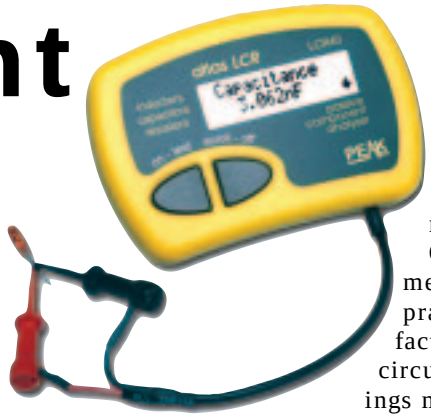
Atlas LCR Passive Component Analyser



Do you need a quick and easy way to measure resistors, capacitors and inductors? Well, this little gem from Peak might be just what you've been looking for!

Compound instruments that can measure inductance, capacitance and resistance find many uses in a typical electronics workshop. They can help you to decipher an unreadable code on a component, or select a specific value component from within a tolerance band.

They're also very useful when you want to fine-tune your carefully crafted inductor, current shunt or the like. And of course, they can quickly tell you if the value of a component is what it's supposed to be.

Traditionally, instruments with sufficient accuracy and range to perform all of these functions well have been expensive and difficult to use. Peak Electronic Design appear to have satisfied all of these requirements with their Atlas LCR Passive Component Analyser.

Metrics

Unlike bench-top LCR bridge meters, this little beauty is battery-powered and fits in the palm of your hand. It is supplied with a short, wired-in test cable terminated with two small hook clips. These are suitable for measuring most leaded components.

The clips are attached to the wire ends via a simple pin & socket arrangement, allowing replacement with longer reach clips or tweezers for surface-mount device measurement (optional extras).

Ranges:

1µH to 10H inductance (±1% ±0.8µH accuracy)
0.4pF to 10µF capacitance at ±1% ±0.3pF accuracy)
1Ω to 2MΩ resistance at (±1% ±0.6Ω accuracy)

The front panel consist only of two pushbuttons and a 16-character, two-line liquid crystal display.

Making measurements

Measuring a component is as simple as hooking up the clips and pressing the "on-test" button. The instrument switches on, and after a short delay (which can be avoided by pressing the button again), the component is automatically identified, measured and the value displayed.

For inductance measurements, a test frequency of 1kHz, 15kHz or 200kHz is selected automatically according to size. The test frequency used, as well as the inductor's DC resistance can be displayed by scrolling down with the "scroll-off" button.

For capacitor measurements, the instrument uses AC impedance analysis for values less than 1uF and DC transient analysis for larger values. Again, the test frequency is determined automatically and can be displayed by hitting "scroll–off".

As the test voltage used is only about 1V, is it usually unnecessary to worry about the polarity of tantalum and electrolytic capacitors when hooking up the test leads. In addition, a low test current of 3mA means that you can safely measure (most) components in-circuit.

Of course, in-circuit measurement is not always possible or practical and in fact, the manufacturers do not recommend in-circuit testing, because the readings may be misleading.

Note that capacitors must be fully discharged before connection to the test leads. The instrument will refuse to perform a measurement if it detects voltage and displays an error message instead. We've no doubt that a capacitor charged to a high voltage level would destroy the instrument (and void the warranty!).

Calibration

Probe compensation (nulling) can be performed at any time by holding down the "on–test" button and shorting the clips together. This is generally only necessary before measuring low inductances (<10µH) and resistances (<10Ω) or after swapping probes.

Impressions

This is definitely a "user-friendly" instrument. With its two-button operation, 1% basic accuracy and relatively low price, Peak has devised a highly practical piece of test gear that would be welcome in any workshop.

Where to get one

The Atlas LCR Passive Component Analyser can be purchased directly from the manufacturers in the UK: **www.peakelec.co.uk**

Price, including shipping (airmail) & 12 months warranty is £77.23. At the exchange rate current at the time of writing this review, that is equivalent to about $AU193. **SC**