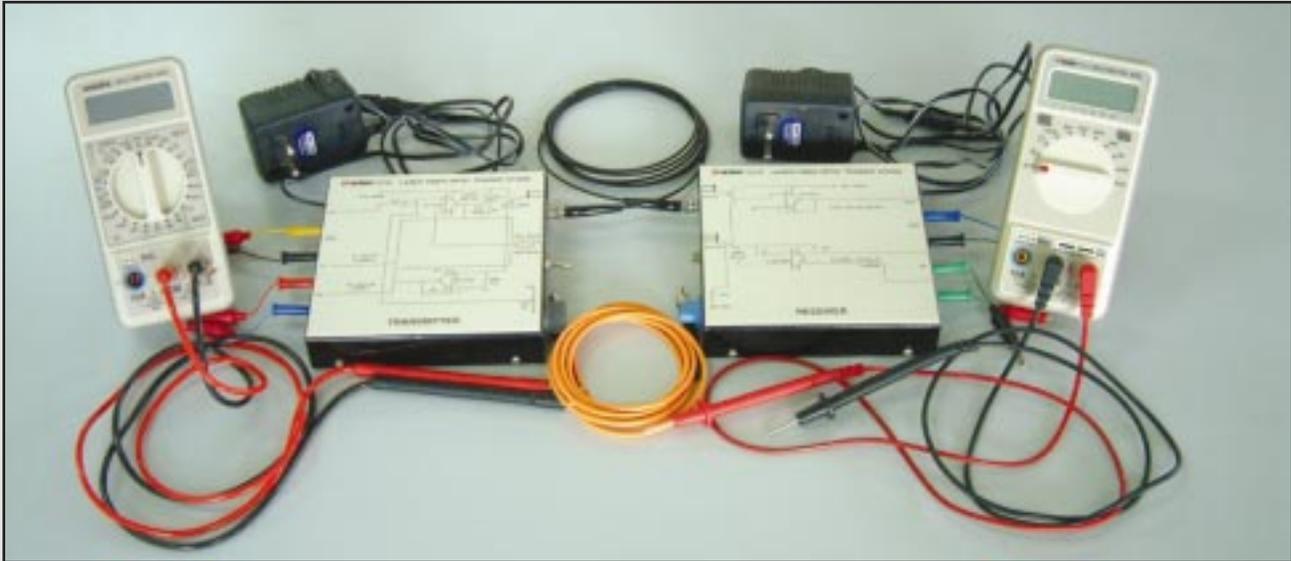


Laser Fiber Optic Trainer ST 2506

Fiber Optic Kits



Laser Fiber Optic Trainer ST 2506

Experiments that can be performed :

1. Characterisation of a laser diode
 - a) Optical Power Output vs LD Forward Current.
 - b) Monitor Photodiode Current vs Optical Power Output.
2. Study of ACC and APC modes of operation.
 - a) Comparison of ACC and APC modes of operation.
3. Design and Evaluation of an LD analogue IM system.
 - a) V_o vs V_{in} at Specified Optical Carrier Power level P_o .
 - b) Determination of V_{in} (max) at specified P_o for Distortion free V_o .
 - c) Comparison of ACC and APC IM systems.
4. Design and Evaluation of LD digital transmission system.
 - a) Rise time and fall time pulse width distortion.
5. Transmission of Laser through an Optical Fiber.
 - a) Study with step-index Multimode Plastic Fiber Patchcord.
 - b) Study with Graded-Index, Multimode Glass Fiber Patchcord.
 - c) Study with One Mechanical Splice Connecting the above Two Patchcords.
6. Laser free space communication.
 - a) Analogue Free Space Communication System.
 - b) Digital Free Space Communication System.
7. For numerical aperture measurement.
 - a) NA of PMMA Fiber.

The **Laser Trainer Model 2506** has been designed to conduct studies on laser diodes, optical fibers and optical communication methods, by transmission either through an optical cable or free space. The experiments introduce the student to the concepts underlying laser technology in simple way. The trainer includes accessories to conduct experiments, however instrument like DMM are extra needed. Seven experiments based on the ST 2506 have been included in the manual with full details. The students can design a number of other experiments and do small projects based on the trainer.

Contents of the trainer :

- Transmitter 1 No. ● Receiver 1 No.
- Fiber optic cable (plastic) 1 No.
- Fiber optic cable (glass) 1 No.
- Power Adaptor 2 Nos. ● NA measurement Jig 1 No.
- Sciencetech 4011 DMM optional

Technical Specifications :

Transmission Module : Laser 660 nm.

Mode : ACC & APC

Receiver Module : 1) Photo transistor 2) Pin Diode

Power Supply : 6V DC Adaptors (plug to 230V Mains)

Laser Fiber Optic Trainer ST 2506 Fiber Optic Kits



FIBER OPTIC DEMONSTRATION SYSTEM MODEL IF-DS100G

The Fiber Optic Demonstration System introductory fiber optic technology module.

Hands on activities includes :

- Voice transmission over fiber • Analog and digital data transmission • Morse code over fiber optics • Optical fiber characterization
- Fiber sensors and applications • Bending losses in optical fibers
- Optical fiber termination and polishing • Attenuation in optical fiber.



FIBER OPTIC SPEED OF LIGHT APPARATUS MODEL IF-SL-A

With the proper combination of electronics, electro-optics and fiber optics this once difficult, measurement is simple and can be conducted in any lab or classroom. All that's needed is a 60 x 100 cm table, 110 VAC electrical power, oscilloscope and the Speed of Light Apparatus.

- Features :**
- All solid-state transmitter/receiver design • Low-voltage electronics operation • Fiber optic delay requires no optical alignment
 - Safe, visible LED light source • Quick set up & measurement
 - Impact resistant, protective enclosure.



PLASTIC OPTICAL FIBER BARE / UNJACKETED TYPE CK-40

This versatile fiber is particularly well suited to low cost simple illumination and demonstration applications such as illuminated maps, lights for model railroads/airplanes, holiday lighting / ornaments and embroidering into fabric. Fiber core is polymethyl methacrylate

(PMMA) with 10µm fluorinated polymer cladding layer.

Jacketed Fiber also available .



HELIUM NEON (He-Ne) LASERS (HN-SERIES)

- Hard seal laser tube for long dependable life • All solid state electronic design • Fool proof mechanical beam stop • Bright laser pilot light. Impact resistant, see-through two-tone blue acrylic case • Tamper resistant screws for safety • Threaded mounts for holding lenses, filters & diffraction gratings

- Tripod mount - ¼ - 20 thread • Rubber feet on chassis bottom for adhesion on slick lab surfaces • Full color operator's manual with safety information and common experiments • Labeling sand safety requirements compliant with U.S. CDRH regulations. • Standard 3.5 mm. audio input jack (modulatable models) • Various models available.

We also supply Fiber Optic Photodiodes & Phototransistors. For more details please ask for CD catalog on Fiber Optics.



FIBER OPTIC COMMUNICATIONS & NETWORKING MODULE IF-527

The Fiber Optic communications & Networking Module is newest fiber optic technology module. It's a 10 activity, intermediate level product developed for teaching at a higher level emphasizing fiber optic communications and networking technology.

Hands on activities includes :

- Color picture & sound signals over fiber • Optical fiber characterization
- Losses in optical fiber • Fiber optic switching networks • Optical and electrical multiplexing • Fiber termination polishing & splicing • Infrared light conversion • Use of fiber optic couplers (splitters).



FIBER OPTIC DEMONSTRATOR SET MODEL IF-547

Demonstrate the basics of light transmission with two specially formulated Lucite bars - one curved and one straight. The two bars offered in this set are ideal for simply demonstrating how light is contained in optical fiber by total internal reflection. Light beams can be seen trapped and reflecting down the

straight bar as well as around the bend in the curved bar. Both bars are 1 x 2 x 23 cm. Laser or laser beam box required to create light beams.



FIBER OPTIC LAB COURSE & LAB KIT MODEL - LMH

The Lab Course contains nine fascinating fiber optics experiments. With the Lab Course, Instructors can avoid having to create their own fiber optics or opto-electronics experiments and thus speed more time with their students. Do-it-yourself experimenters will learn valuable practical

experience about fiber optics.

- Experiments :**
- Making a light guide • Fiber optic cable transmission
 - Characteristics of connectors and splices • Index-matching procedures • Speed of opto-electronic device • Fiber optic transmitter
 - Receiver design • Fiber termination techniques.

OPTICAL SAMPLE KIT MODEL IF-53883

The kit includes fiber samples which are commonly used.

Jacketed		Unjacketed	
Diameter	Length (m)	Diameter	Length (m)
1000 µm	1.5	250 µm	1.5
1500 µm	0.6	500 µm	0.6
2000 µm	0.6	750 µm	0.6
16 x 265 µm bundle	0.3		
32 x 265 µm bundle	0.3		
48 x 265 µm bundle	0.3		
64 x 265 µm bundle	0.3		

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