

Course Pulse modulation methods PAM, PCM, Delta

Includes:

- 1 Experiment card with PAM PCM modulator
- 1 Experiment card with PAM PCM demodulator
- 1 Experiment card with AMI/HDB3 coder/decoder
- 2 Connection cables (2 mm), 60 cm, red
- Labsoft browser and course software

Course contents:

- Introduction to PAM/PCM/Delta modulation, PAM/PCM/Delta demodulation, time multiplexing
- Shannon's sampling theorem
- Measuring PAM modulated signals over time
- Optimal filtering and anti-aliasing
- Identifying advantages and disadvantages of digital transmission
- Introduction to the principle quantisation of analog signals
- Generation of parallel and serial codes
- Companding methods using A law and μ law
- Determining quantising interval for a PCM transmission by measurement
- Measuring PCM coded signals over time
- Recording logarithmic transfer characteristics with companding according to a law and μ law (13 or 15 segments)
- Measuring PCM time-multiplexed signals over time
- Introduction to the key features of transmission codes
- Introduction to pseudo-ternary codes AMI, HDB3, modified AMI
- Measuring line-coded signals over time: AMI, HDB3 and modified AMI
- Transmission of information on a line along with clocking and synchronisation information
- Clock recovery and phase jitter
- Introduction to data packet formats for ISDN layer 1 (Integrated Services Digital Network)
- ISDN layer 1, investigation of position and function of frames and bits
- Investigation of a 2 channel transmission with control channel at data rates of 64 k bits per channel
- Course duration 4 h approx.

