

Course AM/FM modulation/demodulation

Includes:

- 1 Experiment card with Colpitts/Hartley oscillator
- 1 Experiment card with AM modulator/demodulator, AM modulator switchable between AM/DSB, product demodulator and diode detector
- 1 Experiment card with FM modulator/phase demodulator
- Labsoft browser and course software

Course contents:

- Introduction to the principle of amplitude modulation by measuring AM modulator signals over time
- Recording the modulation trapezoid for various modulation depths
- Demodulation of an amplitude modulated signal
- Introduction to the principle of a diode detector
- Demonstration of double side-band modulation (DSB)
- Tuning the modulator to minimise residual carrier
- Recording signal, phase shift and modulation trapezoid for DSB
- Demonstration of single side-band modulation (SSB)
- Recovery of the original signal from an SSB signal with the help of an integrated double balanced mixer
- Demonstration of the principle of frequency modulation and demodulation
- Explanation of the term "instantaneous frequency" for a modulated signal
- Determination of the maximum frequency deviation in an FM signal
- Effect of low-frequency amplitude and frequencies on an FM signal
- Explanation of the modulation index
- Explanation of the relationship between LF amplitude, LF frequency and phase shift
- Ratio detector and phase detector (Foster-Seeley)
- Recovery of a modulated signal by a phase demodulator
- Course duration 3 h approx.

