

OFT



Optical Fibre and Digital Communication Trainer

The OFT Optical Fibre Trainer is a powerful, versatile and cost-effective experimenter kit, usable to train personnel at all levels – from beginner to expert.

The OFT Trainer facilitates demonstration, training & experimentation in basic and advanced concepts including:

- Principles of fibre-optic communications
- Basics of digital baseband communications
- Advanced experimentation and development in fibre optic & digital communications

It is suitable for training of:

- R & D Personnel in research labs
- Students at B.S. & M.S. (EE) levels in engineering colleges
- Technical Training Centres - Telecom, Industry R & D, Staff Training, etc.
- Students in Polytechnics and Science colleges



DESCRIPTION

- 850nm and 650nm fibre links
- Demonstrates established digital communication techniques such as Time Division Multiplexing, Transmitter & Receiver operation, PCM voice coding at (64 Kbps), Manchester coding/decoding for timing recovery, etc.
- Channels switchable at transmitter & receiver using time-switching principles
- Easy interface to external circuitry - all required inputs and outputs provided and extensively documented
- Power available to external circuitry as well

FEATURES

- Eleven usable 64 Kbps channels
- User definable frame marker (two alternating 8-bit markers - can be set to CCITT compatible)
- Two on-board digitized voice channels, one 8-bit data channel and several user-expansion channels
- Demonstrates fully operational integrated voice/data fibre-optic communication link
- RS-232C communications module optional - demonstrates computer communications over fibre
- Time Division Multiplexing of voice, data & 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 ñ can form basis of courses
- Ready-to-use kit comes complete with accessories

EXPERIMENTS

Can be done using just the standard kit.

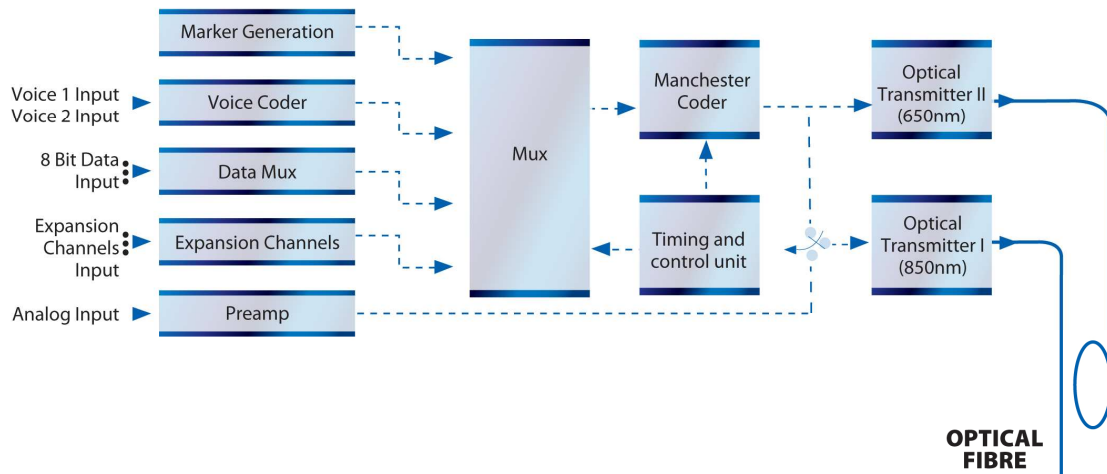
1. Fibre Optic Experiments

- Fibre Optic Analog Links
- Digital Link
- Losses in Optical Fibre
- Effect of Electromagnetic Interference
- Numerical Aperture Measurement

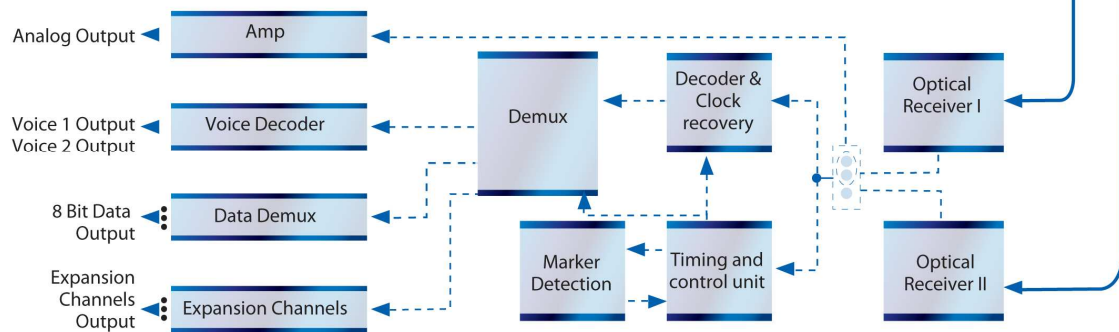
2. Multiplexing and Digital

- Time Division Multiplexing
- Framing in Time Division Multiplexing
- Manchester Coding/Decoding – Timing recovery
- Voice Coding – A-Law
- Pulse broadening in Fibre Optic Communication

TRANSMITTER



RECEIVER



SPECIFICATIONS

Electrical Section

No. of Channels: 12 (64 Kbps) channels, including one slot for 8-bit Marker

Frame Marker: Two 8-bit markers in alternate frames, user-settable,
Can also be set to CCITT standard

Coding/Decoding: Manchester coding/decoding

Data Rate: 768 Kbps, 1.536 Mbits/sec after Manchester coding

Voice PCM Channels: 2 (2 telephone handsets provided)

Voice coding: A-Law

Analog Input Voltage: 1 V (pp)

Analog Input Bandwidth: 100 KHz

Optical Section

Wavelengths: 850nm and 650nm

FWHM Spectral Width: 100nm

Fibre: 1000 micron Plastic Fibre (1 m and 3 m lengths Included)

Max Link Length: 5 m for 850nm link, 30m for 650nm optical digital link

Max Data Rate: 2 Mbits/sec (NRZ)

ORDERING INFORMATION

Item

1. Optical Fibre & Digital Communications Trainer
2. RS-232C Interface Module for OFT (optional)
3. 20 m 1000 micron plastic fibre link (optional)

Part#

OFT
OFT-RS232C
OFT-LINK



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Feedback reserves the right to change these specifications without notice.