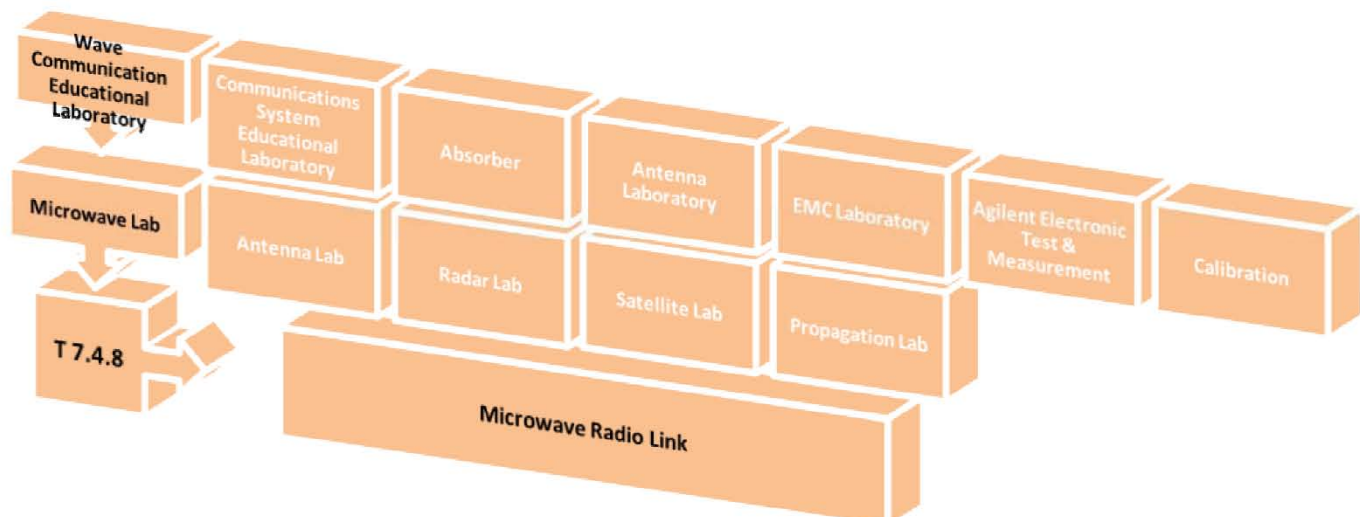




Experimental setup for signal transmission with microwaves. PCM base-band signals are modulated onto microwaves with the help of the PIN modulator. The parabola antennas shape the line-bound microwaves into free-space waves that make it possible to transmit signals from the transmitter to the receiver. The receiver is able to restore the base-band signal through incoherent detection at the waveguide detector. The weak reception signal is sent to a broadband amplifier (VIDEO, section of the Gunn Supply with SWR meter 737 021).

Topics

- Setup of primary exciters for transmitter and receiver
- Aligning parabola antennas
- Matching for maximum signal reception
- Test of modulation/demodulation equipment
- Commissioning the microwave link



Data transmission with microwaves

One commercial application for microwave technology is the transmission of data via microwave links in e.g. wide area networks (WAN) as an economic alternative to cables and satellites. A combination of the training systems T 7.2.2.1 Pulse Code Modulation and T 7.4 Microwave Technology provide a laboratory set up for terrestrial microwave links which is closely associated with real systems.



Crude oil from the sea

Microwave technology is common practice in oil production too. Offshore oil platforms in coastal areas are held precisely in place over their bore holes with the help of satellite-supported navigation systems (GPS = Global Positioning System).

EQUIPMENT SET LIST

Microwave Radio Link, Part 1: RF components

QUANTITY	CAT. NO	DESCRIPTION
1	737 01	Gunn Oscillator
1	737 021	Gunn Power Supply with SWR Meter
1	737 05	PIN Modulator
1	737 06	Isolator
1	737 08	Waveguide Detector
1	737 135	3-Screw Transformer
2	737 20	Small Horn Antenna
2	737 450	Dish Antenna
1	524 010SUSB	CASSY-Starter USB
1	568 692	Book: Circuitry with Wave Guide Components

Microwave Radio Link, Part 2: Modulation techniques

QUANTITY	CAT. NO	DESCRIPTION
1	736 061	PAM Modulator
1	736 071	PAM Demodulator
1	736 101	PCM Modulator
1	736 111	PCM Demodulator
1	564 002	Book: Pulse Code Modulation

