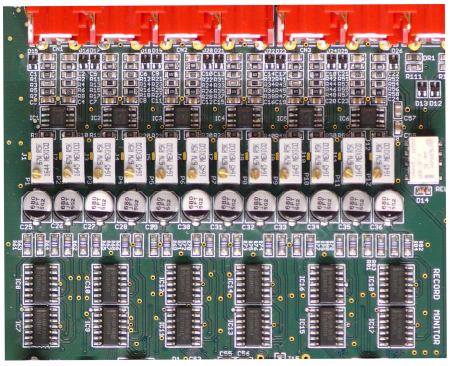
LAP-2.V4-S

ANALOGUE LINEAR PRE AMPLIFIER and PHONES AMPLIFIER

The LAP-2.V4-S is both an ultralinear pre-amplifier and headphone amplifier for the small recording studio as well as the high-end user who demands sound neutrality. The unit is equipped with a powerful headphone amplifier, additional ESD protection at all inputs and outputs, RK27 volume control with further optimised balance synchronisation and a power supply with increased current delivery capability. The integrated headphone amplifier is one of the best-quality developments in its class. The basic amplification of the 6 analogue stereo inputs can be adjusted separately internally.

This preamplifier was developed from our professional reference monitoring system for mastering studios and again sets standards in its class with its excellent sound characteristics. Particularly high input (2MΩ) impedances guarantee the lowest possible load on any signal source. The amplifier electronics of the unit are designed for extremely fast signal processing in order to present even the smallest signal details without distortion.

The predecessor of the LAP-2.V4-S has been used by test editors as a reference for neutral preamplifier tests since its release.



Electronic input matrix with trimmer bank

The LAP-2.V4-S offers the following functions:

1. RECORD signal selection from max. 6 audio signals
2. MONITOR signal selection from max. 6 audio signals
3. RECORD signal distribution 1 to 4
4. level adjustment to different unit outputs
5. impedance conversion from high to low impedance outputs.
6. Very powerful headphone output including mute relay
7. power-down mute relay on monitor outputs
8. saving the input selection after switching off the unit
9. muting of the main outputs (monitor) possible

All 6 inputs are asymmetrical with gold-plated cinch sockets. Independent of the selection of a monitoring signal, one of the 6 signal sources can be selected as an overdubbing signal (recording router). This recording signal is applied to 4 pairs of cinch sockets simultaneously.

Each input can be switched to each output. The LAP-2.V4-S J with adjustment opening enables a channel-separated adjustment of the input level of each singlel input to differently "loud" device outputs. Each input can be selected directly. This means that different signal sources can be compared with each other in milli-seconds speed. The input switching in the unit is done electronically (contactless) and is crack-free with unmodulated signal sources. This technology is very durable and reliable, so that no contact problems or deterioration of the audio quality, as with conventional concepts, have to be expected during the unit's lifetime.

The LAP-2.V4-S can be used as a stand-alone amplifier with active speakers or an additional power amplifier (version LAP-2.V4-Sa) or as an extension of the inputs of existing stereo amplifiers (LAP-2.-V4-Sb). 134 dB dynamic range (A-weighted 137 dB), excellent frequency and phase response from <1 Hz to >1 MHz as well as lowest non-linear THD distortion of < 0.00003% (< -130 dB) in the important midrange are unique and allow a truly neutral assessment of the selected signal source.

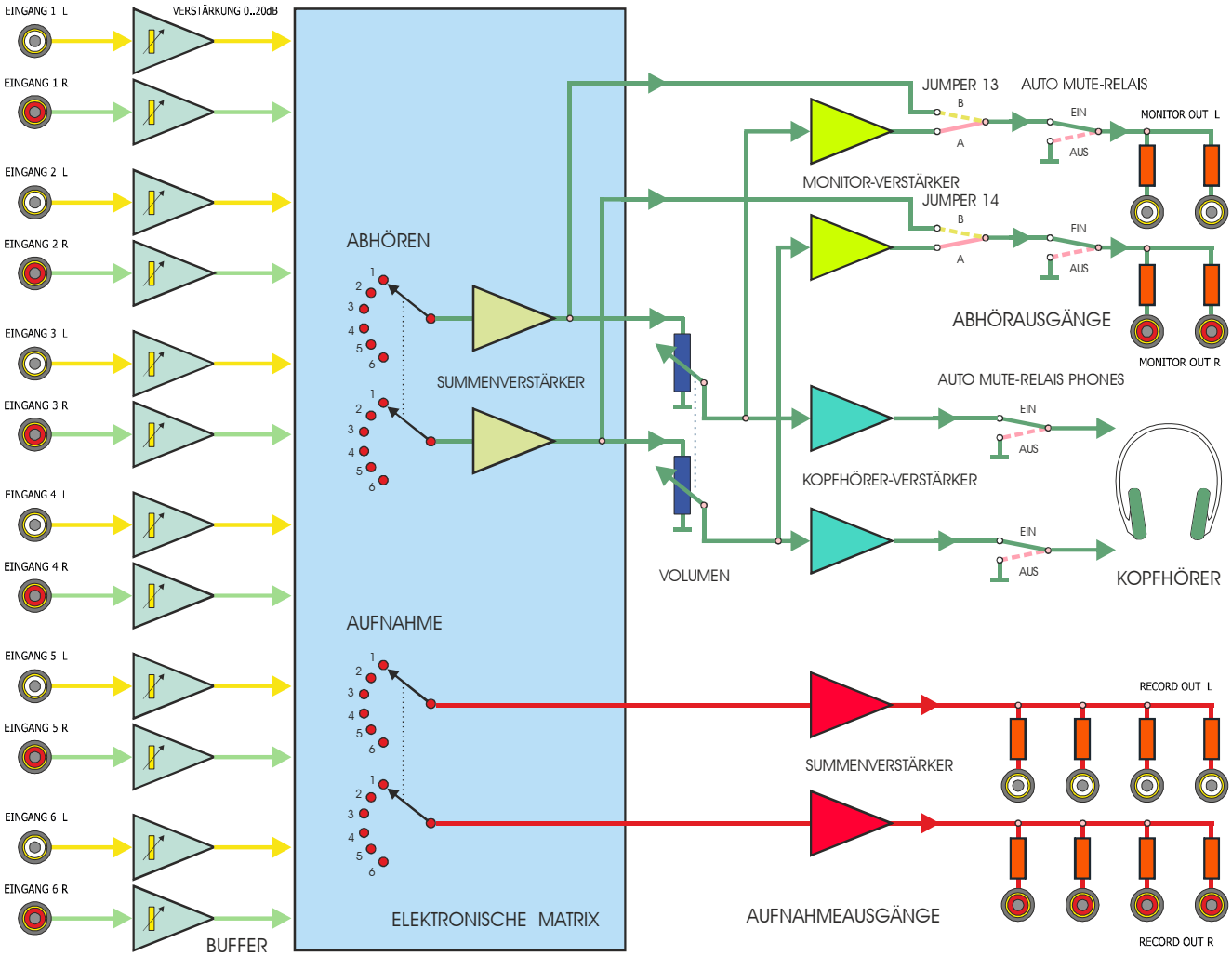
All analogue input signals reach the active matrix via buffer input stages. These buffers have particularly fast high-impedance inputs with the lowest possible noise. Even the weakest audio signals are thus amplified without distortion. This technology is also a prerequisite for the excellent channel separation of the inputs of typically 120 dB at 1 kHz.

Even signal sources with very high levels of up to +25 dBu, as is common in professional applications, are processed cleanly. Low-impedance output amplifiers ensure low-loss signal transmission of all recording and monitoring signals.

The monitor and record paths can be switched off separately. The new very high-quality headphone amplifier eliminates the need for an external headphone amplifier.

Overdubbing selection (Record) :

With the RECORD-ROUTER, a signal can be selected as an overdubbing source, independent of the listening selection. This signal appears on all cinch sockets "RECORD OUT" and enables analogue copies in high quality to several devices simultaneously without using a patch panel.



The internal power supply is provided by a miniaturised laboratory power supply unit which ensures ultra-low-noise and stable supply voltages without a fixed voltage regulator.

The unit is optionally available with an adjustment opening in the lid for quick level adjustment of differently "loud" units (LAP-2.V-S J).

The front panel is available in various optical variations and can be subsequently replaced by the user. Possible options are: white coated (like RAL-7035), anodised in black, blue, Bordeaux red, silver and gold, as well as brass polished and gold-plated or chrome-plated fronts.

The LAP-2.V4-S is normally supplied as a monitoring amplifier with common volume control of headphone path and monitor output. For special applications, the unit is also available as LAP-2.V4-Sb with fixed monitor output level, similar to the record path. In this version, the volume control only affects the headphone output. The output of the headphone amplifier has been increased by 40... 800 %, depending on the headphone impedance.

Special version LAP-2.V4-S MR with coupled selection of the monitor and record path available as an option.

The monitor signal is then available at all 4 recording outputs simultaneously, depending on the volume control at the main output 1+2 and also independently of the volume control.

A extract from technical data :

Frequency response :	2 Hz...200 kHz < ± 0,3 dB 6 Hz ...100 kHz < ± 0,01 dB
Phase response :	20 Hz ...20 kHz ± 2° absolutely 20 Hz ...20 kHz ± 0,1° relatively
THD non-linear distortion 1 kHz +6 dBu :	< 0,00003 % (< -130 dB) < 0,00003 % (< -130 dB) at +18 dBu Level
THD+N non-linear distortion + noise 1 kHz +6 dBu :	< 0,00018 % -115 dB (BW 22 kHz), at 20 Hz..20 kHz < 0,00035 % (BW 80 kHz)
Input/input crosstalk attenuation :	1 kHz > 118 dB 10 kHz > 102 dB
Noise level MONITOR-OUT unweighted :	-109,0 dBu (BW 20 Hz..22 kHz eff. Gain = 0,0 dB, Volume to max.)
Dynamic MONITOR OUT (S/N) volume max. (0dB):	137.0 dB "A" weighted rms, 134 dB CCIR 468 unweighted 20 Hz-22 kHz
Maximum input and output level :	+25,0 dBu !
Headphone amplifier max. power at 1 kHz :	2x 1600 mW /62 Ω (THD+N -121 dB or 0.00009% at full power)
Dimensions and weight :	210 mm x 172 mm x 42 mm (width x depth x height), 1,5 kG

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