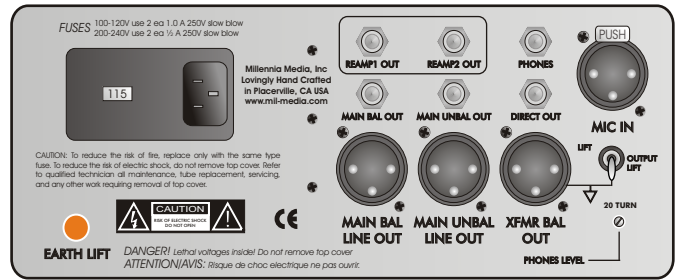
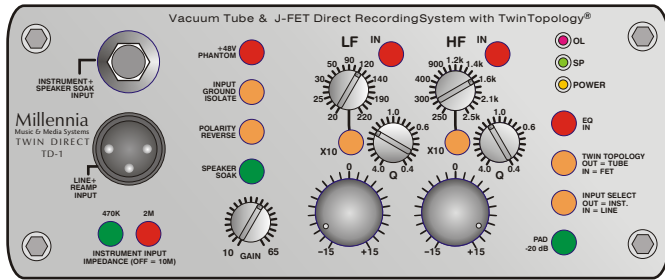


Millennia Media[®]

TD-1 TWIN DIRECT

VACUUM TUBE & SOLID
STATE RECORDING
CHANNEL with DI, EQ,
HV-3 and REAMP[®]



- TWIN DI AMPLIFIERS — DUAL TRIODE VACUUM TUBE -or- DISCRETE FET SOLID STATE
- TWO-BAND FULLY PARAMETRIC EQ — SWEEP 20 Hz to 25 kHz, SWEEP Q= 0.4 to 4.0
- PATENTED REAMP[®] OUTPUTS (2) — EMULATE LES PAUL[®] & STRAT[®] PICKUPS
- SPEAKER SOAK[™] — ALLOWS DIRECT RECORDING FROM GUITAR AMPLIFIERS
- VARIABLE DI IMPEDANCES — OPTIMIZE DI INPUT FOR ANY SOURCE (470K / 2M / 10M)
- FOUR INPUTS, NINE OUTPUTS (MIC, LINE, ACTIVES, TRANSFORMER, HEADPHONE, ETC.)
- NUMEROUS GROUND LIFTS & ISOLATIONS FOR 100% EFFECTIVE HUM REMOVAL
- STANDARD 45 dB DISCRETE GAIN — OPTIONAL HV-3 MICROPHONE PREAMPLIFIER (65 dB)
- EFFORTLESS, LIFELIKE MUSICAL PERFORMANCE AT ALL DYNAMIC LEVELS

Introducing the TD-1 *TWIN DIRECT* “more-than-a-direct-box” — a sophisticated recording channel for guitars, basses, keyboards, DAWs, MIDI systems, and much more. Add Millennia's industry standard HV-3 mic preamp option and TD-1 becomes an uncompromised front-end for any audio recording application, from microphone to line level, to any variety of instrument transducer.

TWIN DIRECT employs *Twin Topology*[®] — Millennia's innovative merging of vacuum tube and solid state circuit topologies. Audio engineers and musicians no longer must choose between tube *DI* boxes or solid state *DI* boxes. *TWIN DIRECT* offers a musically rich 100% vacuum tube *DI* amplifier -or- invisible 100% discrete FET solid state *DI* amplifier in the same chassis. Each *DI* (direct inject) topology can be tuned with three different input impedances (470K / 2M / 10M). Up to 45 dB of discrete gain is standard.

TWIN DIRECT offers functions never before found in traditional direct boxes. A fully sweepable NSEQ-style dualband parametric equalizer (20 Hz - 25 kHz) gives an unlimited range of musical tonality. A simultaneous pair of patented *REAMP*[®] outputs allow TD-1 to emulate both Les Paul[®] and Strat[®] guitar pickups. Millennia's HV-3 mic preamp, a world standard in acoustic music recording, is optional (+65 dB).

Use as much or as little signal processing as you desire. *TWIN DIRECT* employs a minimal, all-discrete main signal path for sonic invisibility. Exceptionally high input (>100V) and output (>30V) headroom assure pure Millennia musical performance with any active or passive instrument or source.

TD-1 includes a balanced, high headroom XLR line input. Use this input with any line level source, such as a DAW or multi-track recorder. The line input to REAMP output path is ideal for REAMP-ing recorded guitar or bass — causing the guitar amplifier to think it's connected to a high impedance guitar pickup, rather than a very low impedance (and much too clean) DAW or tape machine output.

TWIN DIRECT also employs a galvanically-isolated, balanced XLR output. Millennia's DIT-01 large geometry *DI* transformer was custom designed to demanding specifications, and offers -3 dB frequency response at 3 Hz and 300 kHz with outstanding phase and THD performance.

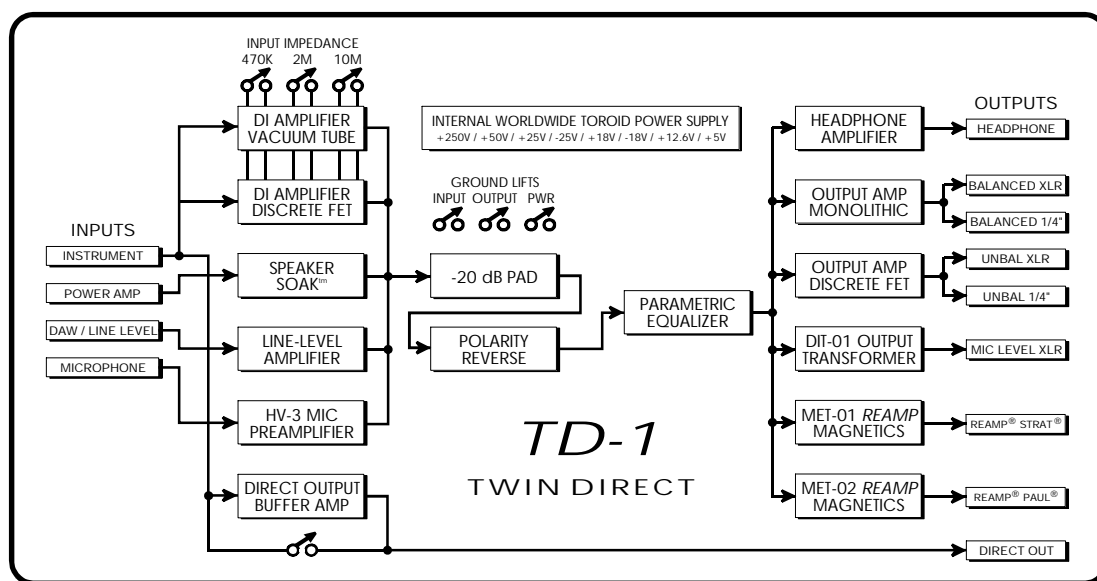
Recording directly from any guitar amplifier is now possible with Millennia's *Speaker Soak*[™] technology. Simply connect any speaker output to *TWIN DIRECT*'s *DI* input and start recording the authentic character of a guitar amplifier — as it appears at the speakers.

Other useful features include an audiophile grade headphone output with adjustable level control, polarity reversal and 20 dB pad, plus an array of standard outputs, including balanced and unbalanced XLRs & balanced and unbalanced 1/4" phone jacks — a total of four input types and nine outputs are designed into TD-1.

TWIN DIRECT remains faithful to Millennia's legacy of pristine sonic accuracy and broad audio functionality — TD-1 is the consummate solution to virtually any front-end recording application.

TD-1 Specifications

Instrument / DI Input Amplifier Topology (Twin Topology [®])	TUBE: Selected twin triode vacuum tube amplifier (200V) SOLID STATE: Selected all discrete J-F.E.T. amplifier (50V)
THD + Noise, 20 Hz - 30 kHz (35 dB Gain)	0.0005% typical mic / line, 0.03% typical vacuum tube
Intermodulation Distortion	0.0009% typical mic / line, 0.03% typical vacuum tube
Frequency Response @ -3 dB points	3 Hz to 300 kHz, typical. Varies with routing & topology
Maximum Balanced Line Input Level	+23 dBu (+43 dBu with Pad engaged or >110 Volts RMS)
Maximum DI Input Level (Both Tube & SS)	+18 dBu (+26 dBu with Pad engaged or >15 Volts RMS)
Maximum Output Level	+32 dBu active balanced outputs, +26 dBu unbal outputs
Maximum System Gain	45 dB standard (65 dB with optional HV-3 mic preamp)
Input Impedance (DI)	Switchable: 470K ohms / 2M ohms / 10M ohms
Noise (Mic) (60 dB gain)	-128 dB EIN, 150 ohm source, -130 dB EIN common source
Noise (Line) (10 dB gain)	-105 dBu
Noise (DI) (10 dB gain)	-90 dBu (solid state)
Phase Error (EQ out)	Less than +/- 5 degrees 50 Hz to 20 kHz
Parametric Equalizer	See NSEQ-2 or STT-1 Origin Parametric Specifications
Power Requirements	35W @ 100 / 115 / 230 VAC 50/60 Hz rear panel selectable
Physical Parameters	approximately 8.5" W x 13.0" D x 3.5" H @ 14 pounds



TD-1 is far more than a common DI (direct injection) box. *TWIN DIRECT* is a collection of core Millennia products designed into a compact yet sophisticated recording channel — we believe TD-1 is easily the world's *most versatile* and absolutely *best sounding* DI box, and *much* more. With numerous signal path topologies (vacuum tube, discrete transistors, monolithics, 3 transformers, Speaker Soak[™], etc.) all optimized to their respective sonic strengths, some have called *TWIN DIRECT* a *mini-ORIGIN*.

TD-1 employs Millennia's exclusive *Twin Topology* DI input stage which can be user-selected to employ a rich and colorful twin triode vacuum tube (12AT7) -or- transparent 100% discrete J-FET transistor amplifier. To musically optimize various instrument pickups, the user may also select low, medium, or high input impedances on *both* tube and solid state DI inputs.

TWIN DIRECT offers two complete bands of Millennia's acclaimed NSEQ parametric equalization (20 Hz - 25 kHz) used by scores of top mastering facilities around the globe. Ultra-transparent NSEQ bands are provided for high-resolution audio sculpting of instruments such as guitars, bass, and keyboards, or artistic and corrective work — like adding "air" and "punch," removing "mud," and so forth — all with the smooth and artifact-free audio qualities for which NSEQ is respected.

Numerous other audio functions and routing paths are available. TD-1 includes the following features, employing core Millennia products as noted by name:

- 1.) HV-3 discrete hybrid mic preamp (option)
- 2.) Vacuum tube DI input with variable impedances
- 3.) Solid-state DI input with variable impedances
- 4.) NSEQ-style all frequency parametric equalizer
- 5.) Patented REAMP[®] Strat & Les Paul simulation
- 6.) Numerous Ground-Lift switches & isolates
- 7.) Speaker Soak[™] guitar amplifier input
- 8.) Audiophile-grade headphone output with gain
- 9.) Fully Class-A biased discrete J-FET output stage

TD-1 *TWIN DIRECT* offers four audio inputs:

- 1.) Line Input with switchable -20 dB pad (XLR)
- 2.) HV-3 Mic Preamp Input option (XLR)
- 3.) Tube or FET DI Instrument Input (1/4")
- 4.) Power Amplifier / Speaker Soak[™] Input (1/4")

TD-1 *TWIN DIRECT* offers nine audio outputs:

- ▶ REAMP[®] Les Paul Guitar Simulation (1/4")
- ▶ REAMP[®] Stratocaster Guitar Simulation (1/4")
- ▶ Balanced Line Level Output (XLR)
- ▶ Balanced Line Level Output (1/4")
- ▶ Balanced DI Transformer Output (XLR)
- ▶ Unbalanced Line Level Output (XLR)

- ▶ Unbalanced Line Level Output (1/4")
- ▶ Headphone Output (1/4")
- ▶ Direct (pass-through) Output (1/4")

Numerous routing, output, and ground sensing options round out the world's most versatile and best sounding DI + Recording Channel. A stereo pair of TD-1 units will mount into a 19" rack. Leather handle and oversized rubber feet are included. A padded, glove-fitted Cordura "gig bag" is optionally available.

Today's recording path is changing rapidly. Quality professional recording products are major investments and must be carefully designed for longevity and non-obsolence. With mastering-grade sonics and specifications, military build quality, enormous versatility in one box, and a pedigree in the highest tradition of audio excellence, *TWIN DIRECT* is destined to remain contemporary well into the new millennium. Hence, *MillenniaMedia*.

Tubes, or Solid State? YES!

Millennia Media, Inc. Placerville, CA USA
 Tel 530-647-0750 Fax 530-647-9921
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