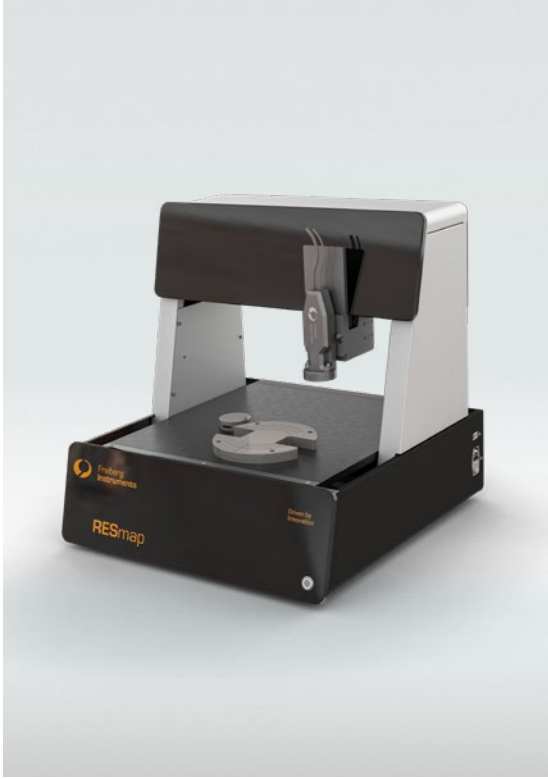
Freiberg
Instruments

RESmap

Make Non-Contact Measurements of Low Resistivity Boules and Wafers with Unparalleled Repeatability

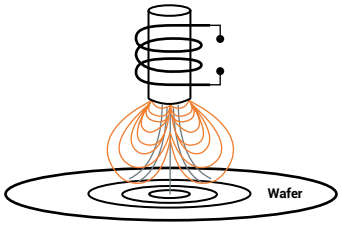


High Resolution Resistivity Mapping Tool for process control and quality assurance measurements

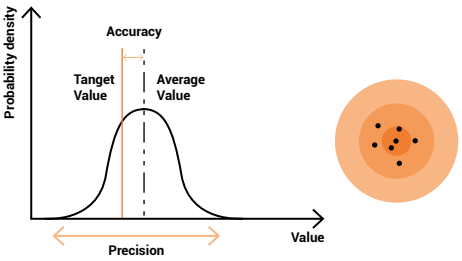
Materials

Ge,Si, SiC, InP, GaAs, GaN, InAs and more

silicon, germanium, compound semiconductors, wide bandgap materials, metals, conductive oxides & nitrides



Measurement principle of eddy current sensor



Bull´s eye chart management for maximum accuracy and precision

Features

Contact free measurement and imaging of the resistivity
High frequency eddy current sensing principle with integrated IR temperature sensor to correct for temperature variations of the sample

Signal sensitivity
High signal sensitivity, based on the coil frequency readout (patent pending), for accurate and reliable resistivity measurements with high reproducibility and repeatability

Measurement time
< 3s for the measurement and < 1s between measurements

Measurement speed
< 30s for a 200 mm wafer/ingot, 9 points

Multi points measurement and mapping display
with maximum 9999 points

Material form factor
Flat or slightly curved wafers, boules, ingots slabs, blanks and thin films

X-Y placement resolution	≥ 0.1 mm
Edge exclusion	5 mm

Reliability
modular, compact bench top instrument design for high reliability and uptime > 99%

Repeatability of resistivity measurement
≤ 0.15%, based on Material System Analysis (MSA) using ANOVA Gage R&R methods

Contact German Office
Mr. Ing. Thanga Kumar
sales@freiberginstruments.com
+49 3731 419 54 0

Freiberg Instruments GmbH
Delfter Str. 6, 09599 Freiberg
Saxony, Germany

Contact Shanghai Office
Ms. Yan Lu
+86 21 642 005 70
sales@freiberginstruments.com.cn

Freiberg Shanghai Instruments Co., Ltd.
Room 602-2, Building 3, Lane 288, Qianfan Road
Songjiang District
201600 Shanghai, China

RESmap

Further technical specifications and configuration options

Prepared for Automation
different platforms available

Measurement method conforms
with SEMI MF673

Data and data validity checked
using NIST standards

Accuracy over calibration
interval ±1%

Integrated IR temperature sensor
(±0.1°) to allow reporting resistivity at a standard temperature, different from the actual temperature of the sample

Sample thickness correction for
samples where the penetration depth of the high frequency signal is larger than the penetration depth

Power requirements
100-250 VAC, 5 A

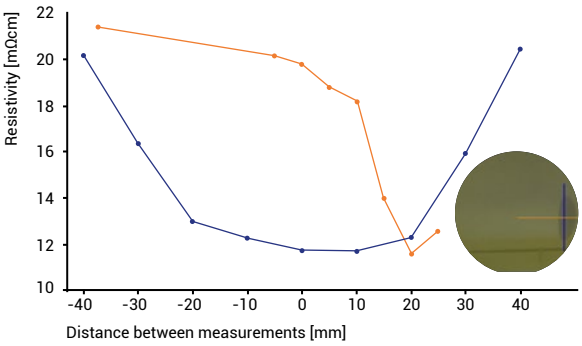
Dimensions (w/h/d)
465 x 550 x 600 mm

Software control
standard PC with Window 10 or latest, 2 Ethernet ports

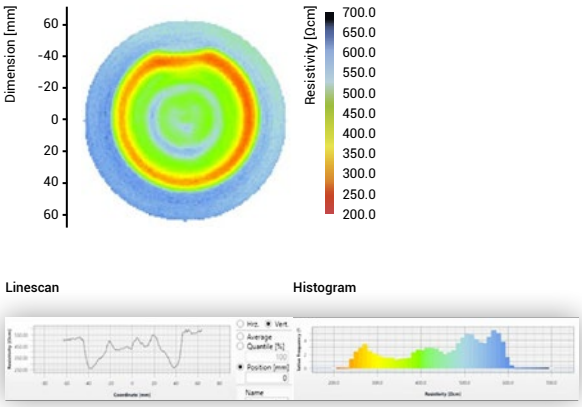
User-friendly and advanced operating software with

- Resistivity measurement recipes
- Export/import functions and raw data access
- Multi-level user account management
- Overview over all performed measurements
- Mapping options (line, cross, star, full map, topography, user defined pattern)
- Package of analysis functions; statistics, variance analysis, temperature correction functions and library
- Remote accessibility
  Internet based based system allows remote operation and technical support from anywhere in the world

Application examples



4H-SiC wafer resistivity variation measurement across the growth facet area



Si wafer resistivity variation measurement – mapping, distribution & line scans