

# **TEST SPECIFICATION: TL Audio EQ2 PARAMETRIC VALVE EQUALISER.**

**Issue 1: 19th January 1996.**

**Tolerance on inputs +/-0.2dB, outputs +/-1dB, unless stated otherwise.**

1.     **MAINS VOLTAGE:**                             Set to 240V.
  
2.     **GROUND CONTINUITY:**                     Limit 0.01 ohms.
  - 2.1    Measure the resistance between the ground pin of the IEC inlet to the chassis ground screw.
  
3.     **VISUAL INSPECTION:**

Inspect the unit, paying particular attention to the following items:

  - 3.1     - the orientation of power supply diodes and capacitors,
  - 3.2     - the orientation and seating of ICs,
  - 3.3     - all mains wiring,
  - 3.4     - check the solder side of the PCB for unsoldered joints and solder splashes,
  - 3.5     - the quality of external paint and silk screening,
  - 3.6     - check all knobs and switches operate freely and are uniformly spaced from the panel,
  - 3.7     - all XLR connectors are locked,
  - 3.8     - LED alignment with front panel.
  
4.     **SWITCH ON:**
  - 4.1    Check for any sign of component stress or overheating.
  - 4.2    Operate all push switches and check the operation and colour off all LEDs.

**Tests 5 to 10 should be performed on each channel:**

5.     **PHANTOM POWER:**                             +48V.

Equaliser:         48V On, measure on pins 2 and 3 of Mic input socket, using the test fixture.

**6. INPUTS:**

**6.1 LINE INPUT: Output 0dBu.**

A2: 1KHz, sine, 0dBu, 22Hz-22KHz filter.

Equaliser: Input to Line XLR, Switch to Line Input, Input and Output Gain centre detent, LF and HF Cut off, EQ out.

Adjust RV32 for 0dBu output on Channel A (from underneath the PCB), and RV17 for 0dBu output on Channel B.

**6.2 EQUALISER IN: Output 0dBu.**

Switch the Equaliser in with all controls central, and all bands on. Check the output changes by less than 0.5dB.

**6.3 FREQUENCY RESPONSE: -1dB 20Hz to 40KHz.**

A2: Sweep, filters off.

**6.4 OUTPUT BALANCE: Adjust using the test fixture.**

**6.5 OUTPUT LEVEL SWITCH: Output -14dBu.**

Equaliser: O/P Level switch -10dBu.  
Return switch to +4dBu position after test

**6.6 UNBALANCED INPUT AND OUTPUT: Output 0 +/-2dBu.**

Equaliser: Rear panel jack input and output.

**6.7 AUX INPUT:**

A2: Output level -20dBu.

Equaliser: Input to front panel Aux jack, output via XLR, Input and Output Gain centre.

Switch to Low Gain, check output -17dBu.

Switch to High Gain, check output +3dBu.

**6.8 MIC INPUT: Output 0dBu.**

Equaliser: Mic Input, Input Gain Max, EQ out, EQ flat, Output Gain (Master) centre.  
A2: 1KHz, Sine, -60dBu, 22-22KHz Filter, Meter.

**6.9 MIC INPUT NOISE: Limit -67dBu (EIN = -127dBu).**

Equaliser: Disconnect input and replace with 150R termination.

7. **HUM AND NOISE:** -78dBu.
- A2: 0dBu, Output Mute, 22Hz-22KHz.  
Equaliser: Line XLR input, switch to Line input, EQ out, Input and Output Gain centre.
- Switch EQ in, all bands on with all controls centred. Check noise limit -75dBu.
8. **DISTORTION:** Limit 1%.
- A2: 22-22K Filter out, THD, Output On.
9. **LF AND HF CUT RESPONSE:**
- A2: Level.
- Equaliser: LF and HF Cut in, frequency controls centre.
- Sweep the A2, and check for a bandpass response -3dB at 150Hz and 5.5KHz.  
Tolerance on frequencies +/-10%.
- Switch the LF and HF Cut off.
10. **EQ RESPONSE:**
- For each band: Set the Cut/Boost, Frequency and Q controls fully anti-clockwise.  
Sweep the A2 (20Hz-40KHz) and check against the reference plot.
- Set the Cut/Boost, Frequency and Q controls fully clockwise.  
Sweep the A2 (20Hz-40KHz) and check against the reference plot.
- Return the controls to their centre positions.
- Note: For channel B, repeat in stereo mode, using the Channel A controls.
11. **SOAK TEST.**
12. **AUDIO/QA TEST.**