Tips for Preventing Damage to RF Power Sensors

Avoid applying excess power to the sensor

Avoid damage to the power sensor's detector by having a reasonable close idea of the signal level to be measured with the sensor. Overpowering the sensor can cause damage to the detector circuitry.

Before turning on or turning off the connected equipment or the DUT, reduce the signal level to the minimum safety level. This will prevent unexpected signal swell or sag that may exceed the applied power limit.

LadyBug sensors include a built in DC blocking circuit, take care not to exceed the dc input voltage rating listed on the datasheet and / or sensor label.

Read the warning labels and specifications

Do not exceed the values provided in the specifications guide for the sensor you are using or as indicated by the warning labels affixed to the power sensor.

Refer to the data sheet for conditions required to meet the listed specification. Note information regarding stabilization time, instrument settings and calibration/alignment requirements.

For example,

LB480A
Measurement level +20 dBm (100 mW)- damage level +23 dBm (200 mW)
Same for pulsed or average power.

LB5900 Series
Measurement level +26 dBm (400 mW) - damage level +29 dBm (800 mW)
Pulsed Power Measurement level* +33 dBm (2W) – damage* level +36 (4W)
* Limits on pulse specification see data sheet

Follow electrostatic discharge precautions

High sensitivity power sensors do not have Electrostatic Discharge (ESD) protection devices because they limit dynamic range. Electrostatic discharge 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.

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Always put connector cap on the unused power sensor for preventing ESD.

For more information about electrostatic discharge, contact the Electrostatic Discharge Association - www.esda.org

Protect the RF input connector

Be careful not to bend, bump or flex any device under test (DUT) connected to the input of the sensor (such as filters, attenuators, or large cables). This will reduce the amount of strain placed on the input connector and the mounted hardware.

Ensure externally connected items are properly supported (not freely suspended) from the input.

Always use torque wrench and gauge tools for connecting RF connectors.

Follow proper RF cable and connector care

Avoid repeated bending of cables. A single sharp bend can damage a cable instantly.

Limit the number of connections and disconnections to reduce wear.

Inspect the connectors prior to use; look for dirt, nicks, and other signs of damage or wear. A bad connector can ruin the good connector instantly.

Clean dirty connectors to prevent poor electrical connections or damage to the connector.

Ensure proper grounding

Proper grounding of the connected instruments 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 for proper temperature and humidity

Keep power sensor in a clean and dry environment. Temperature for typical storage condition is between –40 and 75 °C, humidity < 95 % RH.