

Elementary Fiber Optics Trainer ST2501



Elementary Fiber Optics Trainer ST2501 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 using ST2501 trainer.

ST2501 can also be used to demonstrate various Digital Communication techniques via Fiber Optic link using Scientech Digital Communication Trainers.

- Simplex Analog & Digital Trans-receiver.
- Single Module covering large number of experiments including experiments with Optical Power Meter.
- 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 and 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.
- Students workbook and Operating Manual contains theory of Fiber Optics Technology, experiments and Glossary of Fiber Optics Terms.



... the best learning tools !

Elementary Fiber Optics Trainer ST2501

Chapters Included in Manual :

- Introduction to Fiber Optics
- Theory of Fiber Optics
- Optical Fiber Communication System
- Advantages of Fiber Optic System
- Characteristics of Optical Fiber
- Glossary of Fiber Optic terms

Experiments That Can Be Performed :

- Setting up Fiber Optic Analog Link
- Setting up Fiber Optic Digital Link
- AM system using Analog Input Signal
- AM system using Digital Input Signal
- 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-O Converter (LED)
- Characteristics of Fiber Optic Comm. Link
- Measurement of optical power using optical power meter
- Characteristics of E-O converter using optical power meter
- Measurement of propagation loss in optical fiber using optical power meter
- Setting of Fiber Optic Voice Link using Amp. Mod
- Setting of Fiber Optic Voice Link using Freq. Mod
- Setting of Fiber Optic Voice Link using PWM
- Study of Switched Fault in AM system
- Study of Switched Fault in FM system
- Study of Switched Fault in PWM system
- and many more...**

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.
PLL detector : 1 No.
Comparator : 1 No.
Filters : 1 No. 4th order Butterworth, 3.4 KHz cut-off freq.
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 : 41
Inter connections : 4 mm. sockets
Dimensions : W 325 x H 90 x D 255 mm.
Weight : 2.8 kg. approx.
Power Supply : 230V \pm 10%, 50Hz.
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.

subject to change

Other Fiber Optic Products & Trainers :

- ★ Advanced Fiber Optic Trainer ST2502.
- ★ Laser Fiber Optic Trainer.
- ★ Fiber Optic Connectorization kits, FOK601 & 602.
- ★ PC based OTDR.
- ★ Fiber Optic Training Videos.
- ★ LASER and LED Light sources.
- ★ Optical Power Meters.
- ★ Patch cords and Connectors.
- ★ Tools and Consumables.

SciencTECH Digital Communication Trainers :

- ST2101** : Sampling & Reconstruction Trainer.
- ST2102** : TDM pulse Amplitude Mod. / Demod. Trainer.
- ST2103** : TDM PCM Transmitter Trainer.
- ST2104** : TDM PCM Receiver Trainer.
- ST2105** : Delta, Adaptive Delta & Delta sigma Mod./Demod. Trainer.
- ST2106** : Data Formatting & Carrier Modulation Transmitter Trainer.
- ST2107** : Carrier Demod. & Data Reformatting Receiver Trainer.
- ST2108** : Audio input module.
- ST2109** : Audio output module.
- ST2110** : PAM / PWM / PPM Trainer.

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