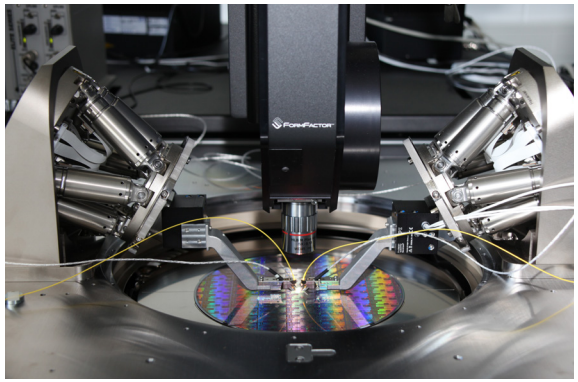
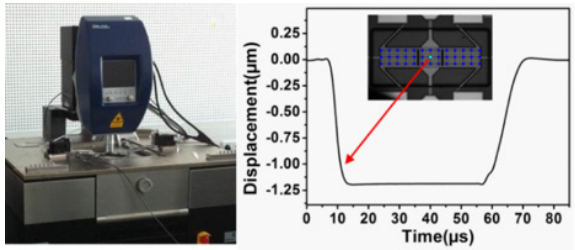
Novel Wafer-Level Characterisation Techniques

- Si Photonics device characterization
  - C-,L- and O-band
  - Passive and active



- Photonic BiCMOS functional test
- Electromechanical RF-MEMS Characterization based on Laser-Doppler Vibrometry



Get support for your challenging DC and RF measurement tasks!

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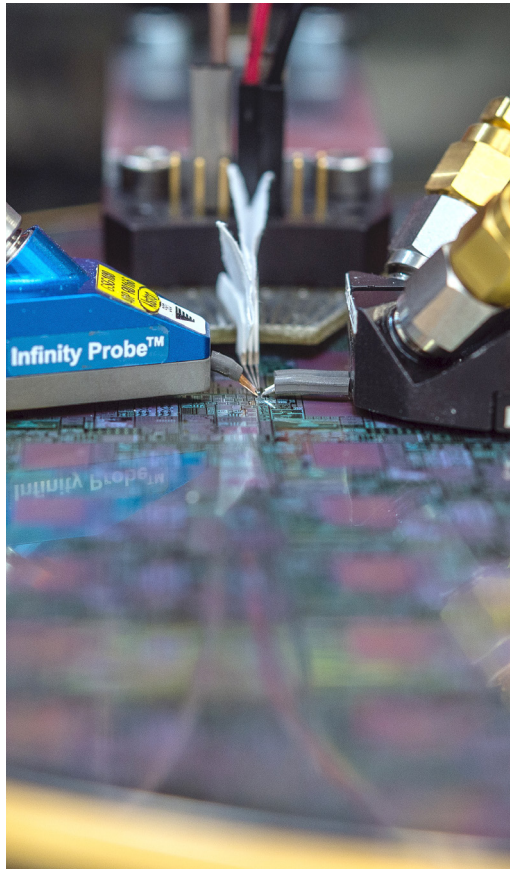
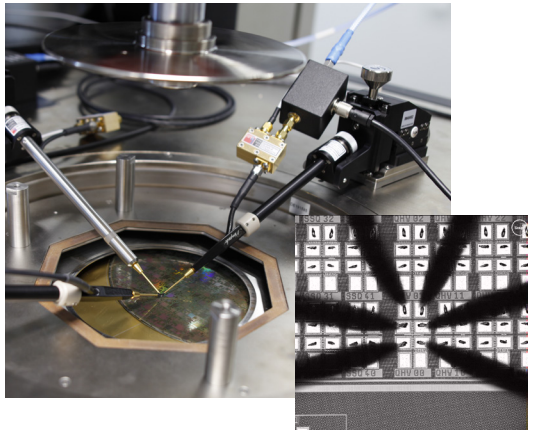
03/2023

On-Wafer Measurement Service



Device Measurements



MEASUREMENT CAPABILITIES

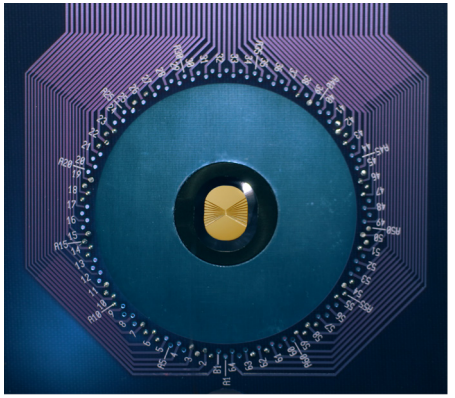
- DC down to 1 fA current resolution
- True Kelvin measurements (force/sense)
- 48 channel low leakage switch matrix
- C(V) from 20 Hz to 1 MHz
- TLP ESD characterization up to 7 kV HBM equivalent
- Impedance up to 3 GHz
- S-Parameters up to 170 GHz (500 GHz on request)
- 4Port S-Parameters up to 120 GHz
- X-Parameters up to 50 GHz
- Spectrum analysis
- Low frequency noise 0.1 Hz to 10 MHz
- High frequency noise from 2G Hz to 26 GHz
- Wafer size: all sizes ≤300 mm
- Semi-automatic mapping
- Temperature range: -60°C to +300°C (for S-Parameters the temperature range is limited)
- Standard pad configuration for S-Parameters: 100 µm GSG

Functional Testing

FEATURES OF IHP'S VLSI TEST EQUIPMENT

- V93000 SoC High-performance cycle-based production tester
- Tester-per-pin architecture
- Device power supplies:
  - 12 channels: ±8 V, max. 16 A
  - 32 channels: 0-7 V, max. 48 A @3 V
- Up to 320 digital channels:
  - 256 channels with up to 1.6 Gb/s
  - 64 channels (32 diff. pairs) with up to 8 Gb/s
  - 32 channels (16 diff. pairs) with up to 16Gb/s
- Analog resources:
  - 4 waveform generators, max 200 MHz @50 Ms/s
  - 4 digitizers, max 16 bit @300 MHz
- Fully automatic wafer prober
- Wafer size: 125 mm, 150 mm, 200 mm
- Temperature range: -40°C to +150°C

Circuit Measurements



MEASUREMENT CAPABILITIES

- Analog mixed signal
- Analog RF signal

TEST SYSTEMS

- NI PXI test systems
- Tests at elevated temperatures
- Customized test programs
- Automated mapping

SUPPORTED PROBE CARDS

- Cantilever probe cards
- Vertical probe cards with high pin count for flip chip designs
- Customized load boards

RESULT FORMAT

- Electronic maps
- Inked wafers