

### CTO900

#### Curriculum Coverage:

##### Basic Experiments Fibre Optics

- Fibre optic analogue links
- Digital link
- Losses in optical fibre
- Effect of EMI interference
- Numerical aperture measurement

##### Multiplexing & Digital telecoms

- Time Division Multiplexing
- Framing in Time Division Multiplexing
- Voice coding - A-law
- Pulse broadening in fibre optic communications

##### Advanced Experiments

- Interfacing 8, 64, 256 kbs synchronous channels and at less than 8 kbs
- Asynchronous channel interfacing using oversampling and bit stuffing



The Optical Fibre Trainer is a powerful, versatile and cost-effective experimental kit used to train students in the principles of fibre optics, through the basics of digital base and communications, upto advanced experimentation and development in fibre optic and digital communications.



Using the standard kit it can be used to cover established digital communication subjects such as; Time Division Multiplexing, Transmitter and Receiver operation, PCM voice coding at (64Kbits/sec), Manchester coding/decoding for timing recovery, Voice coding - A-law and Pulse broadening in Fibre optic communications.

Channels can be switched at transmitter and receiver using time-switching principles. It is very easy to interface to external circuitry - all required inputs and outputs are provided and extensively documented.

The kit is supplied with a comprehensive Laboratory manual that clearly explains experiments covering the theory of fibre optics for both Analogue and digital communications.

It is supplied with all the accessories required to conduct the basic experiments and to interface with external circuitry.

#### Features:

- Eleven usable 64kbps channels
- User definable frame marker (two alternating 8-bit markers - can be set to be CCITT (UTIT) compatible)
- On-board, two digitised voice channels, one 8-bit data channel and several user expansion channels
- Demonstrates fully operational integrated voice/data fibre optic communication link
- Time Division Multiplexing of voice, data and user-defined data streams
- Modular design, enables configuration with user designed modules
- Wide scope for experimentation through use of external circuitry interfaced to kit
- Comprehensive manual describes wide range of experiments
- Ready-to-use kit, complete with accessories