



Features

- Full Duplex Analog & Digital Trans-receiver
- Single module covering large number of experiments including experiments with Optical Power Meter
- 660 nm & 950 nm Fiber Optic LED channel with Transmitter & Receiver
- LASER Source (optional) in lieu of LED Source
- AM-FM-PWM modulation / demodulation
- PC-PC comm. with USB ports & software
- On board Function Generator
- Crystal controlled Clock
- Functional blocks indicated on-board
- Input-output & test points provided
- On board voice link
- Built in DC Power Supply
- Numerical Aperture measurement jig and mandrel for bending loss measurement
- Data Generator with selectable clock (64/ 128/ 256 KHz)
- Noise Generator with variable gain
- Eye pattern observation and Bit Error Rate measurement
- Four digits Bit Error Counter
- Switched faults on Transmitter & Receiver

Technical Specifications

Transmitter	: 2 nos., Fiber Optic LED having peak wavelength of emission 660 nm & 950 nm (Optional LASER source)
Receiver	: 2 nos., Fiber Optic Photodetector
Modulation Techniques	: AM (Intensity modulation), FM, PWM.
Drivers	: 1 no. with Analog & Digital modes
AC Amplifier	: 2 nos.
Clock	: Crystal controlled Clock 4.096 MHz
PLL detector	: 1 no.
Comparator	: 2 nos.
th Filters	: 2 nos. 4 order Butterworth, 3.4 KHz cutoff frequency
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)
PC-PC Communication	: USB
Baud Rate	: 19200 baud
Switched Faults	: 4 in Transmitter & 4 in Receiver
Fiber Optic Cable	: Connector type standard SMA
Cable Type	: Step indexed multimode PMMA plastic
Core Refractive Index	: 1.492
Clad Refractive Index	: 1.406

Note: Specifications are subject to change.



Numerical Aperture	: Better than 0.5
Acceptance Angle	: Better than 60 deg.
Fiber Diameter	: 1000 microns
Outer Diameter	: 2.2 mm
Fiber Length	: 0.5m & 1m
Test Points	: 50 nos.
Inter connections	: 2 mm sockets
Dimensions (mm)	: W 326 D 252 H 52
Weight	: 2.4 Kg approximately
Power Supply	: 110 -220 V, \pm 10%, 50 / 60 Hz
Power Consumption	: 4.5 VA approximately
Operating Condition	: 0-40 C, 80% RH Product Tutorial : Online
Included Accessories	: NA measurement jig, Mandrel, Fiber Cables, Microphone, Headphone, Set of Patch Cords, PC-PC communication Software
Optional Accessories	: Optical Power Meter, 5 meter fiber cable, 10 meter fiber cable.

Experiments

- Setting up Fiber Optic Analog & Digital link
- AM system using Analog & Digital input signals
- Frequency Modulation system and Pulse Width Modulation system
- Study of Propagation Loss, Bending Loss & measurement of Numerical Aperture
- Characteristics of Fiber Optic communication link
- Setting of Fiber Optic voice link using Amplitude, Frequency & PWM
- Modulation IStudy of Switched Faults in AM, FM & PWM system
- Full Duplex Computer Communication using USB and software
- V-I characteristics of LED (E - O converter)
- Characteristics of Photo Detector

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