

1. HISTORY SHEET. Each unit must be accompanied by an INSTRUMENT HISTORY SHEET. Ensure the History Sheet has been completed satisfactorily.
2. MAINS VOLTAGE. Check the Mains Switch setting on the rear panel. It must be 230V.
3. EARTH CONTINUITY. Check the earth connection from the IEC connector to the rear panel. Check the tightness of the Rear Panel Earth connection. It must be tight. Check that an Earth Symbol has been placed adjacent to the Earth Terminal.
4. VISUAL INSPECTION. Inspect the unit, paying particular attention to the following:
 - 4.1 PSU Capacitors and Diodes. Value and orientation.
 - 4.2 Intergrated circuits. Type and orientation.
 - 4.3 Transformer Wiring. Wired as per PCB silk screen. Check insulation of wires.
 - 4.4 Soldered Joints. Check for solder shorts, dry or unsoldered joints.
 - 4.5 Internal Fuses. Check fuses are seated correctly. Check values as stated on the PCB Silk Screen.
 - 4.6 External Finish. Check front and rear panel silk screening for legibility. Check all external surfaces for marks and blemishes. Check that all screw heads are undamaged, check screws are tight.
 - 4.7 Knobs and Switches. Check that Knobs and Switches move freely. Check they are correctly aligned with their legends. Check they are uniformly spaced from the front panel.
 - 4.8 LED Alignment. Check that all LED's are equally spaced from the front panel.
5. FIT VALVES. Check the valve bases for splayed pins. Perform corrective action as necessary. All valves are ECC83/12AX7A unless otherwise stated. Plug valve in each socket, ensure valve is a tight fit. Do not wiggle valve in socket.
6. SWITCH ON. Check Mains Switch moves freely. Leave in OFF position. Set DVM to DC Voltage and connect between Ground & +15 volt point on PCB. Connect the IEC Mains Cord to the Mains Inlet. Switch unit On. Check each supply in turn as quickly as possible. Switch OFF if a supply is not present.
 - 6.1 +15 volt rail. +15.00 volts +/- 0.25v.
 - 6.2 -15 volt rail. -15.00 volts +/- 0.25v.
 - 6.3 HT voltage 150 volts +/- 8.0v.
 - 6.4 Heater voltages +6.3 volts & -6.3 volts +/- 1.0v.
 - 6.5 Phantom Power. +48 volts +1.0v/-4.0v.
7. LED CHECK. Using the appropriate controls check all LED's illuminate together. The DRIVE and PEAK LED's may be excluded from this test.

Revision History	Issue 1	From Serial Number: 550001	To Serial Number:

- 8. INITIAL SETTINGS. Set all Front and Rear panel switches to the OUT position.
 Set all Centre Detent pots to mid-position.
 Set all other Pots fully anti-clockwise.
 Set all Rotary Switches fully anti-clockwise.
- 9. TEST EQUIPMENT. To perform the tests to this procedure use:
 A calibrated Signal Generator.(Sinewave) 0.0 dBu @ 1 kHz unless stated.
 A calibrated Signal Analyser.(dBu/THD+N%) With 22-22k Filter set to On.
 An Oscilloscope.
 A Digital Voltmeter.
 A metal film 150R resistor in shielded XLR connector.(Pins 2 & 3)
- 9.1 REFERENCES All unit settings are on the Front Panel unless stated otherwise.
 All Settings(RVnn) and Test Points(TPnn) are on the Main PCB unless stated otherwise.
- 9.2 HISTORY SHEET. All faults/rework must be logged on the History Sheet.
 Where practical show the operator/assembler the nature of the problem.
 Serious/Repetitive faults must be reported to the Production Manager.
 After the unit has been succesfully tested Sign & Date the History Sheet.
 The History Sheet must remain with the unit at all times.
 After the unit is dispatched the History Sheet must be filed for analysis.

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10. INITIAL TESTS.
- 10.1 PHANTOM POWER. Set INPUT switch to MIC position.(from MIC +48v)
Connect DVM to XLR pin 2 and Ground.
Set INPUT switch to MIC +48v position.
Check for +48 volt reading.(+1v/-4v)
Repeat test for XLR pin 3 and Ground.
- 10.2 SIGNAL BALANCE. Set OUTPUT GAIN control to mid-position.
Connect input to LINE XLR. 0.0 dBu.
Set INPUT switch to LINE.
Alternately scope pins 2 & 3 of OUTPUT XLR while adjusting RV20.
Adjustment is complete when the signals at pins 2 & 3 are equal.
- 10.3 COMPRESSOR OFFSET. Connect DVM to TP2.
Adjust RV2 for a reading of -400 mVolts DC.
- 10.4 GATE LEVEL. Remove input signal.
Connect DVM to TP3.
Adjust RV3 for a reading of +80 mVolts DC
Note: Value will fluctuate slightly.
If +80 mVolts cannot be achieved shunt a 10 Meg resistor across R85.
- 10.5 SET OUTPUT GAIN CONTROL. Connect input to LINE XLR.
Set Meter Switch to INPUT. Note Meter reading.
Set Meter Switch to OUTPUT.
Vary OUTPUT GAIN control to Null the difference between INPUT & OUTPUT
If OUTPUT GAIN pot is not centre remove and re-align control knob.
Note: If the reading is out by >1 dBu then select the value of R203on Main PCB.
The OUTPUT GAIN pot must remain in this position throughout the Test.
- 11.0 CALIBRATION. Signal In = 0.0 dBu to LINE XLR. Signal Out from Output XLR.
Set Analyser Filter to ON.
- 11.1 LINE INPUT GAIN. INPUT Switch to LINE.
Set RV4 for 0.0 dBu.
INPUT GAIN pot variation = +/- 21 dBu.
- 11.2 COMPRESSOR GAIN. Select COMP IN.
Set RV8 for 0.0 dBu.
- 11.3 EQ GAIN. Select EQ IN.
Set RV9 for 0.0 dBu.
- 11.4 EQ-PRE. Set LM & HM pots to Max.
Scope via hole just left of C88, note amplitude.
Select EQ-PRE to On.
Observe increase in signal by at least 4X.
Set LM & HM to mid-position.
Set EQ-PRE to Off.
- 11.5 HUM & NOISE. MUTE the Output of the Signal Generator.
The output value should read -80 dBu or better.

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- 11.6 MIC INPUT. Signal In = -60 dBu to MIC XLR. INPUT Switch to MIC +48v.
 Set INPUT GAIN control to Maximum.
 Check for 0.0 dBu +/- 2.0 dBu.
 Select INPUT Switch to MIC position. Check for 0.0 dBu +/- 2.0 dBu.
- 11.7 MIC NOISE Return Signal In to LINE XLR.
 Connect 150R resistor across MIC XLR pins 2 & 3.
 Check for a change in value of -67 dBu or better.
- 11.8 INSTRUMENT INPUT. Signal In = -20 dBu to Front Panel Jack Socket. (Single Pole)
 Set INPUT Switch to INST position.
 Set INPUT GAIN to mid-position.
 Check for -6.0 dBu +/- 1.0 dBu.
- 11.9 UNBAL IN/OUT. Signal In = -20 dBu to Rear Panel Unbal Input. (Single Pole)
 Signal Out from Rear Panel Unbal Output. (Double Pole)
 Set INPUT Switch to LINE position.
 Check for -20 dBu +/- 1.0 dBu.
- 11.10 90Hz Filter. Signal In = 0.0 dBu @ 90Hz to Input XLR.
 Signal Out from Output XLR.
 Note value with 90Hz switch OUT.
 Press 90Hz switch IN. Value should drop by -3 dBu.
 Leave 90Hz switch OUT.
- 11.11 DISTORTION Set Signal In to 1kHz.
 Set Analyser to read THD+N(%).
 Check for a value better than 0.2%.
 Set Signal In to 100 Hz.
 Set THRESHOLD & RATIO controls Clockwise.
 Check for a value better than 2.0%.
 Set THRESHOLD & RATIO controls Anti-clockwise.
 Return Analyser to read dBu.
- 11.12 NOMINAL GAIN. Set Rear Panel INPUT GAIN switch to IN.
 Check for a reading of -14 dBu. Set Rear Panel INPUT GAIN switch to OUT.
- 11.13 DRIVE / PEAK LED's. Set Signal In to +2.0 dBu. Check that DRIVE LED is Off.
 Set Signal In to +6.0 dBu. Check that DRIVE LED is just ON.
 Set Signal In to +16 dBu. Check that DRIVE LED is fully ON.
 Set Signal In to +25 dBu. Check that PEAK LED is ON.
 Set Signal In to +15 dBu. Check that PEAK LED is OFF.
 Increase OUTPUT GAIN control PEAK LED comes ON.
 The reading should be +25 dBu +/- 1.0 dBu.
 Set Signal In to 0.0 dBu.
 Vary OUTPUT GAIN control so the reading is 0.0 dBu.

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- 11.14 COMPRESSOR THRESHOLD. Signal In = +4.0 dBu.
 Set THRESHOLD & RATIO controls clockwise.
 Set RV2 for -9.0 dBu.
- 11.15 METER CALIBRATION. Set THRESHOLD control anti-clockwise.
 Set RV5 for Zero dBu on Meter.
 Set OUTPUT Switch to GR(Gain Reduction).
 RV7 & RV6 are interactive. Set RV7 for Zero dBu on Meter.
 Set THRESHOLD control clockwise. Set RATIO until reading is -2.0 dBu.
 Set RV6 for -6 dBu on Meter.
 Set THRESHOLD control anti-clockwise and check Meter reads Zero
 Repeat RV7 and RV6 until Meter readings are correct.
- 11.16 GAIN MAKE-UP. Set THRESHOLD anti-clockwise and GMU clockwise.
 Check reading is 22.0 dBu +/- 2.0 dBu.
 Set all Compressor pots fully anti-clockwise.
 Set COMP IN to Off.
- 12.0 SWEEP TESTS. The tests may be carried out using a 'sweep' Function Generator/Analyser,
 for each of the frequency settings.(LF/LM/HM/HF min & max).
 Or by determining the min/max values at the selected frequency manually.
 See Manual for Sweep examples.
- 13.0 GATE TEST. Set the GATE/EXPANDER control to the -40 dBu position.
 Set Signal In to -40 dBu. Check GATE LED is OFF.
 Check for a reading of -40 dBu +/- 2.0 dBu.
 Set Signal In to -44 dBu. Check GATE LED is ON.
 Set Signal In to -20 dBu. Check GATE LED is OFF.
 Check for a reading less than -80 dBu.
 Set the GATE/EXPANDER control clockwise until the GATE LED comes ON.
 Check the control position is -20 dBu +/- 5.0 dBu.
 Remove Input XLR lead from LINE XLR.
 Set the GATE/EXPANDER control to OFF. Check GATE LED is OFF.
 Set the GATE /EXPANDER control clockwise until the GATE LED comes ON.
 Check the control position is between OFF and -40 dBu.

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