Microwave measurements

- Coaxial vector network analysers:
  - Agilent PNA-X N5242, 4-port test set,
  - nonlinear measurement of von X parameters 10 MHz to 26.5 GHz,
  - Agilent PNA E8361A: 10 MHz to 67 GHz,
  - 4 port test set 10 MHz to 50 GHz,
  - Pulse test set 200 MHz to 40 GHz;
  - Anritsu MS4630B (10 Hz to 300 MHz)
- Maury-tuner based noise parameter measurement system 1 GHz to 26.5 GHz
- Spectrum analysers
  - 50 GHz (Agilent PSA E4448A),
  - 26 GHz (Rohde & Schwarz FSEM),
  - 32 GHz (Anritsu MS2802A)
- Wafer prober measurements:
  - Suess PM4,
  - Cascade Summit 9000,
  - Evacuated wafer prober Suess MicroTec PMV150 with thermochuck (-40 to 150^{o} C)
- Time domain reflectometer (Tektronix CSA 8000)
- Transient analyser (HP 70820A)
- 1-GHz 2-channel real time oscilloscope (Agilent DSO6102A),
- 11-GHz 4-channel real time oscilloscope (LeCroy SDA 11000),
- 70 GHz sampling oscilloscope (LeCroy SDA 100G)
- Signal source analyser 26.5 GHz (Rohde & Schwarz FSUP)
- Signal sources (e.g. Rohde & Schwarz SMP4 to 40 GHz, SMIQ06B to 6 GHz)
- Optical profilometer “Alicona infinite focus” (resolution: vertically 20 nm, horizontally 600 nm)
- Printed board prototyping with LPKF ProtoMat S103
- Nearfield scanner EMSCAN RFxpert RFX2-62 for quick measurement of the radiation characteristics of planar structures from 300 MHz to 6 GHz
- Compute server Windows und Linux based, available at computing centre of TU Ilmenau
- Simulation tools for CAD of RF circuits: MicroSim (PSpice), Serenade
- Simulation tools for 2D/3D microwave numerical field computations:

  Keysight ADS, Ensemble (MoM), IE3D (MoM), Ansoft HFSS (FEM), CST Microwave Studio (FDTD) including state of the art desktop computers
- Data processing: MatLab with SimuLink tool boxes (The Mathworks)