

DEMOGRAF AUDIO

Reference Tube DAC

DAC with a solid-state output stage, tube stage optional — NOS multibit TDA1540, TDA1541, PCM63 and PCM1704, or the bitstream TDA1547

Made by Dmitriy Gubchenko. Every unit ships with a Manufacturing Record stating its country of origin and a bill of materials.

Sound

CD and Red Book streams — acoustic, vocal, jazz, classical

The Reference Tube DAC is one chassis built around one of five classic DAC chips — four multibit ones and the vintage Philips TDA1547 — each with its own name: Calliope (TDA1540), Persephone (TDA1541), Aphrodite (TDA1547), Artemis (PCM63) and Katerina (PCM1704). It takes CD-standard 16-bit / 44.1 kHz PCM natively, with no upsampling and no DSD, putting all its resources into rendering it as it is (the TDA1540 in Calliope is a 14-bit chip). Calliope is natural and organic, Persephone fast, Aphrodite dark and velvety, Artemis large-scale, Katerina strong in bass and attack. The stock output stage is solid-state; the optional tube output stage, with a 5Ts4M rectifier, takes the digital edge off the signal.

Compared with: Calliope · Persephone · Aphrodite · Artemis · Katerina

Materials & build

The chassis combines hardwood and metal; transformers are galvanically isolated.

- Input: S/PDIF coaxial
- Output stage: solid-state or 6Zh4 / EF14 / EL8 / AL4 / ML6
- Rectifier: 5Ts4M (5Y3 optional)
- Output 2 V, RCA; XLR optional

COMPONENT	MANUFACTURER	COUNTRY OF ORIGIN
DAC chip TDA1540 / TDA1541 / TDA1547	Philips	Netherlands
DAC chip PCM63 / PCM1704	Burr-Brown	USA
Output tubes 6Zh4 (option)	NOS, selected	US / EU / UK (NOS) / Other Vintage
Rectifier 5Ts4M	NOS, selected	US / EU / UK (NOS) / Other Vintage
Power transformers (galvanically isolated)	Demograf Audio (custom-wound)	or analog by Hashimoto / Tango / Tamura

Signal path

Input **S/PDIF** → Converter **Multibit NOS / vintage DAC chip** → Output stage **Solid-state / tube** → Output **RCA · 2 V**

Specifications

Device type	Reference Tube Digital-to-Analogue Converter
Digital inputs	S/PDIF Coaxial
Output voltage	2.0 V (Customisable upon request)
Analogue outputs	Unbalanced RCA (Optional: Balanced XLR)
Frequency response	10 Hz – 20 kHz
Supported formats	Native PCM 16-bit / 44.1 kHz (Red Book) via S/PDIF
DSD support	None (pure PCM: NOS on the four multibit versions; the vintage TDA1547 bitstream chip in Aphrodite)
Available models	Calliope (TDA1540) / Persephone (TDA1541) / Aphrodite (TDA1547) / Artemis (PCM63) / Katerina (PCM1704)
Rectifier tube	5Ts4M (5Y3 — optionally)
Output stage tubes	Optional tube stage: 6Zh4, EF14, EL8, AL4, ML6 or others (stock output is solid-state)
Transformers	Galvanically isolated
Internal wiring	Proprietary “RareCoreFusion” Alloy wire (other options available)
Special features	Ground Lift Switch (Defeatable Grounding)
Chassis materials	Premium Hardwood & Precision Metal
Mains	100 / 120 / 230 V — set at order time, plug to match (NEMA, Schuko, BS 1363 / type G)
Weight	From 10 kg / 22 lb
Dimensions (W × D × H)	From 430 × 450 × 120 mm
Origin	Made in Kazakhstan by Dmitriy Gubchenko

Options

DAC model

- Calliope — Philips TDA1540 (natural, organic presentation)
- Persephone — Philips TDA1541 (fast, articulate presentation)

- Aphrodite — Philips TDA1547 (dark, velvety and melodic)
- Artemis — Burr-Brown PCM63 (large-scale, weighty presentation)
- Katerina — Burr-Brown PCM1704 (strong bass, detail and attack)

Output stage

- Solid-State Output
- 6Zh4 Tube Output
- AL4 Vacuum Tube Output
- EL8 Vacuum Tube Output
- EF14 Vacuum Tube Output
- ML6 Vacuum Tube Output
- Tube-Switching Module Upgrade

Rectifier tube

- Solid-State Rectifier
- 5Ts4M
- 5Y3
- Other Type (on request)

Output voltage

- 2 V
- 4 V
- Other (on request)

Component upgrades

- Premium Capacitors (Duelund, Mundorf, Miflex etc.)
- Custom Transformers & Chokes
- AMRG Resistors & Cardas Wiring Kit
- Top Connectors Suite
- Multi-DAC Topology
- Upgraded External Power Supply (PSU)
- Vintage Tubes
- ALPS Volume Control
- Demograf Audio Swiss-Stepped Pre-Amp
- Integrated Class-A Amplifier
- Integrated Class-D Amplifier
- Integrated Tone Control Block Module / Filter

- One additional Digital S/PDIF Coaxial Input
- One additional Digital BNC Input
- One additional Digital AES/EBU Input
- One additional Master Clock Input
- Raspberry Pi 5 Streamer inside
- One additional Digital TOSLINK (Optical) Input
- One additional Analogue RCA Output
- One additional Analogue XLR Balanced Output
- Additional Reserve Matched Pair of low-noise Tubes

Mains inlet, outlets & contacts

- AC Input: Standard Spec — IEC C14 Chassis Input
- AC Input: Heavy-Duty Spec — IEC C20 High-Current Inlet
- AC Output: European Standard — Schuko (Type F)
- AC Output: US / Japan Standard — NEMA 5-15R (Type B)
- AC Output: British Standard — BS 1363 (Type G)
- AC Output: Universal Interface — Direct IEC C13 Outlets
- Contacts: Pure Copper Unplated (Organic & Balanced Tone)
- Contacts: Gold Plated e.g. Furutech FI-09(G) (Warmth & Rich Midrange Texture)
- Contacts: Rhodium Plated e.g. Furutech FI-09(R) (Fast Transients & Fine Detail)

Finish & chassis

- Standard configuration
- Priority build (+50% of the price)
- Precision-Milled Metal Chassis (CNC milling)
- Contoured Bent-Metal Enclosure
- Exotic Hardwood Chassis
- Glass-Integrated Aesthetic
- Premium Wood Inlays & Accents
- Solid-Billet Metal Enclosure
- Advanced Galvanic Finishing
- Custom Dimensions & Form Factor
- Parameter Status Display
- Multifunction Remote Control Suite

Regional version

- 230 V — Schuko plug (Europe)
- 120 V — NEMA plug (North America)
- 100 V — NEMA plug (Japan)
- 230 V — BS 1363 / type G plug (UK · Middle East)

Photographs













Questions & answers

Does the Reference Tube DAC use tubes?

Stock output is solid-state; a tube output stage on 6Zh4, EF14, EL8, AL4 or ML6 can be chosen, with a 5Ts4M kenotron rectifier. Tubes are selected and matched before fitting.

How is the Reference Tube DAC serviced?

Each unit ships with its own measurement report. The circuit is kept simple and serviceable, and Demograf Audio gear is serviced for as long as parts exist.

How is it delivered?

Shipping and insurance are paid by the buyer and shown as a separate line in your quotation. Every unit is packed for long-distance transport in heavy-duty flight cases and a wooden crate.

Which mains voltage and plug?

Each piece of gear is built for 100 V, 120 V or 230 V mains with the matching plug (NEMA, Schuko or BS 1363 / type G). The voltage is fixed at order time, so tell us where the unit will be used.

How long does the Reference Tube DAC take to build?

Build time is six months or more from the queue deposit, depending on the configuration and the queue; delivery takes from one month after completion. The atelier builds seven instruments a year. A priority build is available for an extra 50% of the price: your unit is moved ahead in the build queue.

Ordering

- Built individually, to order. A 50% deposit places the unit in the build queue.
- Build time is six months or more, depending on the configuration and the queue.
- One-year warranty; after it, paid repair. Every unit ships with its own measurement report.
- Configuration, prices in your currency and the seller for your country: demografaudio.com
- E-mail: shop@demografaudio.com.