



### Features

- 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
- Online product tutorial

### Technical Specifications

Transmitter	: 1 no., LED 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.
th 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 KHz Sine wave (Amplitude adjustable) 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

Note: Specifications are subject to change.

Test Points	: 29 nos.
Inter connections	: 2 mm sockets
Power Supply	: 110-220 V $\pm$ 10%, 50 / 60 Hz
Dimensions (mm)	: W 326 $\times$ D 252 $\times$ H 52
Weight	: 1 Kg approximately
Power Consumption	: 3 VA approximately
Operating Condition	: 0-40 C, 80% RH
Product Tutorial	: Online on <a href="http://www.ScientechLearning.com">www.ScientechLearning.com</a>
Included Accessories	: 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.
Optional Experiments	: Measurement of Bit Error Rate : Study of Eye Pattern

### Experiments

- 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 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
- V-I Characteristics of LED ( E - O converter)
- Characteristics of Photo Detector
- Measurement of Bit Error Rate (Optional)
- Study of Eye Pattern (Optional)

Note: Specifications are subject to change.