Features

- True balanced working principle
- Dual mono design, channels are galvanic isolated from each other and from control circuitry as well
- Triple balanced (XLR) input pair
- Double balanced (XLR) output pair can be independently enabled or disabled
- Pin1 and shell connection disconnected in case of the not used input and output channels
- 2 cascade attenuator stage with precision resistor string network and analog CMOS switches
- Each stage optimized for zero thermal distortion
- Big red color Dot-Matrix display
- Adjustable display brightness and time
- From input until output DC coupled, no AC coupling capacitor, fully balanced DC servo
- Output DC protection and muting during turning on-off
- Class-A output driver circuitry
- Low noise and high input & load regulation internal linear power supply
- 3 years manufacturer's warranty

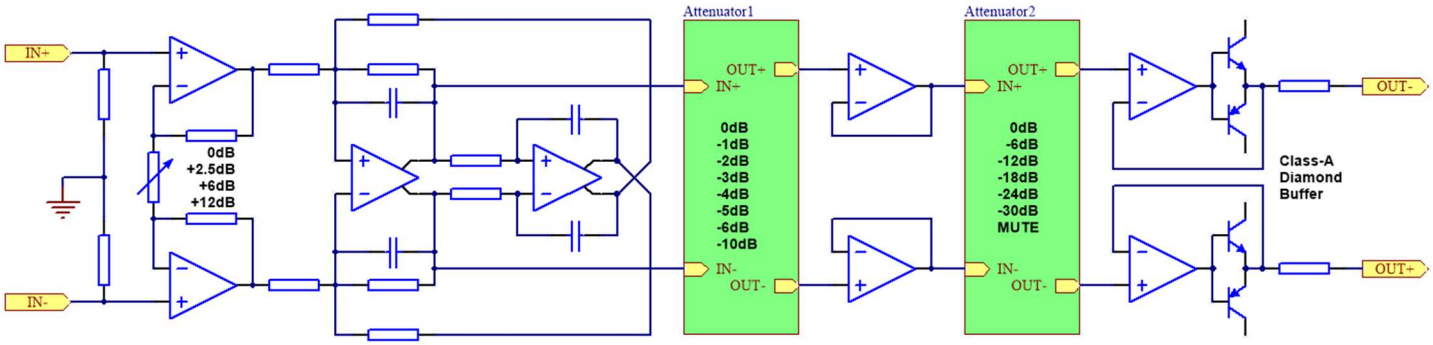
Components

- Gold-plated signal connectors
- Precision thin-film resistor network, and very stable Class I C0G multilayer chip capacitors in the audio path
- Extruded aluminum enclosure black anodized
- Burgundy front plate and high gloss black backplate

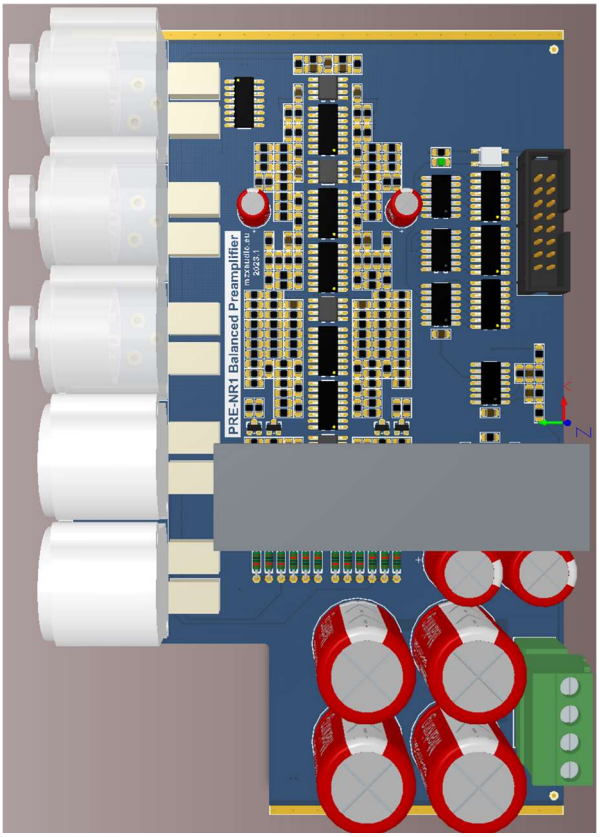
Description

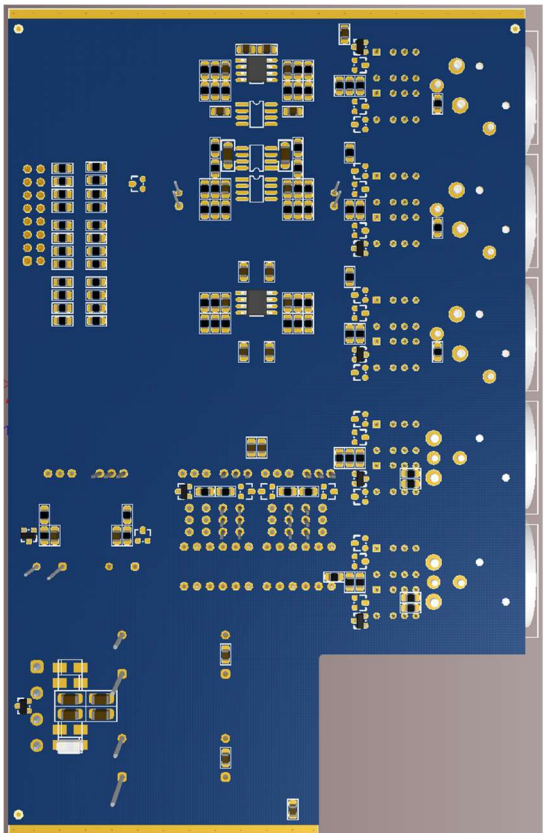
The PRE-NR1 symmetrical preamplifier applies a state-of-the-art level and truly balanced circuitry to achieve exceptionally ultralow noise and distortion. The preamplifier's left and right channels take place on dedicated PCBs and are galvanically isolated from each other and the shared control board. In the input stage, the adjustable gain can be matched to different input source levels. The fully differential amplifier stage is equipped with a DC servo to remove the DC component. The volume adjustment happens in two independent attenuator stages these are based on precision low ohmic resistor strings and CMOS multiplexers, so there isn't a moving part and glitch during volume changing. Thanks to the low impedance of attenuators the noise floor is very low. Each attenuator consists of only identical value resistors that allow to share dissipation of the resistors equally and finally cancel the thermal distortion and the effect of the resistor's voltage coefficient. The last stage is a composite amplifier, which consists of an operational amplifier and a diamond buffer made of discrete transistors, ensuring the powerful drive of the output and the connected signal cable. Very carefully designed 4 layers improved FR4 printed circuit board (PCB) with both sides small surface mounted components (SMD) ensures minimal signal path and optimal layout.

Simplified Block Diagram



PCB 3D view (one mono channel)





SPECIFICATION		
INPUT	Connector	Neutrik NC3FAH XLR female, gold plated contact
	Differential impedance	2MΩ
	Common-mode imp.	500kΩ
	Optional gain	0dB / +2.5dB / +6dB / +12dB adjustable independently for each input
VOLUME	Full coverage range	52dB = +12dB…-40dB
	Attenuator	0dB…-40dB with 1dB steps + muting (except 4dB between -36dB & -40dB)
	Gain mismatch Ch1-Ch2	< ±0.05dB @ 20Hz…20kHz
FREQ. RESP.	Deviation	< ±0.05dB @ 20Hz…20kHz
Crosstalk		< -130dB @ 10kHz
SNR	SNR (0dB)	> 110dB @ $5V_{in}$ & 0dB volume
DISTORTION	THD	< 0.0002% @ $5V_{in}$ & 0dB volume
	THD+N	< 0.0004% @ $5V_{in}$ & 0dB volume
	IMD	< 0.01% and DFD2 < 0.0001%, DFD3 < 0.01%
	SMPTE IMD	< 0.001% and MD2 < 0.003%, MD3 < 0.003%
	DIM	< 0.01%
OUTPUT	Output voltage	$17V_{eff}$ maximum
	Output impedance	20Ω
	DC error	< 2mV typical
	Connector	Neutrik NC3MAH XLR male, gold plated contact
OTHERS	Front-panel display	Red Dot Matrix, visible area: 138 x 32 mm, resolution: 30 x 7 dots
	Dimension	170 x 93 x 226 mm [Width x Height x Depth] (with feet, without knobs)
	Weight	3.300 grams
ENVIRONMENT	Working temperature	-10 C° to +40 C°
	Working Humidity	20 to 90% RH, non-condensing
MAINS	Connector	Schurter IEC C14 inlet with integrated switch & fuse holder
	Voltage range	220-240 VAC
	Frequency	50/60 Hz
	Fuse	Schurter 1 AT (Time lag, slow), 20 x 5 mm, gold plated
	Power consumption	20W typical & 0.1W in standby
PACKAGING	Material	Corrugated paper and foam
	Box content	• PRE-NR1 True Balanced Preamplifier • Remote Controller • Mains power cable, Schuko Type E/F, C13, 3x0.75mm^2, 1.5m
	Dimension	240 x 150 x 390 mm [Width x Height x Depth]
	Weight	3.800 grams

Model encoding example: PRE-NR1-BBB