Keysight Technologies

Tips for Preventing Damage to 42841A and LCR Meters

Ensure proper grounding

- Always use the three-prong AC power cord supplied with the instrument.
- Proper grounding of the instrument will prevent a build-up of electrostatic charge which may be harmful to the instrument and the operator.
- Do not damage the earth-grounding protection by using an extension cable, power cable or autotransformer without a protective ground conductor.
- Check AC power quality and polarity; typical AC voltage required is 100 V, 120 V, 220 V ± 10% or 240 V +5%/–10%. Typical expected grounding wire resistance is < 1 Ω, the voltage between neutral and ground line is < 1 V. Install uninterruptible power supply [UPS] if necessary.
- For more information, view "Considerations for Instrument Grounding - Application Note".

Check for proper temperature and humidity

- Keep unit in a clean and dry environment.
- Typical optimal operating temperature is 23 to –5 °C, always keep instrument ambient temperature at < 35 °C.
- Ventilation holes and fans should be inspected and cleaned frequently.
- Keep working environment clean. Dust may cause ESD damages. Fuzz or dust may hinder the fan turning normally and the unit may fail to be powered adequately.

Follow electrostatic discharge precautions

- Electrostatic discharge (ESD) can damage or destroy electronic components. Whenever possible, conduct testing at a static-safe workstation. Keep electrostatic-generating materials at least one meter away from all components.
- For more information visit the Electrostatic Discharge Association **www.esda.org**

KEYSIGHT TECHNOLOGIES

Connect LCR meter (4284A/4285A/E4980A) properly to 42841A bias current source and follow operation procedures correctly

- Do not apply DC voltage or current to the unknown terminals. Doing so will damage LCR meter.
- Before measuring a capacitor, ensure it is fully discharged.
- Turn off power of 42841A and LCR meter when connecting or disconnecting them with others.
- Do not put device under test [DUT) outside of 42842A/B box while measuring.
- Enable and disable bias current by pressing DC Bias key on LCR meter front panel. Do not disconnect current by removing DUT or cables.
- Always disable bias current before removing DUT or disconnecting 42841A from LCR meter.
- Do not power off LCR meter or 42841A before disabling bias current.
- Use appropriate test fixtures and compensations to achieve accurate measurement. Occasional cleaning of the unknown terminals of LCR meter as well as the test fixtures is recommended for best results.
- Use Keysight specified memory cards. For example, 4284A use memory cards which contains 4284A-specific data only. If other memory cards are used, it may be destroyed. Non-4284A specific data contained on the memory card is not guaranteed, data may be lost.
- Do not remove memory card while loading or storing data. Store memory card in memory card case for preventing contamination and ESD.

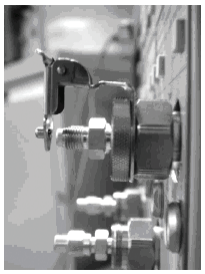

Figure 1. ESD gate

Figure 2. Shorting test cable

Figure 3. Cable connection

Figure 4. 42842B

Keysight Services

www.keysight.com/find/KeysightServices
Flexible service solutions to minimize downtime and reduce the lifetime cost of ownership.

Keysight Infoline

www.keysight.com/find/service
Keysight's insight to best in class information management. Free access to your Keysight equipment company reports and e-library.

This information is subject to change without notice.
© Keysight Technologies, 2013 - 2015
Published in USA, April 14, 2015
5989-8784EN
www.keysight.com