

# DIGITAL-AUDIO COMPONENTS

## XAF ADAT I/O BOARD

### 8-CHANNEL ADAT I/O BOARD

- 8 channels
- Combined I/O board
- DSP built-in
- Output-signal re-quantizing to 16 or 20 bits with dithering and noise shaping
- I/O sample-rate converter (option)

The XAF board provides 8 inputs and 8 outputs for the ADAT 8-channel format used, for example, by digital tape machines.

The inputs and outputs of the board can optionally be equipped with sample-rate converters and can therefore handle asynchronous signals. All converters can be disabled together using the control program.

The DSP is a standard feature allowing for audio corrections with high quality. For example, the input level can be adapted to the required recorder headroom, and phase inversion allows »reverse-polarity« signals already at the inputs of the audio network to be corrected.

#### SYNCHRONISATION

Sample-rate converters for connecting asynchronous signals can be incorporated on request. Audio with rates between 40 and 50 kHz can be applied.

In addition, the board includes a quartz-controlled generator producing a 44.1-kHz or 48-kHz wordclock. Accuracy is better than 50 ppm.

#### SEPARATE SYNCHRONISATION

The output signal can be synchronised to the input signal of the board as required independently of the system clock. The necessary sample-rate converters also make the signal available on the NEXUS audio network.

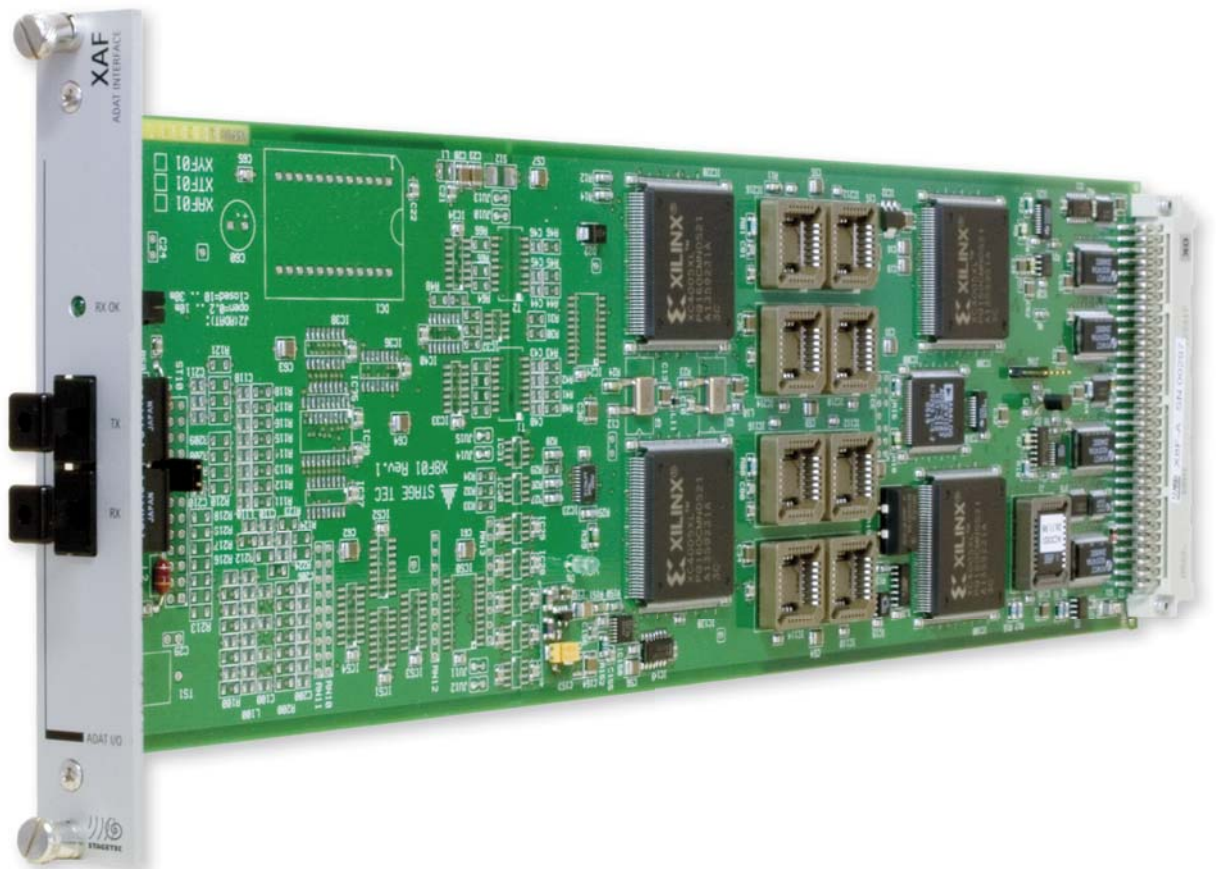
#### NOISE SHAPING AND DITHERING

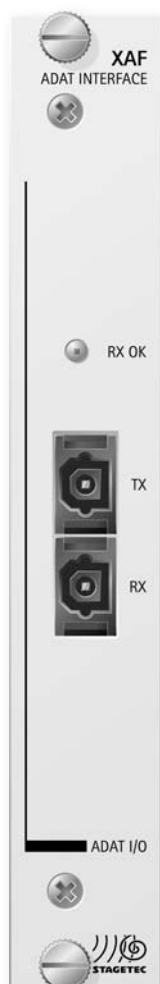
The XAF board allows for outputting the 24-bit NEXUS audio signal to external downstream units with a 16-bit or 20-bit resolution. Inaccuracies emerging from truncation errors leading to deterioration of the S/N ratio and THD&N are minimized by re-quantizing using a dithering algorithm. In addition, a selectively engaged noise-shaping function moves the noise energy up to frequency ranges less perceivable to the human ear.

The noise reduction achieved in the range below 1 kHz is approximately 15 dB and about 10 dB in the critical range around 3 kHz. Noise shaping is computed on the integrated signal processor on the basis of a 5th-order algorithm.

#### INDICATORS

The front panel of the board includes an LED indicating the status of the input signal.





XAF01 SPECIFICATIONS		
Data formats	ADAT	
Audio data	24, 20, 16 bits	
Sample rates	44.1 kHz, 48 kHz	
	32-kHz support optional	
	variable w / SRC	
Inputs	8 channels, TOSLINK optical ports	
Outputs	8 channels, TOSLINK optical ports	
Features (per input)	phase inversion, gain	
Features (per output)	transparent transmission of all ADAT-format user bits (with SRC disabled); noise shaping and dithering for 16-bit and 20-bit signals	
Indicators	PLL status (LED)	
Gain	adjustable input gain ( $\pm 20$ dB)	
Propagation delay	4 samples; (0.7 ms when using SRC)	
Power supply	Voltage	+4.75 to 5.25 V
	Current	500 mA
Operating conditions	Temperature range	0 to +50 °C / 32 to 122 °F
	Humidity	90% (max.), non-condensing
Storage conditions	Temperature range	-35 to +70 °C / -31 to 158 °F
	Humidity	90% (max.), non-condensing
Physical specifications	General	board for 19" module frame; 3 U, 340 mm / 13.39"
	Front panel	4 HP (20.02 × 128.5 mm / 0.8 × 5.06")
	Required space	1
	Weight	0.235 kg

VERSIONS	
XAF	version w / o SRC
XAF-SRC	version w / SRC (inputs and outputs)
A special XAF version supporting the 32-kHz sample rate can be supplied for ADAT-format digital audio signals.	