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PRE32 Design Brief, 3 pages



PRE32 pre-amplifier

The PRE32 is an upgradable audiophile pre-amplifier designed to match the Primare A34.2 and all Primare power amplifiers. It features the comprehensive OLED display and control parameters established by the EISA award-winning I32 integrated amplifier. The PRE32 is housed in a heavy gauge alloy steel chassis, and incorporates two pairs (L/R) of low-noise balanced XLR inputs and 4 pairs of RCA inputs. In addition there are two pairs of RCA outputs and a single pair of balanced XLR outputs, as well as a record output, RS232, trigger, IR and RF inputs. The option of an upgrade board offering MEDIA/streaming connections such as USB, iPod, LAN etc., is provided.

Audiophile Topology

All signal paths are fully balanced and as short as possible. All signal treatments (source selection, volume and channel balance trims) are performed purely in the analogue domain. Unbalanced inputs are converted to balanced signals by a conversion stage buffered by the excellent sounding Burr Brown OPA2134 op-amps and fed to volume and balance controls employing closely matched NJW1195 attenuators in a balanced configuration. Source selection is via high performance signal relays.

Balanced signal transmission means that two identical signal lines are used to carry the same signal with opposite phase. Any noise is common to both lines, is present in equal amounts and with identical phase. At the receiving end a (differential) receiver retains the opposite phase signals (music) and rejects the common phase ones (noise) leaving only the pure original signal. Balanced circuits therefore keep the signal as free as possible from interference.

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The four (L/R balanced) single-ended 16dB gain stage modules are fully separated. Each has its own proprietary PCB, incorporating a custom designed copper heat sink, which also acts as a shield. The gain module layout incorporates ultra-short signal paths and only the finest discrete components such as MOSFET transistors, MELF resistors and polypropylene capacitors. Active, well-balanced current sources are used instead of passive resistor networks.

The PRE32 is DC coupled from input to output. There are no capacitors in the signal path. Instead active DC servos are used to compensate for any DC present, ensuring that the outputs are always free from DC components.

All the front panel control components are kept well separated from the analogue part of the PRE32 by the front panel's intuitive design: the electronics are placed between the front panel and the main steel chassis.

Ultra low-power standby

The PRE32 incorporates a very low eco mode for standby. Power consumption is just 0.2W. In order to minimise high frequency components originating from the standby power supply (high performance switch-mode) when the PRE32 is in operation, the standby supply is switched off when the PRE32 is powered up, and a discrete linear power supply consisting of only the finest discrete power supply components and an R-core mains transformer, takes over.

Analogue and digital power supplies are kept well separated. For the analogue side a discrete ultra-fast voltage regulation circuit using discrete power transistors is used.

The power supply capacitor bank is large (25.000uF) and for lower ESR and best performance, is divided between many smaller capacitors.

These measures have produced extremely good THD+N and S/N ratio figures for the PRE32.

Upgradeable Design

A media upgrade will be available, which offers up to 24 bit/192 kHz streaming of files from Internet, NAS or PCs, as well as Internet radio content and also digital audio input from a range of devices including CD players, smart phones, personal players, sat boxes etc.

Easy User Interface

An easy set-up menu is available via the PRE32's graphical display, which is dimmable in four steps. The display auto-dims after a few seconds and returns to programmed brightness at the touch of a control. Set-up includes power-up volume, input re-naming (up to 6 characters), input disabling and trim function (volume and balance) for each input in steps of 1dB, as well as a surround processor bypass feature.

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Product specification PRE32

Analogue Inputs	2 pair XLR (L & R) 4 pair RCA (L & R)
Other In/outputs	RS232, IR in/out, Trigger in/out, RF.
Optional Media i/o module	Spec to follow
Input Impedance	15k Both RCA and XLR
Analogue Record Output	1 pair RCA (L & R)
Pre Output	2 pair RCA (L & R), 1 pair XLR (L & R)
Output Impedance	110 ohms
Frequency Response	20Hz – 100kHz -3dB
THD + N	< 0.003%, 20Hz – 100kHz, 0dB gain.
Signal to Noise	-115 dBV
Max in /out level	10Vrms
Gain	16dB
Power Consumption	Standby: 0.2W; Operate: 23W
Dimensions (wxdxh)	430 x 385 x 105mm
Weight	10.5 kg
Colour Options	Black and Titanium