

Item No.: SO4204-9U

## Course Introduction to microwave technology

### Includes:

- 1 experiment card X-Band-measurement interface: operational frequency 8,0-9,9GHz, logarithmic detection, dynamic range up to 50dB, resolution 16bit
- High quality waveguides:
  - Gunn oscillator with high precision frequency tuning micrometer screw
  - isolator
  - variable attenuator
  - slotted line
  - line displacement record
  - 3-screw transformer
  - waveguide terminator
  - waveguide adapter
  - waveguide short
  - horn aerial 10dB
- Stands and connecting cables
- Aluminum storage case
- CD-ROM with Labsoft-Browser and course software

### **Microwave source**

- Gunn oscillator
- Frequency 8,0..9,9GHz, ultra stable and maintenance-free
- Safety first - low-power emission and measurement only emission
- Overvoltage protection

## Receiver

- X-Band-LNC, frequency range 8...10GHz
- High accuracy measurements with sensitivity up to -75dBm
- Real-time frequency measurement of 8...10GHz signals
- Internal gain approx. 16dB

## Course contents:

- Characteristics of electromagnetic waves
- Gunn oscillator
- LNC receiver
- Recording of current-voltage characteristics
- Transmission line theory and line quantities of unit length
- Wave propagation in waveguides
- Standing waves, shorted waveguide, reflection and matching
- SWR
- Power loss and thermal load
- Measurement of wave distribution along the waveguide with the slotted measurement line
- Propagation of TE and TM waves
- Waveguide dimensions and operating frequency
- Dielectrics in waveguides
- Course duration 4.5 h approx.