



# TEST LAB



# INSTRUCTION MANUAL

## Introduction

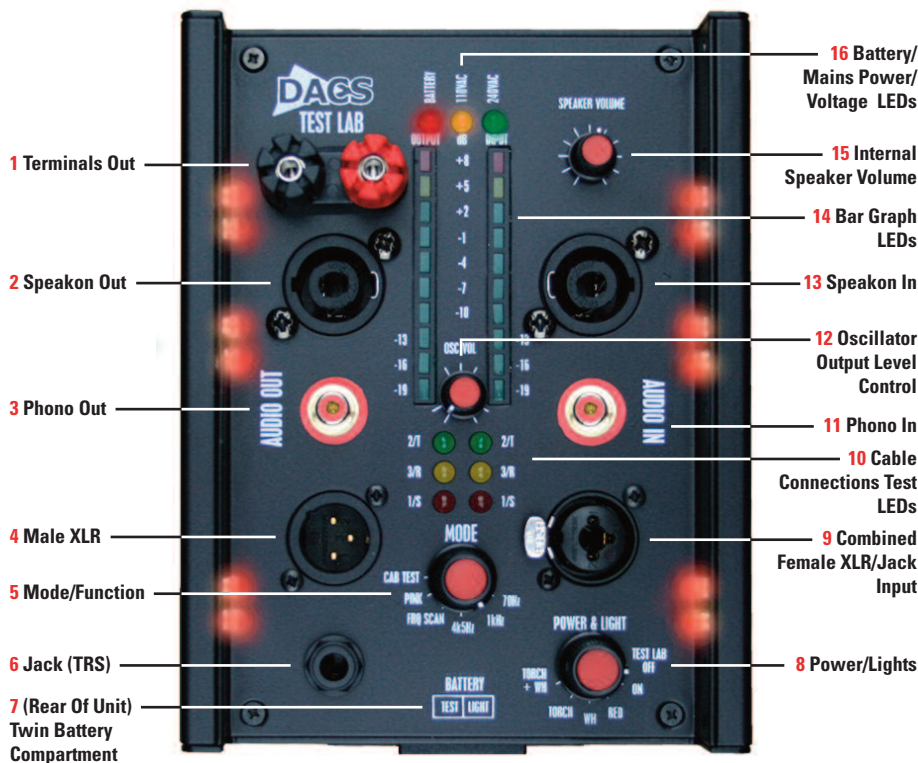
Because Test Lab was created to be used for audio testing and problem solving, often under pressure, it is designed to be intuitive and very straightforward in operation.

In most use cases, if you know what you want the Test Lab to do, it is easy enough to see how to do it.

However Test Lab also has a few less-obvious features, and so we suggest that even experienced engineers would benefit from a quick survey of this short instruction manual.

## Summary of Features

- Tests signal path, connections and wiring both locally and remote for phono, TRS jack, XLR, and Speakon (with 26dB pad on input).
- Tests for correct pin wiring, automatically cycling through the connections to reveal reversals, shorts and open contacts.
- Easy-to read multi-purpose 10 led meter array which provides essential engineering information in an instant.
- Can send variable level tone (70Hz, 1kHz and 4.5kHz) or Pink Noise to external units and speakers.
- The IEC mains input doubles as a mains tester indicating the presence and voltage (110VAC and 230VAC) of a live input.
- Working light (white for detail, or red for retaining night vision) for soldering or checking connectors; front torch/flashlight.
- Rugged construction, non-slip base, mains or battery operation, and just the right size.



## Instructions for Use

Make sure two good quality PP3 9V batteries are inserted in the battery compartment, or connect Test Lab to mains. To power Test Lab rotate the POWER & LIGHT knob (8) clockwise.

The combined power on/light switch (8) has 6 positions:

1 = Off

2 = On

3 = On + Red LEDs

4 = On + White LEDs

5 = On + Front Torch

6 = On + Front Torch & White LEDs

## Battery Power Operation

Test Lab is normally powered by a pair of 9V batteries housed in a dual compartment (7). One battery powers the test circuitry, the other powers the illumination LEDs and the front torch. A battery power LED (16) is lit during battery powered operation. (A useful corollary of having dual batteries is that if one begins falter at an inconvenient moment and the other has been less used - as is often the case - swapping batteries until you can get a new one will enable you to continue working).

To conserve battery life only the top LEDs of the bar-graph meters are fully illuminated during battery powered operation. The remaining LED are illuminated at a slightly lower level.

To further conserve battery power the Test Lab will automatically switch to **Sleep Mode** after approximately 10 minutes if the mode/function switch has not been changed. To exit **Sleep Mode** turn the switch to a different setting or simply turn the unit off and on again. **Sleep Mode** does not operate when the unit is powered by the mains.

When the battery power falls below 7.6V the battery power LED will start to flash off and on. The length of the LED off-time is proportional to the extent of the voltage drop below 7.6V - the longer the off-time, the lower the voltage.

As a further indication of low battery power, the bar-graph display will also alternate between full and reduced illumination levels.

## Mains Power Operation and Testing

Battery power is automatically turned off, and the red LED is extinguished when a live mains connection is plugged into the IEC socket at the rear of the unit.

Depending on the voltage of the mains input, one of the two other LEDs will light up: the yellow, showing that 110VAC power is being supplied to the input; or the green, showing that a 240VAC supply is being provided.

## Testing a Cable/Signal Path Integrity

To check the level and content of an incoming signal plug the cable into one of the Audio In sockets: TRS Jack or XLR (9); phono (11); or Speakon (13).

The incoming signal level is indicated by 10 LED bar graph meter (from -19dBu to +8dBu in 3dB steps).

The signal content can be auditioned for anomalies on the built-in loudspeaker positioned at the front of Test Lab.

The volume level of the internal speaker can be adjusted using control (15).

## Testing Cable Connections/Wiring

Move the Mode control (5) to the CAB TEST position

Plug the two ends of the cable into the appropriate pairs of In/Out sockets (2, 3, 4, 6 / 9, 11, 13). Mixed cable connections are possible.

The 'Audio Out' side of the 3-LED array (10) shows which wire is under test and the 'Audio In' side shows which wire it is connected to (LED lit), or if it is not connected to any (LED unlit).

There is a special facility for testing Speakon connections which helps to identify connection on a 4-wire connector: the test for circuit 1+/1 to 1+/1- will be indicated with the normal level of LED illumination; but there will be a reduced level of illumination on the lower ('Output') LED row for circuit 1+/1- to 2+/2- and 2+/2- to 2+/2- tests.

## Remote Testing

The remote female XLR socket provided with the Test Lab mirrors the 'Audio Out' LED array on the main unit (10). Hence, for example, by plugging the female connector of each cable into the Test Lab itself, and the male end into the remote socket, two people at either end of the cables can very rapidly test multicore continuity and connectivity.

## Sending a Test Tone

The first 5 positions of the Mode/Function switch (6) select the following oscillator test tones:

1 = 70Hz; 2 = 1KHz; 3 = 4.5KHz;

4 = Frequency Cycle; 5 = Pink Noise

The level of the oscillator output is shown on the 'Audio Out' bar-graph and can be adjusted using control (12). Note that the Speakon and paralleled terminal outputs are fed by a internal power amplifier which is capable of driving speakers directly down to impedances of 4 ohms at a maximum level of +8dB (assuming mains operations or sufficient battery power).

The level of the return signal is shown on the 'Audio In' bar-graph and level at which it can be heard on the internal speaker is adjusted using control (15).



### **Compliance to European Standards**

This Test Lab complies with the following standards (see Declaration of Conformity):

Radiated Emissions to Specification EN50081-1

Conducted Emissions to Specification EN50081-1

Electro Static Discharge to Specification EN50082-1

Fast Burst Transients to Specification EN50082-1

Serial Number :

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