

## Optical Fiber Communication Training Kit – AT-OFCTK

Our Optical Fiber Communication Training Kit “AT-OFCTK” is developed to study the concepts of fiber optics and optical communication. It is designed for the study for various learning aspects. AT-OFCTK is well versed optical fiber communication training kit to learn different experiments like Time Division Multiplexing of Digital Signals, Dispersion in Optical Fiber, Attenuation in optical fiber, Bit Error Rate & Eye Pattern Analysis in optical fiber and many more.

### Features:

- In-built User Manual to observe and analyze each experiment performed.
- LCD Touch Screen
- Enhanced software to guide students about each experiment
- AT-OFCTK is well equipped with EDFA, OADM, Oscilloscope and OTDR for study of Eye pattern analysis.



### List of Experiment Projects:

Various Characterization LASER Diode Photodetector WDM Mux and Demux FBG and Circulator Erbium Doped Fiber Amplifier	Rise Time Budgeting of an Optical Fiber Link
Fiber Characteristics	Optical Amplification in a WDM Link
Optical Communication System	Adding and Dropping of Optical Channels in a WDM Link
Modes in Optical Fiber	Component Characteristics
Attenuation in Optical Fiber	Testing & Analysis
Bending Loss in Optical Fiber	Optical Time Domain Reflectometer
Dispersion in Optical Fiber	Bit Error Rate & Eye Pattern Analysis
Time Division Multiplexing of Digital Signals	Numerical Aperture
Analog and Digital Fiber Optic Links	
WDM Fiber Optic Link	
Power Budgeting of an Optical Fiber Link	

## Main Technical Parameters

LASERS: 1510 nm, 1530 nm, 1E50 nm and 1570 nm

- Pigtailed DFB Laser
- Output Power 1mW
- Spectral width 50 pm

980 nm Laser

- Pigtailed Laser
- Output Power 50-60 mW

850 nm Laser

- Pigtailed Laser
- Output Power 2 mW

InGaAs & Silicon Photodiodes

- Pigtailed Photodiodes, High Speed PIN diodes, Variable Optical Attenuator
- Attenuation Range 1 - 40 dB
- Resolution 0.5 dB
- 3Port Circulator
- Isolation 15 dB
- Insertion Loss 0.5 -1 dB

3dB Coupler

- Splitting Ratio 50:50
- Insertion Loss of each Channel 1 dB

4Channel WDM Mux & DeMux

- Pass Channels at 1510, 1530, 1550 and 1570 nm
- Channel spacing 20 nm

980/15xx Mux

- 30 dB isolation@1550 nni
- 15 dB isolation @ 980 nm

Fiber Bragg Grating

- 30 dB isolation @ 1550 nm
- 15 dB isolation @980 nm

## Standard accessories

- Laser Sources
- Digital Storage Oscilloscope
- Power Meter
- Fiber Spools

## Simulation Software for Optical Fiber and Planar Waveguide List of Simulations (AT-PRO)

Optical fiber

- Modes in SI Fiber
- Modes in GI Fiber
- Modes in Multilayer Fiber
- Material Dispersion
- Intermodal Dispersion
- Total Dispersion on SMF
- Dispersion in GI Fiber
- Dispersion in Multilayer Fiber
- Total Dispersion in MMF
- Spot size in SI Fiber
- Attenuation
- Offset Losses
- Light Emitting Diode
- Laser Diode
- Si Photodiode
- FBG Simulator
- EDFA

Planar waveguides

- 3 Layer Symmetric
- 3 Layer Asymmetric
- Multilayer Symmetric
- Multilayer Asymmetric
- GI Planar Waveguide
- Directional Coupler

Link designing & testing

- Attenuation Limited Link
- Dispersion Limited Link
- Link Budget
- OTDR

Non-linear effects

- Self-Phase Modulation
- Cross Phase Modulation
- Stimulated Raman Scattering
- Stimulated Brillouin Scattering
- Optical Soliton