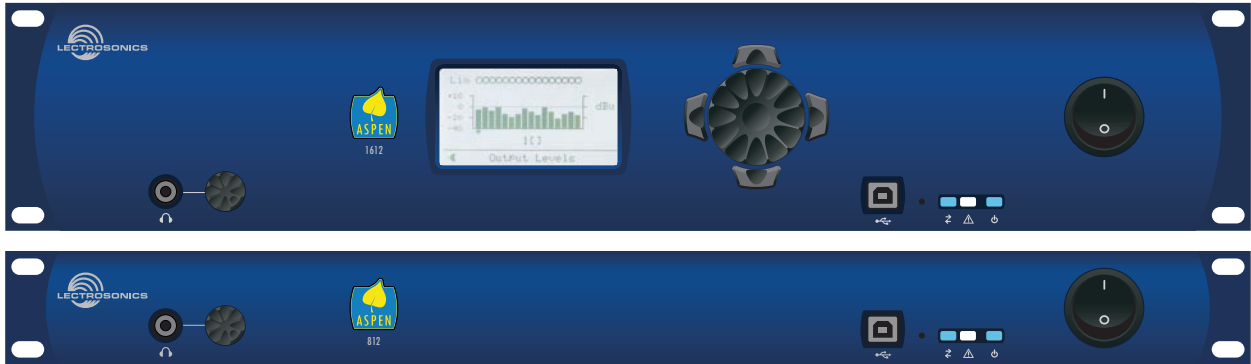


Mixer and Input Only Models



- Ultra low noise input preamps
- Full crosspoint matrix with 48 outputs
- Unlimited input expansion
- TCP/IP Ethernet addressable
- Seamless auto-mixing with PGA™ at the matrix crosspoints
- Simultaneous multi-point 3rd party and native control
- Ultra-low latency
- Automatic Master/Slave detection
- Single CAT6 interconnection carries data, audio and control signals

The variety of mixers available are created by combining “building block” printed circuit board assemblies:

- 8 input, 12 output mixer board
- 16 channel input only board
- 8 channel input only board

A board can be housed in a 1RU chassis, or combined with another board in a 2RU chassis to create the variety of models that are available. Two 8x12 mixer boards in one chassis creates the 16 input, 24 output model SPN1624. A 16 channel input only board combined with an 8x12 mixer in one chassis creates the 24 input, 12 output model SPN2412. 2RU models include a powerful LCD interface.

Multiple chassis of any 1RU or 2RU model can be stacked to expand the number of inputs and outputs needed for the system design. The ASPEN digital matrix provides a maximum of 48 total outputs, but there is no limit to the number of inputs that can be added to a system by stacking multiple units.

Input only units deliver outputs to the digital bus, so they are always used with a host mixer or conference unit to provide physical audio outputs.

When multiple units are stacked, Master and Slave units are automatically detected and configured. All data and audio from the Slave units in the system is gathered in the Master, so a single connection between a computer and the Master allows access to all units in the stack. The throughput latency of all audio inputs in a stack is automatically synchronized to maintain absolute signal phase at the audio outputs.

Mixer models include:

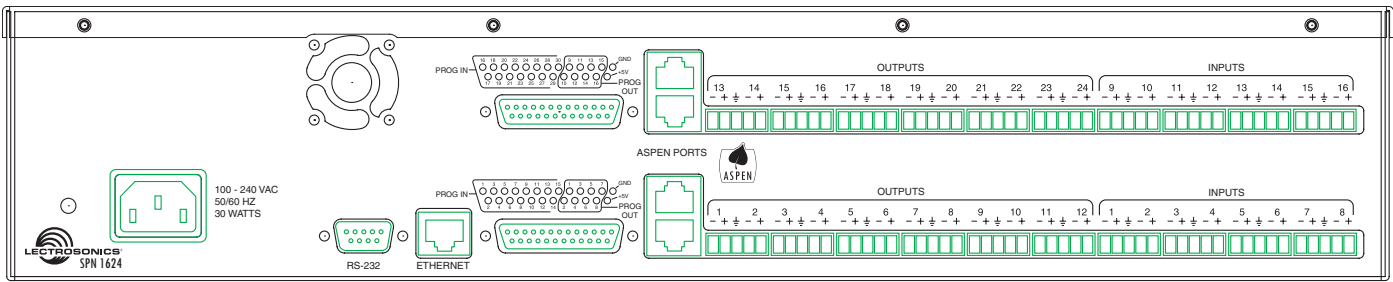
- SPN812 8 input, 12 output mixer, 1 RU
- SPN1612 16 input, 12 output mixer, 2 RU
- SPN1624 16 input, 24 output mixer, 2 RU
- SPN2412 24 input, 12 output mixer, 2 RU

Input only models include:

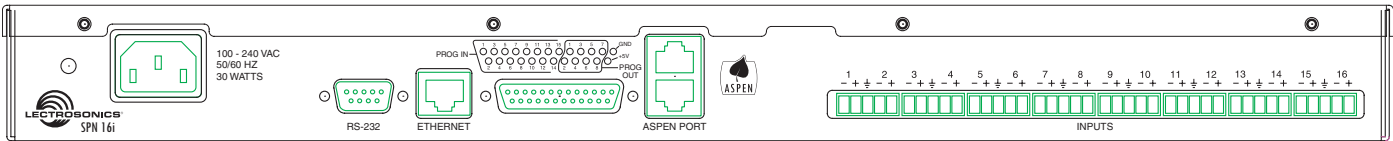
- SPN16i 16 channel, 1 RU
- SPN32i 32 channels, 2 RU

All models fully support the 48 outputs provided by the digital matrix, regardless of how many physical outputs are present on the rear panel. Any physical output can deliver the signal from any output in the matrix.





The model SPN1624 houses two 8x12 mixer boards in a 2RU housing.



The model SPN16i houses a single input only board

Specifications

Audio inputs

All inputs are digitally programmable-gain microphone to line level differential inputs. Either side can be grounded or left floating. The cable shield shall be connected to ground.

Max. input level:	20 dBu
Gain:	0 dB to 56 dB, programmable in 8 dB steps (the analog gain is automatically selected by selecting the input gain)
Input impedance:	8 k Ω differential mode, 2 k Ω common mode
Phantom voltage:	48 V
Dynamic range:	102 dB
Ein:	-127 dBu (20Hz – 20kHz, unweighted)
THD + noise:	0.01%

Audio outputs

All outputs are floating transformerless differential outputs. Either side can be grounded or left floating. The cable shield shall be connected to ground.

Nominal level:	0 dBu, channels 1-8 0 dBu, -20 dBu, -40 dBu, channels 9-12
Headroom:	20 dB
Output impedance:	< 50 Ω , all outputs, at all attenuator settings
Dynamic range:	105 dB
THD + noise:	0.01%

Latency

Single-board:	64 audio samples = 1.333 ms
System:	64 + 6 * (total number of boards – 1) audio samples = 1.333 + 0.125 * (total number of boards – 1) ms

Monitor output (1/4" headphone jack)

Signal:	any of the 48 final mixes
Output power:	50 mW (<50 ohm impedance recommended)

Filters

All filters, including the noise reduction filter (NRF), have zero processing delay.

Noise reduction filters:	Adjustable 6 to 35 dB on every input
Tone control stages:	4 per input channel
Parametric EQ stages:	8 per output channel
ADFE:	8 per input channel Configurable as Static or Dynamic

Filter types

Low Pass: Butterworth (6, 12, 18, 24 dB/octave)
Bessel (6, 12, 18, 24 dB/octave)
Linkwitz-Riley (12, 24 dB/octave)
Additional parameters: frequency [Hz]

High Pass: Butterworth (6, 12, 18, 24 dB/octave)
Bessel (6, 12, 18, 24 dB/octave)
Linkwitz-Riley (12, 24 dB/octave)
Additional parameters: frequency [Hz]

Low Shelving: Butterworth (6, 12, 18, 24 dB/octave)
Bessel (6, 12, 18, 24 dB/octave)
Additional parameters: frequency [Hz]
boost/cut [dB]

High Shelving: Butterworth (6, 12, 18, 24 dB/octave)
Bessel (6, 12, 18, 24 dB/octave)
Additional parameters: frequency [Hz]
boost/cut [dB]

Peaking EQ (parametric) Parameters: frequency [Hz]
bandwidth [octave]
boost/cut [dB]

Internal Signal Generator:

White noise: Parameter: level [dBu]

Pink noise: Parameter: level [dBu]

Tone (sine wave): Parameters: level [dBu]
frequency [Hz]

Swept sine: Sweep modes: single sweep
continuous sweep
Sweep Waveform: sawtooth (up or down)
triangle
Sweep rate: linear
logarithmic
Parameters: start frequency [Hz]
stop frequency [Hz]
level [dBu]
sweep time [sec]

