

Quick Start Guide



STT-1 Front Panel

- 1. Front-end Amplifier Select Switch** — selects the front-end gain amplifier as either entirely vacuum tube (VT) or entirely solid state (SS).
- 2. Phantom Power Select Switch** — provides phantom power (+48VDC) to the microphone inserted into that channel. When the LED is on, phantom power is applied simultaneously through dual 6.81k ohm resistors to pins 2 and 3 of the three pin female XLR input.

Use phantom power with condenser and other microphones requiring traditional phantom supply.



CAUTION: Applying phantom power to ribbon microphones could damage them. Do not use phantom with ribbons, moving coil, and other microphones which do not require phantom power.

Do not insert or extract mic cables from the preamp when phantom power is active.

- 3. Polarity Reverse Switch "POL REV"** — reverses the polarity (180 degree inversion) of all input signals, including the DI, mic input, and line input.
- 4. Transformer Select Switch "XFMR IN"** — places the Millennia MIT-01 audio path transformer in the front-end circuit. When used with high level signals you may notice a marked "enhancement" in sonic signature. We have designed this transformer to provide a unique, "fat" sonic coloration with condenser microphones which gives the engineer a richer, fuller, "bigger-than-life" image when used with aggressive sources such as drums and electric bass.
- 5. Overload Indicator "OL"** — A single red LED which begins turn-on (most dim) around +18 dBu and becomes fully on at +24 dBu at the direct output.
- 6. Vacuum Tube Gain Control "VACUUM TUBE GAIN"** — front-end vacuum tube gain range of approximately 18 dB, being an absolute gain range of approximately +22 dB to +40 dB at the direct output.
- 7. Solid State Gain Control "SOLID STATE GAIN"** — front-end solid state gain range of 40 dB, being an absolute gain range of approximately +10 dB to +50 dB at the direct balanced output.
- 8. SOURCE "MIC-LINE-DI"** — selects the front-end input source as either microphone, line level, or 1/4" DI (instrument, keyboard, etc.). Mic, Line, and DI inputs all feed the same front-end amplifiers (selectable via switches as either vacuum tube or solid state, transformer-coupled or transformer-less). When used as a solid state amplifier, the circuit is essentially identical to the front-end found on Millennia's HV-3. When used as a vacuum tube amplifier, the circuit is essentially identical to Millennia's M-2b front-end. The DI input offers a standard 1/4" phone jack exhibiting a very high input impedance via a single 12AT7 vacuum tube circuit.

Parametric Equalizer Section

- 9. Band In/Out Switch "IN"** — places its associated EQ band in circuit or out of circuit
- 10. Frequency Select Switch** — selects fixed high and low band frequencies
- 11. Peak/Shelf Select** — When LED is on, EQ is shelving at 6 dB per octave. When LED is off, EQ is peaking with a fixed "Q" of 1.0.
- 12. Boost/Cut Control** — +15 dB of boost and -15 dB of cut. Boost/Cut potentiometer has 21 detented positions for accurate repeatability and session logging.
- 13. Parametric Frequency Control** — selects EQ center frequency.
- 14. Parametric Frequency Range Select Switch "10X"** — When LED is on, frequencies as shown on front panel legend are multiplied by 10X. When LED is off, frequencies are as shown on front panel legend.
- 15. Parametric Q Control** — EQ bandwidth.
- 16. Equalizer In/Out Select Switch "EQ IN"** — places EQ in the signal path.
- 17. Twin Topology™ Select Switch "EQ/COMP TT"** — selects the amplifier topology to be used by the equalizer and compressor; vacuum tube or solid state. When the LED is on, EQ and compressor are routed via a 100% Class-A solid state FET amplifier. When LED is off, EQ and compressor are routed via a 100% Class-A vacuum tube amplifier. EQ and compressor amplifier path topologies cannot be selected separately.

Compressor/Limiter Section

- 18. Threshold Control** — threshold adjustment range of approximately -20 dBu to +20 dBu. Threshold is most sensitive when control is turned fully CW.
- 19. Attack Time** — When fully CCW, the fastest attack time is achieved (2 mS). When fully CW, the slowest attack time is achieved (100 mS)
- 20. Release Control** — When fully CCW, the fastest release is achieved (20 mS). When fully CW, the slowest release is achieved (3 seconds). Note that release times below 80 mS are normally used only during de-essing. It is recommended that broadband compression use >80 mS release times.
- 21. Ratio Control** — When fully CCW, the lowest and most gentle compression ratio is achieved (1.4:1). When fully CW, the highest and most pronounced compression ratio is achieved.
- 22. Pre/Post Dynamics Select Switch "FLIP DYNAMICS"** — determines the order in which the dynamics section is placed in the audio signal path. When LED is on, the dynamics section precedes the EQ section. When LED is off, the dynamics section follows the EQ section.

23. **De-Esser Select Rotary Switch** — provides selective filtering of particularly "sibilant" frequencies, such as found on overly breathy singers and so forth. Compressor/limiter "dynamics" switch (#24) must be active to achieve de-essing function.



The de-esser and broadband compressor/limiter cannot be used simultaneously.

When any de-essing frequency is selected, the meter Gain Reduction function is disabled.

The de-esser in the Origin is intended for modest de-essing duties. For more aggressive sibilance, a dedicated de-essing unit with greater flexibility is suggested.

24. **Dynamics In/Out Switch** — places an opto-compressor/limiter into the signal path. When LED is on, opto-electronic gain reduction elements are activated. When LED is off, gain reduction is not in circuit.

25. **Mute Select Switch** — mutes all main outputs, balanced and unbalanced. When LED is on, audio signal is muted at the main outputs. Does not affect Direct Output from the front end amplifiers. When LED is off, muting is not active.

25. **VU Meter Function Select Switch** — determines the VU meter function. When LED is on, VU meter indicates the amount of dynamics gain reduction. When LED is off, VU meter indicates

the actual output level of the balanced main outputs. A meter reading of 0 VU is equivalent to a balanced output of +4 dBu. NOTE: Unbalanced main output is 6 dB lower output than shown on VU meter.



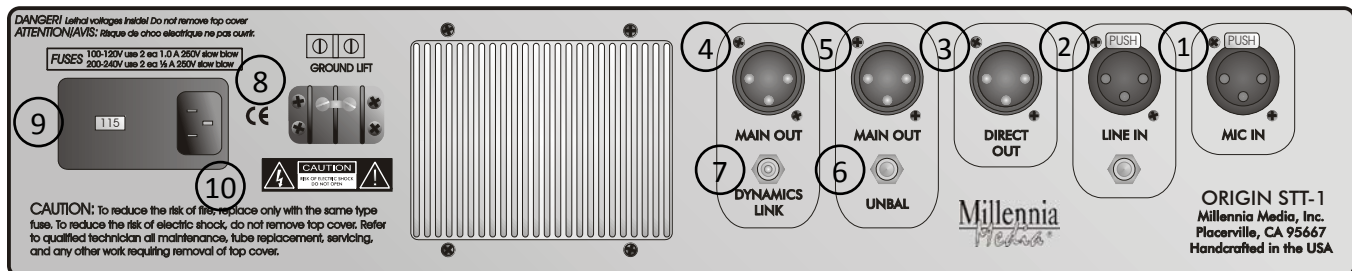
Metering is disabled when de-esser is enabled.

27. **Master Level Control "OUTPUT MASTER"** — Fully CCW is off. Fully CW offers an additional 10 dB of gain relative to the front-end amplifier circuits. Unity output level is achieved when this control is approximately 2:00 o'clock. At 10:00 o'clock, output level is attenuated approximately -16 dB.

28. **VU Meter Adjustment** — multi-turn trimmer potentiometer which adjusts the VU meter zero point when meter is set to Gain Reduction. Use insulated "wand" tool designed for trim pot adjustment. Allow ample time (1/2 hour recommended) for the STT-1 Origin circuits and chassis to "warm up" and reach a stable operating temperature before attempting to set the GR zero point of VU meter.

29. **VU Meter** — True analog-level meter providing indication of output level or gain reduction. Meter is backlit. Meter backlighting also serves as operational "pilot" light.

30. **Power Switch** — turns power on and off.



STT-1 Rear Panel

1. **Microphone Input** — XLR input jack for use with all standard balanced microphones, both phantom and non-phantom powered. Provides +48 Volts DC Phantom powering via front panel switch. Pin 2 is positive polarity. Pin 3 is negative polarity.

2. **Line Level Input** — XLR connector for use with balanced line level audio signals. A line level signal is defined here as nominal +4 dBu operating level. Pin 1 is ground. Pin 2 is positive polarity. Pin 3 is negative polarity. A 1/4" TRS phone jack is wired in parallel with the XLR (Tip=pin 2, Ring=pin 3, Sleeve=pin 1).

3. **Front End Direct Output** — XLR connector providing balanced, line level output directly from the front-end amplifiers (MIC, LINE, DI). This output is configured before the EQ, Compressor, De-esser, and main outputs. Great for tracking an unprocessed version.

4. **Main Output #1** — XLR connector providing balanced, line level output from all stages of the STT-1. Can be used simultaneously with all other outputs. Pin 1 is ground. Pin 2 is positive polarity. Pin 3 is negative polarity.

5. **Main Output #2** — XLR connector providing unbalanced, line level output from all stages of the STT-1. Can be used simultaneously with all other outputs.

6. **Main Output #3** — 1/4" female phone connector providing unbalanced, line level output from all stages of the STT-1. Can be used simultaneously with all other outputs. Tip is signal positive polarity, Sleeve is ground. This output is paralleled with Output #2 (above).

7. **Dynamics Link** — RCA-style phono jack providing a connection to the dynamics side chain circuit. Use to link dual

STT-1 units for stereo operation. Any conventional RCA phono cable should work appropriately.

8. **Earth/Audio Ground Jumper** — barrier terminal which ties earth ground to audio ground. If ground "hum" loops are experienced when using the STT-1, removing this jumper may help. Using this jumper to lift ground, the integrity of the chassis/earth ground connection is never compromised. **Do not defeat the earth grounding pin on the AC plug.**

9. **AC Voltage Mains Selection** — The fuse block contains two fuses — one fuse is in series with the hot power line while the other fuse is in series with the neutral power line. Both fuses must be installed.

To change the mains voltage selection, remove IEC power connector and assure that the STT-1 is not connected to mains power. With a non-conductive tool, gently pry the fuse block away from the power entry module. Slide out the internal PCB board, turn it over, and reinsert the PCB so that the desired AC mains voltage appears in the viewing window. Double check that the fuses installed correspond to the AC mains voltage range which appears in the viewing window. Gently push the fuse block back until flush and snug.

Fuses: For 100-120 VAC mains, use two 5 x 20 mm, 1A, slow blow, 250 V, Littelfuse 218 or equiv. For 200-240 VAC mains, use two 5 x 20 mm, 1A, slow blow, 250 V, Littelfuse 218 or equiv.

10. **Power Entry** — IEC Power Receptacle for use with removable cords. Use only the power cord provided. (Export units' cords are provided by the distributor.)

The complete STT-1 manual is available on-line:

<http://mil-media.com/pdf/origin-manual.pdf>