

V10 amplifier

The amplifier is a full on tube-powered design with an impressive power output rating of 80 Watts/channel (8 or 4 Ohms, according to the output connectors chosen). As an exclusively line level design — as you have seen phono compatibility is handled externally by the matching G10 player — the G10R features five line inputs, one a tape circuit, with full remote control operation.

The V10 is a "Class A/B" design that employs a proprietary circuit architecture called SPPP (Single Primary Push Pull). One of the properties of the circuit is that it offers a full 100kHz operating bandwidth appropriate for SACD, but most of all it is intended to address the non linearities and asymmetries of push pull tube circuits, and in particular the "Class B" crossover artifacts which are inevitable when the two separate half cycles of the waveform, which are generated by different tubes in a non Class A design, are combined. A single-ended "Class A" circuit would have solved the same problem in a simpler, and arguably more elegant way, but at the cost of much less output power and vastly less electrical efficiency and inevitably much higher cost.

In addition, a single ended solution would not have allowed the designer to address the problem of stray inductance in the primary transformer output windings. SPPP uses only one DC feedback loop to set the 0V point of the amplifier, with no need for the half wave currents, and therefore no need for summing them in the output, which is a source of distortion. Because there is only a single primary transformer winding, there are no symmetry issues and less stray interference, and hence (say T+A) a cleaner output. The circuit design is inherently suitable for toroidal output transformers, which are inherently wider in bandwidth and suffer less from phase problems. Less negative feedback is required, and the frequency bandwidth can be extended to 100kHz (as noted earlier) without problems.

Again the key to the performance of the amplifier is sophisticated microprocessor control, which extends to most of the operational settings, such as voltage levels, overload margins, current flows, and even to operation of the quiet internal fan, whose running speed is controlled thermostatically. In addition the microprocessor mediates the start up process to ease the load on the tubes, and monitors long term operation, even the type of load connected, which has the effect of extending the effective lifetime of the tube set (up to 5000 hours is claimed), and warning when a change is required. Downsides? The electrical design is unusually complex, which is openly acknowledged by T+A, and the circuit requires a substantial tube complement (two ECC83, two ECL82, two ECC99, and four EL509/II), and 22 separate voltages have to be defined internally, which would be difficult to achieve at a reasonable cost by lesser manufacturers than T+A.

The stunning mechanical design mirrors that of the record player, and features steel 'platform', with sandwich construction chassis panels, and shock absorbing feet. Aluminum die-casting is used to shroud the massive toroidal transformers and mesh covers keep the tubes street legal.



V10 tube integrated amplifier

Type: tube stereo integrated amplifier

Output Power: 80 Watts/channel into 8/4 Ohms (110 Watts peak)

Frequency Response: 8Hz to 100kHz

Harmonic Distortion: <0.05% @ 1 Watt

Signal/Noise: >100dB

Channel Separation: 100dB

Inputs: four line level plus tape circuit

Features: High/standard valve bias voltage settings for low & high level replay

Weight: 25.8kg

Dimensions: 186 x 443 x 378 (HxWxD in mm)

Remote control - included

