

Fiber Optics Trainer is designed to learn the basics of Fiber Optics. The trainer demonstrates properties of Fiber Optics Transmitter & Receiver, characteristics of Fiber Optics Cable and different types of Modulation / Demodulation techniques. A large number of experiments are included in the workbook and many more can be performed. It can also be used to demonstrate various Digital Communication techniques via Fiber Optic link using Digital Communication Trainers.



Technical Specifications

Transmitter	: 1 No., Fiber Optic LED having peak wavelength of emission 660 nm
Receiver	: 1 No., Fiber Optic Photodetector
Modulation Techniques	: 1. AM 2. FM 3. PWM
Drivers	: 1 No. with Analog & Digital modes
Clock	: Crystal Controlled Clock 4.096 MHz
PLL Detector	: 1 No.
AC Amplifier	: 1 No.
Comparator	: 1 No.
Filters	: 1 No. 4 order Butterworth, 3.4 KHz cut-off Frequency
Analog Band Width	: 350 KHz
Digital Band Width	: 2.5 MHz
Function Generator :	
	1) 1 KHz Sine wave (Amplitude adjustable)
	2) 1 KHz square wave (TTL)
Voice Link	: F. O. Voice link using microphone & speaker (built in)
Switched Faults	: 4 in transmitter & 4 in Receiver
Fiber 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.
Fiber Diameter	: 1000 microns
Outer Diameter	: 2.2 mm
Fiber Length	: 0.5 m & 1 m
Test Points	: 29
Inter connections	: 4 mm sockets
Power Supply	: 220 V \pm 10 %, 50 Hz / 60 Hz on request
Power Consumption	: 3 VA (approx.)
Accessories Included	: Line cord, Manuals, NA Measurement Jig, Mandrel, Fiber Cables, Microphone, Headphone, Set of Patch Cords
Optional Accessories	: Optical Power Meter, 5 meter fiber cable, 10 meter fiber cable.

- ◆ Simplex Analog and Digital Transreceiver
- ◆ 660 nm channel with Transmitter & Receiver
- ◆ AM-FM-PWM modulation / demodulation
- ◆ On board Function Generator
- ◆ Crystal Controlled Clock
- ◆ Functional Blocks indicated on-board mimic
- ◆ Input-output & test points provided on board
- ◆ On board voice link
- ◆ Built in DC power supply
- ◆ Numerical Aperture measurement jig and mandrel for bending loss included
- ◆ Switched faults on Transmitter & Receiver
- ◆ Operating manual contains theory of Fiber Optics Technology, experiments and glossary of Terms
- ◆ Experiments that can be performed

Experiments that can be performed

- ◆ Setting up Fiber Optic Analog & Digital Link
- ◆ AM system using Analog & Digital Input Signals
- ◆ Frequency Modulation System Pulse Width Modulation System
- ◆ Study of Propagation Loss in Optical Fiber
- ◆ Study of Bending Loss
- ◆ Measurement of Numerical Aperture
- ◆ Characteristics of E-0 Converter (LED)
- ◆ Characteristics of Fiber Optic Communication Link
- ◆ Setting of Fiber Optic Voice Link using Amplitude, Frequency & PWM Modulation
- ◆ Study of Switched Faults in AM, FM & PWM system
- ◆ Propagation loss using Optical Power Meter

Note: Specifications are subject to change.

Tesca Technologies Pvt. Ltd.

IT-2013, Ramchandrapura Industrial Area, Sitapura Extension,
Near Bombay Hospital, Vidhani Circle, Jaipur-302022, Rajasthan, India,
Tel: +91-141-2771791 / 2771792; Email: info@tesca.in, tesca.technologies@gmail.com
Website: www.tesca.in