

Application Note

Testing Animal Identification Implants

Customer Inquiry

One customer is a manufacturer of animal ID implants, an electronic device implanted in animals giving them a unique identification number. These devices can be used for absolute identification of exotic animals and birds should they become lost or stolen. The unit basically consists of an integrated circuit, a small capacitor and coil sealed in a glass tube and usually implanted in the shoulder blade region of the animals body. This micro chip (about the size of a grain of rice) lies dormant and is only activated by radiation through a built-in antenna which charges the internal capacitor causing the animals ID code to be read back through the same antenna to an external receiving device (scanner).

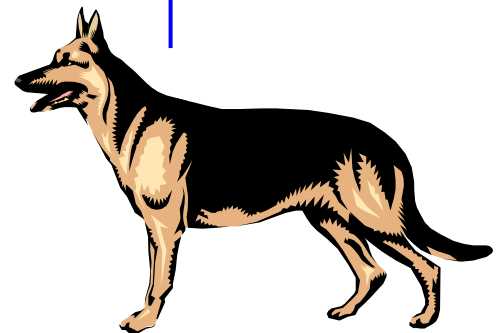


Solution

100% inductance testing on the coils and sample testing of the capacitors is a vital step in the manufacturing process. With no internal testing capabilities this company found it necessary to employ the services of an outside test house. With the introduction of the 7400 Precision LCR Meter, this manufacturer is now able to measure product components and other devices within the company.

The capacitor and coil used in the ID implant are critical components to the long-term operation of this device, expected to last for the life of the animal. The production process at this company requires 100% testing of the coil at 125kHz on the 7400 LCR Meter. The 7400 instrument is also used as a QC tool for lot sample testing of the capacitor, which when combined with the coil makes up a matched pair. The manufacturer is using the 7400 unit as an R&D tool to test new components at various frequencies.

Location of ID implant
(Shoulder Blade)



Application Note

What's that look like?

Figure 1 illustrates the connection of the 7400 Precision LCR Meter to the device under test, the coil and the capacitor used in the animal ID implant microchip.

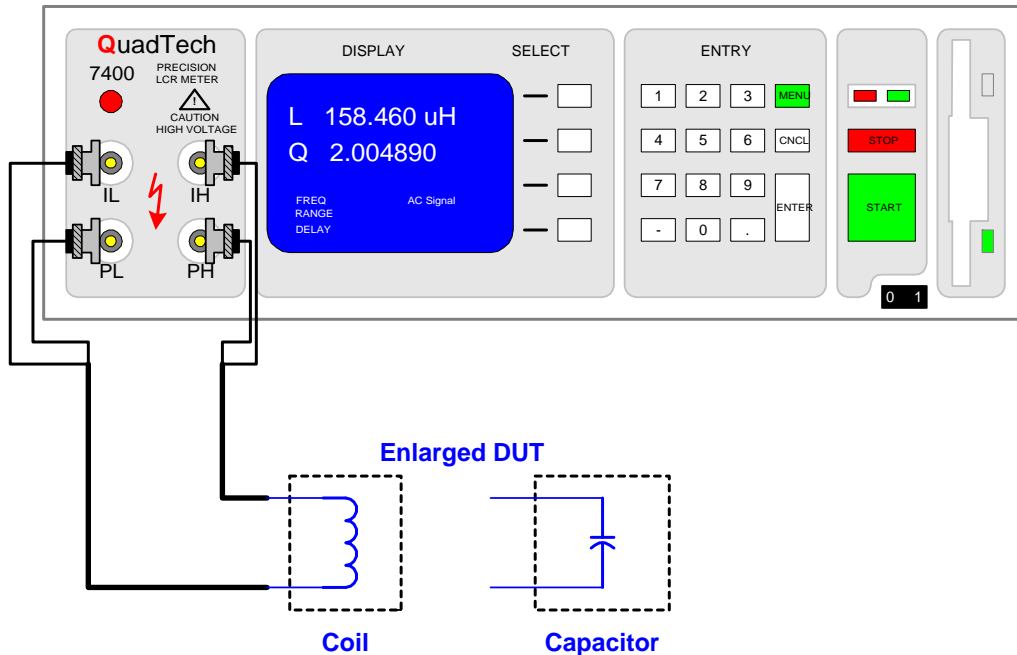


Figure 1: Connection of 7400 Precision LCR Meter to DUT

Summary

The introduction of the 7400 was viewed as a substantial cost savings move. It has allowed coil winding and testing operations to be brought in-house for better local control. The capability of wide frequency selection offers much flexibility in the development of new products. Noteworthy is the fact that the 7400 provided a company with little to no testing experience to be up and running so quickly, its ease-of-use stood out.

The 7400 Precision LCR Meters was replaced by the 7600 Plus which has the sweep capabilities and improved specifications.

For complete product specifications on the 7600 Plus Precision LCR meters or any of IET Lab's products, visit us at www.ietlabs.com. Do you have an application specific testing need? Call us at 516-334-5959 and we'll work with you on a custom solution. Put IET Labs to the test because we're committed to solving your testing requirements.

