## Quick Start Guide

Performing amplifier, mixer, or other sensitive DUT measurements accurately and correctly depends on proper setup and appropriate calibration. Power calibration using power sensors at the DUT calibration plane ensures precise results.

Copper Mountain Technologies VNAs support the following external power sensors:

| Power Sensor | Designation in the VNA Software | Connection Type | Additional SW |
|---|---|---|---|
| R&S®NRP-Z Power Sensors | R&S NRP-Z USB Power Sensors | USB | R&S®NRP-Toolkit for Windows  VXIplug&play x64 or x86  driver rsnrpz |
| R&S®NRVS Power Meter plus R&S®NRV-Z Power Sensors | R&S NRVS GRIB Power Meter | GPIB or USB via GPIB/USB Adapter | VISA Library from any vendor (visa32.dll)  GPIB/USB Adapter driver (if needed) |
| R&S®NRPxxT Thermal Power Sensor | R&S NRPxT USB Power Sensor | USB | R&S®NRP-Toolkit for Windows  VISA Library from any vendor (visa32.dll) |
| NI USB-568x RF Power Sensors | NI USB-568x Power Sensors | USB | NI USB-568x driver (ni568x.dll) |
| LadyBug USB Power Sensors (LB478A, LB479A, LB480A, LB559A, LB579A, LB589A) | LadyBug LBxxxx USB Power Sensors | USB | Not needed (included in the VNA software installer) |
| LadyBug LB59XX USB Power Sensors | LadyBug LB59xx USB Power Sensors | USB | VISA Library from any vendor (visa32.dll) |
| Keysight U848x Power Sensors | Keysight U848x USB Power Sensors | USB | VISA Library from any vendor (visa32.dll) |
| Keysight U200x Power Sensors | Keysight U200x USB Power Sensors | USB | VISA Library from any vendor (visa32.dll) |

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## Selecting Appropriate Power Sensor

To select the power meter: **System > Misc Setup > Power Meter**

NI USB-568x requires Com port setting. R&S NRVS power meter requires GPIB address settings. These settings are configured after choosing the power meter.

## Checking Power Sensor Connection

To check the power meter connection: **System > Misc Setup > Check Connection**

## Power Calibration

After connecting the sensor to one of the ports:  **Calibration > Power Calibration > Select Port**

To zero power meter**: Calibration > Power Calibration > Power Sensor Zero Correction**
Power meter sensor can be connected to the port, as during zero setting the output signal of the port is turned off.

To execute power calibration: **Calibration > Power Calibration > Take Cal Sweep**

After the power calibration is complete, power correction automatically turns on.



To enable/disable power correction: **Calibration > Power Calibration > Correction**

## Loss Compensation Table

The loss compensation function allows the user to apply compensation for unwanted losses produced between the power meter and the calibrated port in the process of power calibration. To have the losses compensated the Loss Compensation function needs to be enabled and table would have to be filled out. Linear interpolation will be applied to the losses in the intermediary frequency points. The loss compensation table is defined for each port individually.

**Calibration > Power Calibration > Loss Compen – ON**

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To enable the loss compensation function: **Calibration > Power Calibration > Loss Compen > Compensation**

To add a new row to the loss compensation table: **Calibration > Power Calibration > Loss Compen > Add**

| | Frequency | Loss |
|---|---|---|
| 1 | 300 kHz | 0.1 dB |
| 2 | 1 GHz | 0.2 dB |
| 3 | 2 GHz | 0.4 dB |
| 4 | 3 GHz | 0.5 dB |
| 5 | | |

To delete highlighted row: **Calibration > Power Calibration > Loss Compen > Delete**

To clear the table: **Calibration > Power Calibration > Loss Compen > Clear Loss Table**

To save the table into a *.lct file: **Calibration > Power Calibration > Loss Compen > Export Loss Table**

To open the table from a *.lct file from the hard: **Calibration > Power Calibration > Loss Compen > Import Loss Table**