

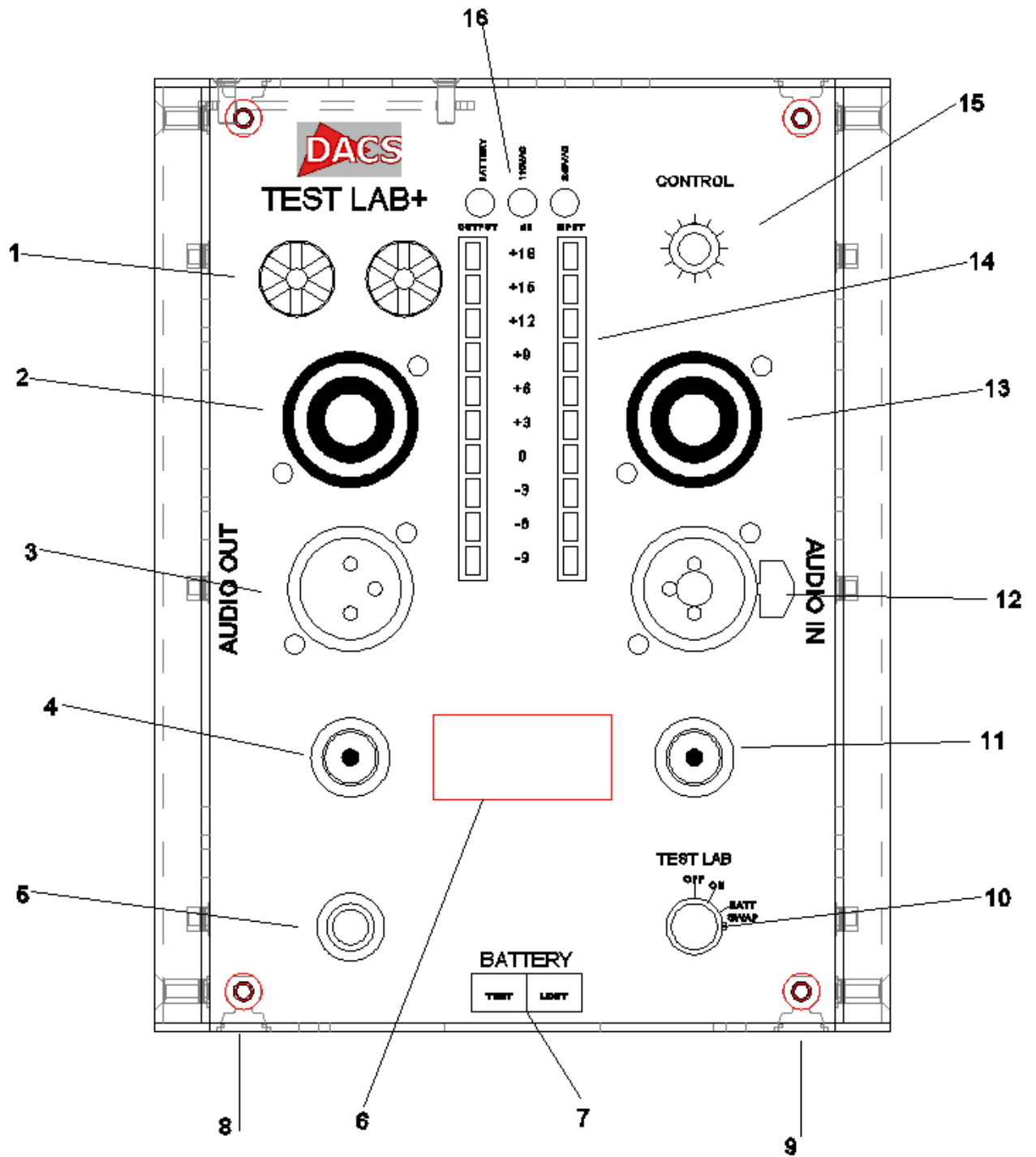
[Front Page]

[Title]: **DACS Audio** [DACs Logo] [Test Lab Instruction Manual]

[Main pic - I'm assuming medium sized, Black and White, not hi-res]:

[Inside full page]

1. Terminals Out
2. Speakon Out
3. Male XLR Out
4. Phono Out
5. Jack (TRS)
6. 2 x 8 character display
7. (Rear of Unit) Twin Battery Compartment/Mains Input
8. RJ45 Out
9. RJ45 In
10. Power/Battery Swap switch
11. Phono In
12. Combined Female XLR/Jack Input
13. Speakon In
14. Bar Graph LEDs
15. Control rotary encoder/switch
16. Battery/Mains Power/Voltage LEDs



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:**

Test Lab+ can send fully balanced variable level tone (70Hz, 1kHz and 4.5kHz) individually or in a sequence, send a 20Hz to 20kHz sweep tone (the speed of both these can be adjusted), or Pink Noise to external units and speakers. Test Lab+ also provides: tests signal path, connections and wiring both locally and remote for phono, TRS jack, XLR, Speakon (with 26dB pad), easy-to read multi-purpose 10 led meter array which provides essential engineering information in an instant, the IEC mains input doubles as a mains tester indicating the presence and voltage (110VAC and 230VAC) of a live input, tests for correct pin wiring, automatically cycling through the connections to reveal reversals, shorts and open contacts for all above connectors and 8 pin RJ45, including a 'wiggle test' for intermittent connections, Lid 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 knob (10) clockwise; this knob has 3 positions:

OFF – Test Lab+ is off – no battery drain

ON – Test Lab + is on and all features are available

BATT SWAP – this swaps the role of the batteries; the light battery tends to retain charge and swapping it with the TEST battery will extend Test Lab+ operating time

### **Battery Power Operation**

Test Lab+ is normally powered by a pair of 9V batteries housed in a dual compartment (7). A single 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 Test Lab+ will automatically switch to **Sleep Mode** after approximately 10 minutes if the CONTROL encoder/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 (12); Phono (11); or Speakon (13) NB the Speakon has a 26dB pad built in.

The incoming signal level is indicated by 10 LED bar graph meter (14) (from -9dBu to +18dBu 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 in the SETTINGS menu as demonstrated below by using the CONTROL knob (15):



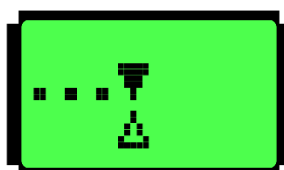
### Testing Cable Connections/Wiring

Select CAB TEST on the display using the CONTROL knob, and then press the switch down.

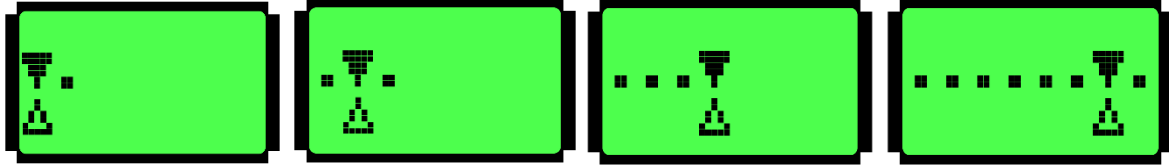


Plug the two ends of the cable into the appropriate pairs of In/Out sockets (2, 3, 4, 5 / 11, 12, 13). Mixed cable connections are possible.

For testing cable, the above line on the 2 x 8 character display (6) is the cable undergoing test on the AUDIO IN side (1, 2, 3 or 4), while the line below that shows which cable is connected.



To change the number of pins to test turn the CONTROL knob (15) between 8, 4, 3 and 2.  
The test will then sweep through each pin as selected.



The connector types support for testing are:

- Bare Speaker Wire (1- Black/1+ Red (1)
- Speakon (2-pole and 4-pole) (2, 13)
- XLR Female (3)
- XLR Male (10)
- Phono (4, 11)
- TRS Jack (5, 12)
- RJ45 (8, 9)

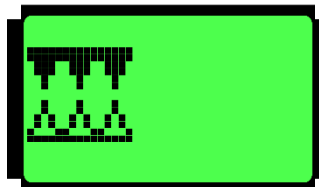
**Wiggle Test**

Select WIG TEST on the display using the CONTROL knob, and then press the switch down.

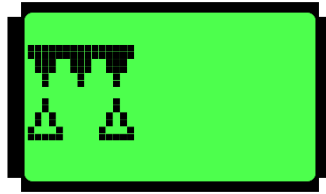


Plug two ends of a cable into the appropriate end of In/Out Sockets (2, 3, 4, 5 / 11, 12, 13).  
Mixed cable connections are possible.

You can change the number of pins to test by turning the CONTROL knob between 8, 4, 3 and 2 pins. The test will then check each pin individually for faults.



If the test is running and the cable is free of issues each connector above will be mirrored below it.



If, however the test does pick up an issue the corresponding connector will not be mirrored, the pin numbers are ascending right to left (1 to the left, 2 in the middle and 3 on the right of the above diagram).

### **Remote Testing**

The remote female XLR socket provided with the Test Lab mirrors the `Audio Out' LED array on the main unit (12). 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 7 clockwise positions of the menu accessed via the CONTROL knob (15) select the following oscillator test tones:

- 1 = 70Hz;
- 2 = 1KHz;
- 3 = 4.5KHz;
- 4 = Frequency Scan
- 5 = Frequency Sweep
- 6 = Pink Noise
- 7 = White Noise

The level of the oscillator output is shown on the `Audio Out' bar-graph and can be adjusted using the CONTROL knob (15). Note that the Speakon and paralleled terminal outputs are fed by an 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 the CONTROL knob (15)

The test tone volume levels can be changed in their respective main menu selection.

### **Lights**

The lighting control on Test Lab+ has 5 settings; off, red working light, white working light, torch and torch with white working light.

You can select the light by turning the CONTROL knob which will sweep through each choice.

### **Settings**

The settings menu for the Test Lab+ can be accessed via scrolling the CONTROL knob to SETTINGS and pressing. In the settings menu you will see options for the following:

#### **Internal Speaker (INT SPKR)**

The volume level of the internal speaker can be adjusted

#### **Frequency Sequence Rate (FRQ SEQR)**

The time in seconds of the rate of the frequency scan

#### **Frequency Sweep Rate (FRQ SWPR)**

The time in seconds of the rate of the frequency sweep

#### **Cable Sequence Rate (CAB SEQR)**

The speed of which the cable tester tests each pin

#### **Options Mode (OP MODE)**

Changing the balance/unbalance of the send -> receive.

The options for balancing are as follows:

Balanced - Balanced

Unbalanced – Balanced

Unbalanced – Unbalanced

Balanced - Unbalanced



*Serial Number* \_\_\_\_\_

[Last Page/Inside Cover]

**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

*After Sales Service*

In USA and Canada contact:

Independent Audio LLC

43 Deerfield Road

Portland

Maine 04101-1805

Tel (207) 773 2424

[fraser@independentaudio.com](mailto:fraser@independentaudio.com)

In the UK and Europe contact:

DACS Ltd

Unit A19 Stonehills

Shields Road

PELAW

Tyne and Wear

NE10 0HW

Tel 0191 438 2500

[technical@dacs-audio.com](mailto:technical@dacs-audio.com)

[These two side by side at the bottom]