

PHYSICS OF FIBER OPTICS TRAINER is designed to learn basic physics of fiber optics including fiber end preparation. Students can also study the construction of transmitter & receiver to form analog & digital link. Ample number of experiments can be performed with this kit by referring to the exhaustive manuals provided with the kit.

List of Experiments:

- 01 Light traveling around corners in an Optical Fiber
- 02 Coloured light traveling down an Optical Fiber
- 03 Photo detector detecting light
- 04 LED output as a function of a current
- 05 LED shining light into
- 06 Transmission of light between two fibers
- 07 Transmission through a gap between fibers
- 08 Fiber Optic transmission sensor
- 09 Fiber Optic reflection sensor
10. Measuring Losses in the fiber
 - 10.1 Measurement of propagation loss in the Fiber
 - 10.2 Measurement of connector loss
 - 10.3 Fiber bending loss
11. Measurement of Numerical Aperture of Optical Fiber
12. Setting up of Fiber Optic Analog Link
13. Setting up of Fiber Optic Digital Link
14. Setting of Fiber Optic Voice Link.
15. Switch Faults Study
 - 15.1 Effect of switch fault 1 in function generator section
 - 15.2 Effect of switch fault 2 in audio pre amplifier section
 - 15.3 Effect of switch fault 3 in signal strength section
 - 15.4 Effect of switch fault 4 in audio amplifier section



Features:

01. On-board Function Generator.
02. Transmitter : 1 No.
03. Receiver : 2 Nos
04. Fiber Optic Analog Link.
05. Fiber Optic Digital Link.
06. Signal strength indicator.

Technical Specifications:

- | | | |
|---------------------------------|---|--|
| 01. Transmitter | : | 1 No. LED. Peak wavelength of emission 635 nm Red visible. |
| 02. Receiver | : | 2 Nos. silicon photo detectors |
| 03. Modulation | : | Intensity modulation. |
| 04. Driver Circuit | : | Analog and digital configuration for 635 nm LED. |
| 05. Analog Bandwidth | : | 35KHz. |
| 06. Digital Bandwidth | : | 50KHz. |
| 07. On-Board Function Generator | : | |
| 08. Sine Wave & TTL Square Wave | : | |
| 09. Frequency Range | : | 1Hz to 10Hz, 10Hz to 100Hz, 100Hz to 1 K H z , 1 K H z t o 10KHz |
| 10. Amplitude | : | 0 to 4Vpp. (Except Square) |
| 11. Voice Communication | : | Fiber Optic voice link using dynamic MIC & SPEAKER |
| 12. Signal strength indicator | : | 8 LED's provided to measure optical power. |
| 13. Fiber Optic Cable: | | |
| 14. Type | : | 1000 micron Step Index, Multimode Plastic Fiber |
| 15. Fiber Lengths | : | 1&5 Meter. |
| 16. Power Supply | : | GND, +5V, +12V, -12V at 100mAINT. |

Accessories:

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|--|---|-------------|
| 01. Red Short Links | : | 10 Nos. |
| 02. Crocodile Links | : | 02 Nos. |
| 03. Plastic Fiber 1 Meter (with connector) | : | 01 No. |
| 04. Plastic Fiber 5 Meter (with connector) | : | 01 No. |
| 05. N.A. Jig & N.A. Scale | : | 01 No. Each |
| 06. Connection Sleeves (Splicing unit) | : | 01 No. |
| 07. Microphone | : | 01 No. |
| 08. Speaker | : | 01 No. |
| 09. Experimental Manual | : | 01 No. |
| 10. Mandrel | : | 01 No. |

Other Apparatus Required:

01. Cathode Ray Oscilloscope 20MHz

Note: Specifications are subject to change.

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