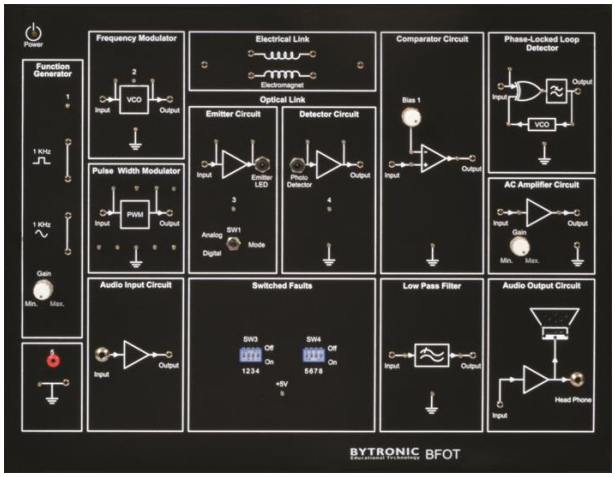
BFOT – Basic Fibre Optic Trainer



Key Features:

- Simple analogue and digital trans-receiver
- 660nm channel with transmitter and receiver
- AM-FM-PWM modulation and demodulation
- On board function generator
- Crystal controlled clock
- Functional blocks indicated on-board mimic
- Input-output and test points provided on board
- On board voice link
- Numerical aperture measurement jig and mandrel for bending loss included
- Switched faults on transmitter and receiver

The BFOT01 is designed to teach the basics of Fibre Optics. The unit demonstrates properties of Fibre Optics transmitter and receiver, characteristics of Fibre Optic cables and different modulation/demodulation techniques. A number of experiments are included in the workbook and the BFOT01 can also be used to demonstrate various digital communication techniques via Fibre Optic link using the range of digital communications trainers.

Experiments

- Fibre optic analogue link
- Fibre optic digital link
- The relationship between the input signal and received signal in a 650nm fibre optic analogue/digital link
- AM system using analogue and digital inputs
- FM and PWM modulation systems
- Propagation loss in optical fibre
- Bending loss in optical fibre
- Measurement of numerical aperture
- Characteristics of E-O converter (LED)
- Characteristics of fibre optic communications link
- Measurement of power using optical power meter
- Characteristics of E-O converter using optical power meter
- Propagation loss using optical power meter
- Setting of fibre optic voice link using AM-FM and PWM
- Study of switched fault in AM-FM and PWM systems
- Determination of the bit rate supported by the fibre optic link
- Determination of the sensitivity of the fibre optic link
- Determination of power margins (Power budget)
- V-I characteristics of photo LED
- Characteristics of photo detector
- Measurement of bit error rate

Specification

Transmitter	Fibre optic LED 660nm
Receiver	Fibre optic photodetector
Modulation Techniques	AM, FM and PWM
Drivers	1 with analogue and digital modes
Clock	Crystal controlled clock 4.096MHz
PLL Detector	1
AC Amplifier	1
Comparators	1
Filters	4th order Butterworth, 3.4KHz cut off freq.
Analogue Band Width	350KHz
Digital Band Width	2.5MHz
Function Generator	1) 1KHz Sine wave (amplitude adjustable) 2) 1KHz square wave (TTL)
Voice Link	Fibre Optic voice link using microphone and speaker (built-in)
Switched Faults	4 in transmitter and 4 in receiver
Fibre Optic Cable	Connector type standard SMA
Cable Type	Step indexed multimode PMMA plastic cable
Core Refractive Index	1.492
Clad Refractive Index	1.406
Numerical Aperture	Better than 0.5
Acceptance Angle	Better than 60 deg.
Fibre Diameter	1000 microns
Outer Diameter	2.2mm
Fibre Length	0.5m and 1m
Test Points	29
Power Supply	110-220V ± 10%, 50/60Hz
Approximate Dimensions	W326 D52 H252mm
Approximate Weight	1kg

Ordering Information

Model Number:	BFOT
Consists of:	Elementary Fibre Optics Trainer
	Manual
	Power Cord
	NA Measurement Jig
	Mandrel
	Fibre Cables
	Microphone
	Headphones
	Set of patch cables

Notes.

1. Specification is subject to change without notice.

2. All dimensions are in mm unless otherwise stated

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