

DN9824 Loudspeaker Processor

2 x 4 Loudspeaker Processor

- Two inputs and four outputs, all electronically balanced, in 1RU.
- 24-bit Motorola processing and KT design provide dynamic range of 112dB.
- Flexible routing allows configuration for almost any system.
- Simple and intuitive front panel operation.
- Full PC control available via free proprietary software.
- Seven EQ filters per input, selectable between PEQ, hi/lo pass and hi/lo shelf.
- Full metering, rotary trim control and up to 900ms delay on both inputs.
- All outputs feature six bands of EQ, selectable as per input sections.
- Two full-time all pass filters on outputs for accurate phase correlation adjustment.
- All popular slopes and filter types available in crossover section.
- High quality compressor / limiter on all outputs.
- Full metering and LED indication of clip activity on all outputs.



The all-new DN9824 digital loudspeaker controller brings the legendary sound and reliability of Klark Teknik to the popular 2-input / 4-output format for the first time. Housed in a rugged 1RU enclosure, DN9824 features extensive and flexible crossover, equalisation and dynamic processing functions that make the unit ideal for numerous system-control applications. 24-bit Motorola processing and our unique proprietary design allows a dynamic range of not less than 115dB. Programming and operating the unit from the front panel is simple via the intuitive menu structure, and full remote control is also possible via free software.

Both electronically balanced inputs offer full-time LED metering, a rotary control for input trim and no less than seven equalisation bands. Each of these bands can be switched to operate as fully parametric, low / high pass or low / high shelving filters. Both inputs (or the sum of both inputs) can be routed to any output either via the matrix facility or in a number of preset configurations. The unit master delay is also located in the input structure, allowing up to 900ms of delay in 21 microsecond increments.

All four outputs are electronically balanced, and again feature up to 900ms of delay in 21 microsecond increments. The frequency dividing (crossover) function allows selection of all popular filter types and slopes up to 48dB / octave. The equalisation section provides six filter bands, switchable as per the input EQ, with the addition of 2 full-time all pass filters to allow accurate phase correlation adjustment. Phase inversion, rotary volume control, metering and a full-function compressor / limiter are also featured on all outputs.

The DN9824 is constructed to the same high standards which have made Klark Teknik the first choice in professional signal processing since 1974, and features the standard KT 5-year international warranty.



KLARK TEKNIK
SIGNAL PROCESSING BY DEFINITION

DN9824 Loudspeaker Processor

2 x 4 Loudspeaker processor

technical specification

Architect's and Engineer's Specification

The Loudspeaker Processor shall provide two input channels and four output channels with configurable routing in a standard 1U 19" rack mount chassis. Each input channel shall include: input gain control; five parametric EQ stages offering a ± 12 dB range for parametric, lo- and hi-shelf modes and 6dB/Oct and 12dB/Oct slopes for lo- and hi-pass filter modes; delay up to 900 milliseconds. Each output channel shall include: configurable routing; delay up to 900 milliseconds; low and high pass crossover filters with slopes of 6, 12, 18, 24dB per octave and options of Linkwitz-Riley, Butterworth and Bessel characteristics where appropriate; four parametric EQ stages offering a ± 12 dB range for parametric, lo and hi shelf modes, 6dB/Oct and 12dB/Oct slopes for lo- and hi-pass filter modes and 1st and 2nd order responses for the all-pass filter mode; a phase invert function; an output level control; a compressor; a limiter. All delay times shall be set in milliseconds and microseconds, or in distance units (metric and imperial) with a temperature correction facility.

Each Loudspeaker Processor shall meet or exceed the following performance specifications:

Frequency response	+0/-0.5dB (20 Hz to 20 kHz)
Distortion @ +8 dBu:	<0.01% (20 Hz to 20 kHz)
Dynamic Range:	>112dB (20Hz to 20kHz unweighted)

Options for the audio control parameters shall be presented on a liquid crystal display and shall be selectable by six front panel control buttons and shall be altered by a continuous rotary controller. User memories shall be provided for setup storage. A security lock out system shall be available, including a user defined code number. Each input shall have a gain control and meter and each output shall have an attenuator control and meter, for system matching. Output levels can also be individually adjusted from within the software and levels recalled as part of the user memories. A MIDI interface shall be provided as standard. The delay line shall also be capable of being controlled remotely by a PC via an RS-232 port. All audio connections shall be via XLR style connectors. Inputs and outputs shall be electronically balanced and there shall be an option for input transformer isolation. The unit shall be capable of operating from a 90V to 250V a.c., 50/60Hz, power source. The Loudspeaker Processor shall be the Klark Teknik DN9824 and no alternative option is available.



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Tel: +44 (0) 1562 741515
Fax: +44 (0) 1562 745371
USA Tel: +1 800 392 3497

Inputs Type Impedance (Ω) Balanced Unbalanced Maximum level	Two Electronically balanced (Pin 2 Hot) 20k 10k + 21dBu
Outputs Type Source impedance Maximum level	Four Electronically Balanced (Pin 2 Hot) >100 Ω +21dBu into > 2k Ω
Performance Frequency response* Distortion @ +8 dBu* Dynamic range* (*20Hz to 20kHz unweighted)	+0/- 0.5dB with all filters and EQ flat <0.01% >112dB
Input Processing (per channel) Input gain Master EQ 1-7**	+6dB to $-\infty$, under front panel control Parametric EQ Mode Boost/cut: (12 dB in 1 dB steps Q: 0.4 to 20 Hi-Shelf/Lo Shelf Filter Modes Boost/cut: (12 dB in 1 dB steps Slope: -6dB/Oct, -12 dB/Oct Hi-Pass/Lo-Pass Filter Modes Q: 0.4 to 2.0 (-12dB/Oct only) Slope: -6dB/Oct, -12 dB/Oct
Delay	0 to 900 milliseconds (308.03 m or 1014' 1" at 20(C) in 21 us steps
Output Processing (per channel) Routing	Route from inputs: IN1, IN2, IN1+IN2
Delay	0 to 900 milliseconds (308.03 m or 1014' 1" at 20(C) in 21us steps
Low pass filter**	Supported configurations are:- 12dB/Oct Peaking Butterworth (6dB/Oct, 12dB/Oct, dB/Oct, 24dB/Oct) Linkwitz-Riley (12dB/Oct, 24dB/Oct) Bessel (12dB/Oct, 18dB/Oct, 24dB/Oct)
High pass filter**	Supported configurations are:- 12dB/Oct Peaking Butterworth (6dB/Oct, 12dB/Oct, 18dB/Oct, 24dB/Oct) Linkwitz-Riley (12dB/Oct, 24dB/Oct) Bessel (12dB/Oct, 18dB/Oct, 24dB/Oct) Peaking Filter Q: 0.5, 0.6, 0.7, 0.8, 1.0, 1.2, 1.5, 2.0.
Channel EQ 1-6**	Parametric EQ Mode Boost/cut: (12dB in 1dB steps Q: 0.4 to 20 Hi-Shelf/Lo Shelf Filter Modes Boost/cut: (12dB in 1dB steps Slope: -6dB/Oct, -12dB/Oct Hi-Pass/Lo-Pass Filter Modes Q: 0.4 to 2.0 (-12dB/Oct only) Slope: -6dB/Oct, -12dB/Oct
Phase correction filters (x2)	All-Pass Mode Q: 0.4 to 2.0 Response: 1st Order, 2nd Order
Phase invert	Normal/invert
Output gain	0 dB to $-\infty$, under front panel control
Compressor	Threshold: +21dBu to - 9dBu in 1.0dB steps Ratio: 1:1, 1.4:1, 2:1, 4:1, 8:1 Attack: 0ms to 99ms Release: 50ms to 999ms
Limiter	Threshold: +21dBu to - 9dBu in 1.0dB steps Release: 50ms to 999ms
Mute	On/Off
Power Requirements Voltage / Consumption	90 to 250V a.c @ 50/60Hz / 20watts
Dimensions Width Height Depth	483mm (19 inch) 44mm (1.75 inch) 374 mm (14.72 inch)
Weight Nett Shipping	5kg 7kg
Terminations Audio inputs/outputs MIDI RS-232 Power	3-pin XLR 5-pin DIN 9-pin D-Type socket 3-pin IEC

Options
Transformer input balancing (must be specified with order).

**frequency range 20Hz to 20kHz in 21 steps per octave
Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.