

XFAD SIGNAL-PROCESSOR BOARD

AUDIO CROSSFADER BOARD

- System-independent fades
- 8-in-8 mixer
- Configurable, for example, as four mono or two stereo faders
- Fadeover time: 40 ms to 2,600 s (more than 40 minutes)
- User-definable crossfade curves
- Adjustable output level
- Requires Matrix 5 software or later

Made for everyday use: With routing systems, switching between signal sources is commonplace. However, it is often desirable to seamlessly fade from one signal to another, for example, in control rooms. Conventional solutions based on mixing consoles or freely configurable DSP boards are expensive, and their operation error-prone. The low-cost XFAD board was developed from scratch for this application and is designed for simple operation. For this purpose, the board not only features a signal processor but also a control processor that performs crossfades automatically and independently of the system.

Stored crossfades can be triggered by various freely definable events, for example, by switching relays or enabling crosspoints.

AUDIO PROCESSING

The board provides eight inputs that can be freely routed to eight outputs using the internal mix matrix. All inputs feature separate attenuators with an adjustment range of 100 dB (plus mute) for flexible fades. The high resolution step-width of 0.5 dB allows for precise settings. When performing fades, the board actually uses an even better internal resolution of 0.125 dB to prevent zipper noise.

The levels of all outputs are independently adjustable. The setting range of -63 to +30 dB supports extensive level changes. Phase inversion is also available for each output.

The hardware resources implemented on the board allow, for example, four separate mono crossfaders or two separate stereo crossfaders to be set up.

CROSSFADE CURVES

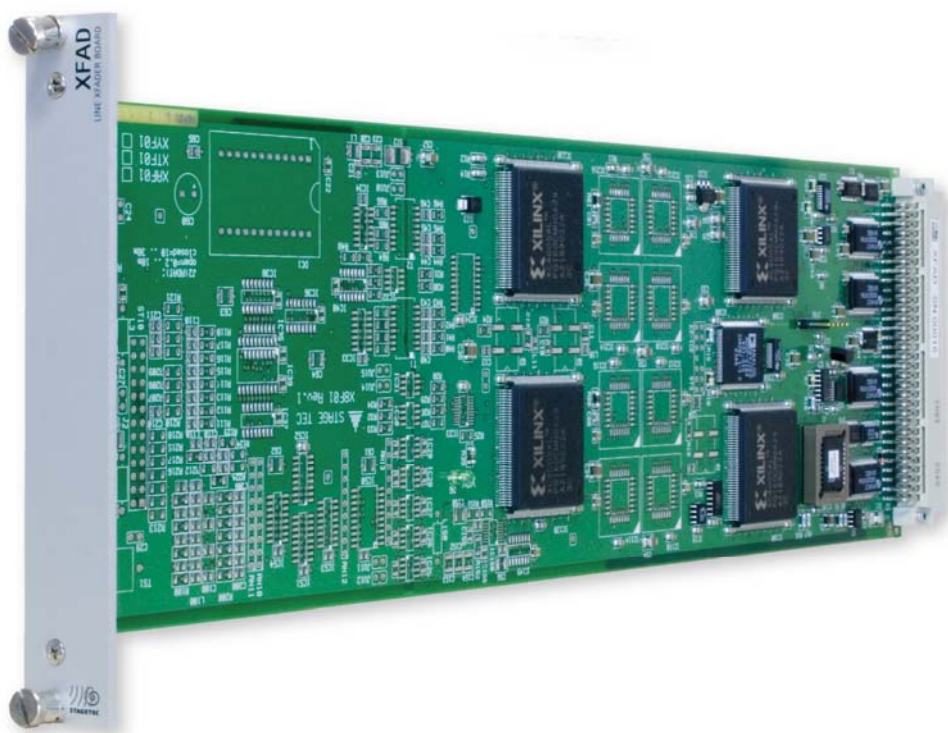
The fades are carried out autonomously on the XFAD board. The board provides eight different preset crossfade curves. The curves are defined by 64 base points. Thus, not only linear or logarithmic but also creative user-defined curves can be configured – for example, curves between base points are interpolated with linear dB characteristic and aural compensation.

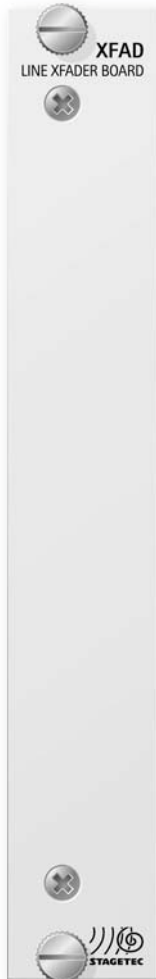
The crossfade time can be set over a wide range – from 40 ms to 2,600 seconds – depending on the software. All fades can be triggered individually or in sync.

The hardware allocation of crossfade curves to attenuators is freely selectable.

CONFIGURATION

The board configuration – i.e. the setup of fadeover curves and hardware allocation – is only performed once, using special service software, so the board (or its functionality) is largely transparent to the user.





XFADoI SPECIFICATIONS	
	The specifications provided below are in part software-dependent and may vary depending on the firmware version. They describe the hardware features of the board.
Audio data	24 bits, NEXUS audio-data format
Sample rates	44.1, 48 kHz (system-specific)
Features	DSP board for audio-signal crossfades; 8 crossfade curves with 64 base points each; dB-linear interpolation between the base points; fade times: 40 ms to 2621 s, software-dependent; clipping recognition
Inputs	8 (NEXUS bus) crossfade attenuation: -100 to 0 dB (adjustable in 0.5-dB steps) plus muting
Outputs	8 (NEXUS bus) output level individually adjustable within -63 to +30 dB in 1-dB steps (plus muting) for each output phase inversion individually selectable for each output
Matrix	8 in 8, mixing