

Teknikit - Analogue & Digital Telecommunications

The **Teknikit** range of Analogue and Digital Telecommunications Trainers is a combination of open board trainers and **Discovery II** computer assisted learning software. **Teknikit** Telecommunications Trainers can be connected to a PC either via the **Teknikit** Console 92-100-1 or the Rapid Access Terminal 53-100.

Teknikit

The unique **Discovery II** software provides a complete course of interactive instruction including:

- **Real-time Measurement**
- **Virtual Instrumentation**
- **Easy-to-use test points**

Background, theory, experimental assignment procedure and questions are all included within the **Discovery II** software framework.

Discovery II software is browser-based and is fully compatible with the Feedback management and student assessment package. A range of Computer Assisted Learning (CAL) packages is also available and provides the underpinning background knowledge to support the learning process.

Discovery II includes all of the instrumentation necessary to carry out the large number of experiments that can be executed.

These are:

- Oscilloscope**
- Spectrum Analyser**
- Frequency Meter**
- Voltmeter**
- XY Recorder**
- Bit Error Rate (BER) Meter**

However, the inclusion of easy-to-use test points on the workboards means that conventional instruments can also be used.



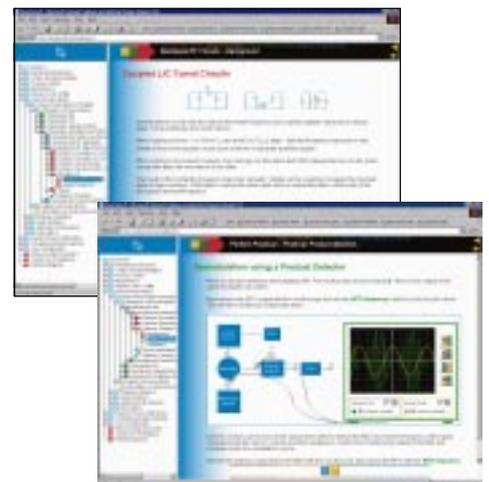
The **Teknikit** Analogue & Digital Telecommunications trainers are available with units covering:

Analogue

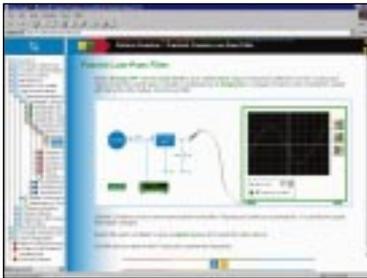
- **Signal Sources**
- **Tuned Circuits and Filters**
- **Amplitude Modulation**
- **Frequency Modulation**

Digital

- **Sampling and Formatting**
- **Modulation and Keying**
- **Pulse Code Modulation and Link Analysis**



Analogue Communications Workstation 53-001



A PC based workstation using **Discovery II** software (53-921), fast A/D and D/A interface unit (53-100) and Analogue workboards.

Signal Sources 53-110

Curriculum Coverage

- Wein Bridge Oscillator
- L-C Oscillator
- Crystal Oscillator
- Multivibrator

Amplitude Modulation 53-130

Curriculum Coverage

- Amplitude Modulator
- Full Carrier
- Supressed Carrier
- Filters
- Demodulation



Tuned Circuits & Filters 53-120

Curriculum Coverage

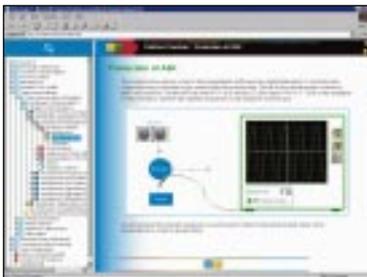
- Active and Passive Filters
- Tuned Circuits
- Crystal Filters
- RF Bandpass Filters
- Tuned Amplifier with AGC

Frequency Modulation 53-140

Curriculum Coverage

- Frequency Modulator
- Spectrum
- Limiting
- Detection
- Quadrature Demodulator
- PLL Detector

Digital Communications Workstation 53-002



A PC based workstation using **Discovery II** software (53-922), fast A/D and D/A interface unit (53-001) and Digital workboards.

Sampling & Data Formatting 53-150

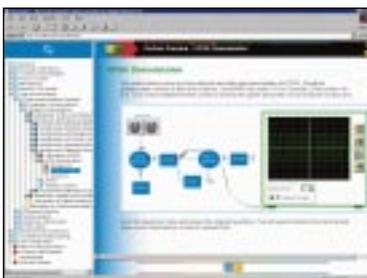
Curriculum Coverage

- Sampling and Aliasing
- Analogue to Digital Conversion
- Data Formatting
- Manchester Coding
- Data Recovery
- Synchronisation

Pulse Code Modulation 53-170

Curriculum Coverage

- Time Division Multiplex (TDM)
- Pulse Code Modulation (PCM)
- Word and Frame Forms
- Generation and Detection of Parity
- Attenuation and Noise Effects
- CRC and Error Rate Analysis
- Effects of Data Formatting and Keying Methods on Error Rate
- Data Transmission Efficiency Consideration
- Transmission through a Fibre Optic link



Modulation & Keying 53-160

Curriculum Coverage

- Amplitude Shift Keying (ASK)
- Frequency Shift Keying (FSK)
- Phase Shift Keying (PSK)
- Quadrature Phase Shift Keying (QPSK)
- Differential Phase Shift Keying (DPSK)
- Differential Quadrature Phase Shift Keying (DQPSK)

NOTE: A PC is required to operate all workstations.

Analogue & Digital Communications Workstation 53-003

A combination of above Workstations for Analogue & Digital Communications with appropriate software.

For further information on these and other equipment in the Feedback range please contact

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