

FIBRE OPTIC TRAINERS



Product Catalog



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1. DIGITAL OPTICAL FIBRE TRANSCEIVER LINK [VOFT-01]

This unit consist of two modules, which are used to study the digital signal transmission, reception and PC to PC communication link by using fibre optic media.



Specifications:

Transmitter:

- * Type of data : TTL
- * Data rate : 1 Mbps
- * RS232 Baud rate : 38.4 kbps
- * Source wave length : 660nm
- * Source material : Ga As
- * Optical output connector : Self locking cap
- * Supply voltage : +5V
- * Supply Current : 100 mA (Approx)
- * Interface connector : BNC - BNC

Receiver:

- * Diode Type : Pin photo diode
- * Diode wave length : 660 nm - 950nm
- * Optical input connector : Self locking cap
- * Supply voltage : +5V
- * Supply Current : 100 mA (Approx)
- * Interface connector : BNC - BNC

Communicating Media:

- * Fibre Cable : 1m & 3m, 1000 micron plastic multimode fiber

Accessories included:

- * BNC - BNC cable
- * RS232 cable
- * External Power supply
- * Fibre cable
- * Detailed Experimental Documentation

Experiments:

1. To study the Digital signal transmission and reception
2. To Study the PC - PC communication link using optical fibre

2. ANALOG OPTICAL FIBRE TRANSCEIVER LINK [VOFT-01A]

Analog Optical Fibre Transceiver links [VOFT-01A) is used to study the analog signal transmission and reception by using Fibre optic medium.



Specifications:

Transmitter:

- * Modulating signal
 - # Frequency : 100 KHz
 - # Amplitude : 5Vpp
- * Carrier Signal
 - # Frequency : 1.1 MHz
 - # Amplitude : 2Vpp
- * Modulation technique : PWM
- * Type of data : TTL
- * Data rate : 1 Mbps
- * Source wave length : 660nm
- * Source material : Ga As
- * Optical output connector : Self locking cap
- * Supply voltage : +5V
- * Supply Current : 100 mA (Approx)
- * Interface connector : BNC - BNC

Receiver:

- * Diode Type : Pin photo diode
- * Diode wave length : 660 nm - 950nm
- * Optical input connector : Self locking cap
- * Supply voltage : +5V
- * Supply Current : 100 mA (Approx)
- * Interface connector : BNC - BNC

Communicating Media:

- * Fibre Cable : 1m & 3m, 1000 micron plastic multimode fiber

Accessories included:

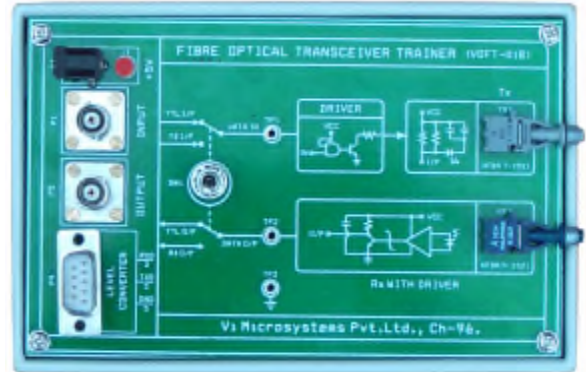
- * BNC - BNC cable
- * External Power supply
- * Fibre cable
- * Detailed Experimental Documentation

Experiments:

1. To Study the Analog Signal transmission and reception

3. MULTI DIGITAL OPTICAL FIBRE TRANSCEIVER TRAINER [VOFT-01B]

This Trainer module used to study the digital signal transmission, reception and PC to PC communication link by using fibre optic media.



Specifications:

Transmitter:

- * Type of data : TTL
- * Data rate : 1 Mbps
- * RS232 Baud rate : 38.4 kbps
- * Source wave length : 660nm
- * Source material : Ga As
- * Optical output connector : Self locking cap
- * Supply voltage : +5V
- * Supply Current : 100 mA (Approx)
- * Interface connector : BNC - BNC

Receiver:

- * Diode Type : Pin photo diode
- * Diode wave length : 660 nm - 950nm
- * Optical input connector : Self locking cap
- * Supply voltage : +5V
- * Supply Current : 100 mA (Approx)
- * Interface connector : BNC - BNC

Accessories:

- * BNC - BNC cable
- * RS232 cable
- * External Power supply
- * Fibre cable
- * Detailed Experimental Documentation

Communicating Media:

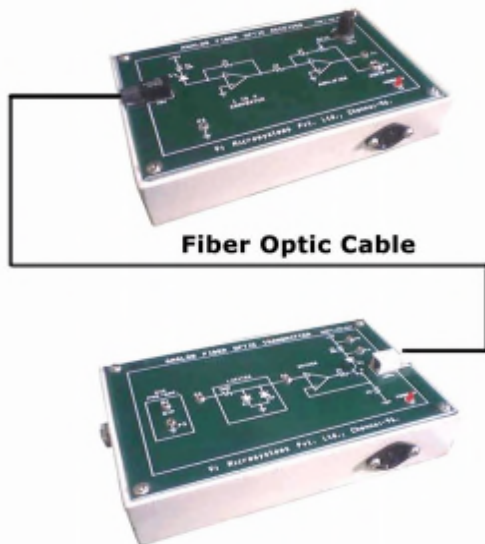
- * Fibre Cable : 1m & 3m, 1000 micron plastic multimode fiber

Experiments:

1. To study the Digital signal transmission and reception
2. To Study the PC - PC communication link using optical fibre

4. FIBRE OPTIC ANALOG TRANSMITTER & RECEIVER TRAINER [VOFT-02]

VOFT-02 is a Fibre optic Analog transmitter and receiver trainers designed to learn fundamentals of fibre optic communication link.



Features:

- * Onboard Optical fibre transmitter & driver
- * Onboard Optical fibre receiver
- * Mimic Diagram
- * Various test points
- * To vary the receiver gain and offset potentiometers

Specification:

Transmitter:

- * Transmitter type : DC Coupled
- * Source wave length : 650 nm

- * Source material : Ga As
- * Optical output connector : Screw type
- * Input type : Analog signal
- * Analog signal level : 1.4 V (Max)
- * Bandwidth : 150KHz at min gain
- * Supply voltage : $\pm 5V$
- * Supply Current : 100 mA (Approx)
- * Interface connector
 - # Analog input : BNC Connector
 - # Power : 5 pin DIN connector

Receiver:

- * Receiver type : AC / DC coupled
- * Diode Type : Pin photo diode
- * Diode wave length : 660 nm - 950nm
- * Optical input connector : Screw type
- * Supply Voltage : $\pm 5V$
- * Supply Current : 100 mA (Approx)
- * Interface connector : BNC - BNC

Communicating Media:

- * Fibre Cable : 1m & 3m, 1000 micron plastic multimode fiber

Accessories included:

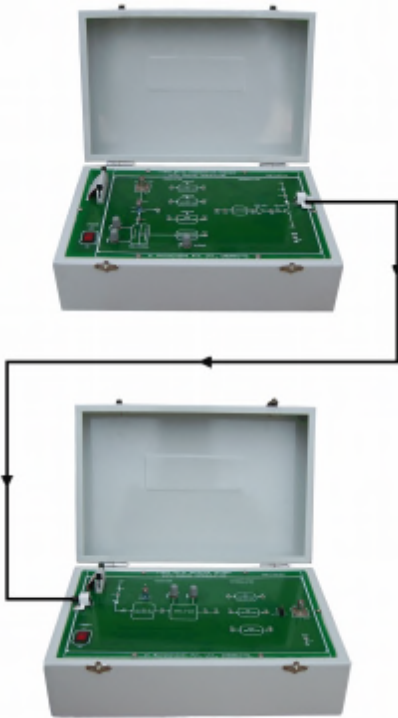
- * BNC - BNC cable
- * External Power supply
- * Plastic fibre cable
- * Attenuation Set
- * NA setup
- * Detailed Experimental Documentation

Experiments:

1. To study the analog signal transmission and reception
2. To study the Bending loss
3. To study the attenuation
4. Study of numerical aperture

5. FIBRE OPTIC ANALOG TRANSMITTER AND RECEIVER TRAINER [With Modulation & Demodulation](VOFT-03)

Fibre optic Analog transmitter and receiver trainers kit (VOFT-03) used to study of properties of transmitter and receiver, characteristics of fibre optic cables, different analog modulation and demodulation.



Features:

- * On-board modulating signal generator
- * On-board carrier signal generator
- * On board transmitter & driver
- * Different types of modulation technique
- * Various test points
- * Onboard receiver
- * Different type of detector
- * Variable gain controller
- * Inbuilt power supply

Specifications:

Transmitter:

- * Modulating signal
 - # Frequency : 300 Hz -3 KHz
 - # Amplitude : 5 Vpp
- * Transmitter type : AC / DC coupled

- * Modulation technique
 - # Amplitude modulation
 - # Frequency Modulation
 - # Pulse Amplitude Modulation
 - # Direct intensity Modulation
- * Carrier Signal : 50 KHz
- * Source wave length: 660 nm
- * Input type : Analog / DC signal
- * Optical output connector : Screw type
- * Supply Voltage : $\pm 12V, \pm 5V, GND$
- * Supply Current : 200 mA (Approx)
- * Mode selection : Selectable switch
- * Interface Connector
 - # External Input : BNC to BNC

Receiver:

- * Receiver type : AC / DC coupled
- * Diode Type : Pin photo diode
- * Diode wave length : 660 nm - 950nm
- * Optical input connector : Screw type
- * Demodulation technique
 - # AM Detector : Envelope detector
 - # FM Detector : PLL Detector
 - # PAM Detector : Second order low pass Filter (Butterworth)
 - # Direct intensity detector
- * Supply Voltage : $\pm 5V, \pm 12V, GND$
- * Supply Current : 200 mA (Approx)
- * Interface connector : BNC - BNC

Communicating Media:

- * Fibre Cable : 1m & 3m, 1000 micron plastic multimode fiber

Accessories included:

- * BNC - BNC cable
- * Attenuation Setup
- * NA Setup
- * Coupling Setup
- * Detailed Experimental Documentation

Experiments:

1. To study the analog signal transmission & reception
2. To study the Bending loss
3. To study the Numerical aperture
4. To study the attenuation
5. Effect of Electro Magnetic Interference on fibre
6. To study the coupling loss

6. DIGITAL FIBRE OPTIC TRANSMITTER AND RECEIVER TRAINER [with Pulse Modulation & Demodulation](VOFT-04)

VOFT-04 provides all necessary inputs and connections for students to study the different modulation / demodulation and digital transmission / reception by using fibre optic communication link.

Features:

- * On-board modulating signal generator
- * On board transmitter & driver
- * Different types of modulation technique
- * Various test points
- * Onboard receiver
- * Different type of detector
- * Inbuilt power supply
- * Audio Amplifier
- * Clock Recovery

Specifications:

Transmitter:

- * Modulating signal
 - # Frequency : 1 KHz
 - # Amplitude : 2 Vpp
- * Modulation technique
 - # Pulse Width Modulation
 - # Pulse Position Modulation
 - # Pulse Code Modulation



- * Source wave length : 660 nm
- * Optical output connector : Self locking cap
- * Supply Voltage : $\pm 12V$, $\pm 5V$, GND

- * Supply Current : 200 mA (Approx)
- * Interface Connector : BNC - BS₂

Receiver:

- * Diode Type : Pin photo diode
- * Diode wave length : 660 nm - 950nm
- * Optical input connector : Self locking cap
- * Demodulation technique
 - # PWM Detector : Lowpass filter
 - # PPM Detector : Low pass filter
 - # PCM Detector
- * Supply Voltage : $\pm 5V$, $\pm 12V$, GND
- * Supply Current : 200 mA (Approx)
- * Interface connector : BNC - BS₂

Communicating Media:

- * Fibre Cable : 1m & 3m, 1000 micron plastic multimode fiber

Accessories included:

- * BNC - BNC
- * Detailed Experimental Documentation

Experiments:

1. To study the pulse signal transmission & reception by fibre optic media.

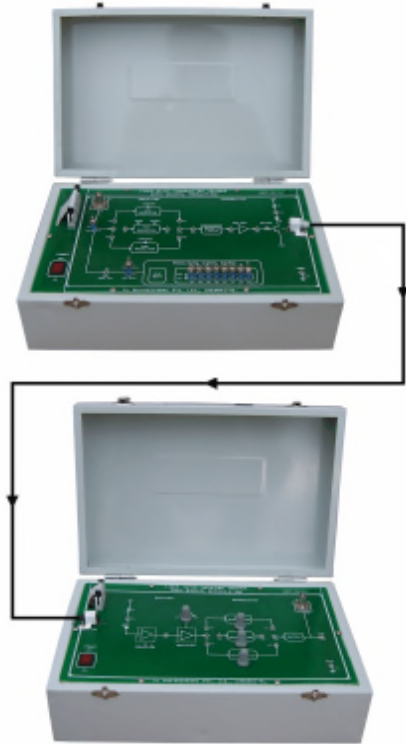
7. FIBRE OPTIC DIGITAL TRANSMITTER AND RECEIVER TRAINER (With Modulation & Demodulation) [VOFT-05]

Fibre Optic transmitter and receiver trainer (VOFT-05) is used to learn different digital Modulation (ASK, FSK, PSK) / Demodulation and Transmission / Reception by fibre optic communication link.

Features:

- * On-board modulating signal generator
- * On-board carrier signal generator
- * On board transmitter & driver
- * Different types of modulation technique

- * Various test points
- * Onboard receiver
- * Different type of detector
- * Variable gain controller
- * Inbuilt power supply



- * Optical output connector : Screw type
- * Supply Voltage : $\pm 12V, \pm 5V, GND$
- * Supply Current : 200 mA (Approx)
- * Mode selection : Selectable switch
- * Interface Connector
 - # External Input : BNC Connector

Receiver:

- * Diode Type : Pin photo diode
- * Diode wave length : 660 nm - 950nm
- * Demodulation technique
 - # Amplitude shift keying : E n v e l o p e detector
 - # Frequency shift keying : PLL Detector
 - # Phase shift keying : S q u a r e L o o p Detector
- * Optical input connector : Screw type
- * Supply Voltage : $\pm 12V, \pm 5V, GND$
- * Supply Current : 200 mA (Approx)
- * Interface connector : BNC - BNC

Accessories included:

- * BNC - BNC cable provided
- * Detailed Experimental Documentation

Communicating Media:

- * Fibre Cable : 1m & 3m, 1000 micron plastic multimode fiber

Experiments:

1. To Study the digital signal transmission & reception
2. Effect of Electro Magnetic Interference on fibre

Specifications:

Transmitter:

- * Modulating signal
 - # Clock bit rate : 9.6 kbps
 - # 8 bit programmable data bit rate : 9.6 kbps
 - # Amplitude : 5Vpp
- * Carrier signal
 - # Frequency : 9.6 KHz (ASK, PSK)
34.24 KHz (Mark)
40.64KHz(Space)[FSK]
 - # Amplitude : 2Vpp

- * Modulation technique
 - # Amplitude shift keying
 - # Frequency shift keying
 - # Phase shift keying
- * Source wave length : 950 nm

8. ADVANCE FIBRE OPTIC COMMUNICATION TRAINER [VOFT-06]

The world today focus on Fibre Optic Communication Media. This communication system have excellent performance and cost advantage over Wire and RF based communication system. The knowledge of Fibre Optic Communication system thus becomes more important. This trainer is designed to learn the fibre optic communication technique. It is used to demonstrate Analog and Digital signal transmission techniques, TDM techniques, Data coding and Decoding and PC to PC communication by serial method.



Feature:

- * Onboard programmable odd / even marker generator
- * On board programmable data generator
- * Expansion Channel
- * Onboard Optical Analog & Digital Transmitter and Receiver
- * Reset switch
- * Mimic diagram
- * All relevant test points provided on board
- * On-board voice link

Specifications:

Transmitter:

- * 16 channel TDM system
- * 8 bit programmable data
- * 2.048 kbps data rate for Manchester coding
- * 4 Expansion channels
- * Two telephone handsets
- * Odd/ Even Marker for synchronisation (8 bit programmable)
- * Transmitter wave length : 660 nm & 950 nm
- * Modulation : Intensity Modulation
- * Analog bandwidth : 150 KHz

* Digital bandwidth : 2 MHz

- * Optical output connector
 - # Digital : Self locking cap
 - # Analog : Screw type
- * Handset
- * Patch chords

Receiver:

- * Receiver type : Pin photo diode
- * Diode wave length : 660 nm & 950 nm
- * Optical input connector
 - # Digital : Self locking cap
 - # Analog : Screw type
- * Clock recovery
- * Power Supply : 230 V \pm 10%, 50 Hz

Power Supply:

- * Supply voltage : \pm 12V, \pm 5V, GND
- * Supply current : 500mA (Approx)
- * Interface connector : BNC - BNC

Communicating Media:

- * Fibre Cable : 1m & 3m, 1000 micron plastic step index, multi mode PMMA fiber

- * Core reflective index : 1.492
- * Clad reflective index : 1.406
- * Numerical Aperture : Better than 0.5
- * Acceptance angle : 60 deg

Accessories included:

- * Coupling Setup
- * NA Measurement Setup jig
- * Mandrel
- * Fibre Cable
- * Detailed Experimental Documentation

Experiments:

1. Study of TDM
2. To study the Analog signal transmission & reception
3. To study the Manchester coding & decoding
4. To study the Marker
6. To study the NA Measurement
7. To study the Timing Logic
8. To study the Fiber Losses

9. CHARACTERISTICS OF LED MODULE [VOFT-07A]

This module is used to study the characteristics of LED

Note:

- * VOFT-07A₁ - 660 nm
- * VOFT-07A₂ - 950 nm



Features:

- * Multimeter
- * External Power supply
- * Mimic diagram
- * Detailed Experimental Documentation

Specification:

- * Source : LED
- * Peak wave length : 950 nm
- * Possible Modes of Operation : Forward bias
- * Bias Control : Potentiometer
- * Bias Voltage variation : 5V max

- * Possible coupling cable : Multimode plastic cable (1000 micron)
- * Patch chord provided

Experiments:

1. To study the characteristics of LED

Accessories:

- * Power meter (Optional)

10. CHARACTERISTICS OF PD MODULE [VOFT-07B]

This module is used to study the characteristics of PIN photo diode



Features:

- * Multimeter
- * External Power supply
- * Mimic diagram
- * Detailed Experimental Documentation

Specifications:

- * Photo detector : Silicon PIN photo diode
- * Diode wave length: 660 - 950 nm
- * Possible modes of operation
 - # Zero Bias
 - # Forward Bias
 - # Reverse Bias
- * Mode Selection indicator : LED
- * Bias control : Potentiometer
- * Patch chord provided

Experiments:

1. To study the characteristics of PIN photo diode

Accessories:

- * Powermeter (Optional)

11. CHARACTERISTICS OF APD MODULE [VOFT-07C]

This module is used to study the characteristics of Avalanche Photo Diode

Features:

- * Multimeter
- * External Power supply
- * Mimic diagram
- * Detailed Experimental Documentation



Specifications:

- * Photo detector : Silicon Avalanche photo diode
- * Diode wave length : 400 - 1000 nm
- * Possible modes of operation
 - # Zero Bias
 - # Reverse Bias
- * Bias control : Potentiometer
- * Patch chord provided

Experiments:

1. To study the characteristics of Avalanche photo diode

Accessories:

- * Powermeter (Optional)

12. CHARACTERISTICS OF LASER MODULE [VOFT-07D]

This module consists of laser diode and driver for studying P-I & V-I characteristics.

Features:

- * Multimeter
- * External Power supply
- * Mimic diagram
- * Detailed Experimental Documentation



Specifications:

- * Source : Lazer diode
- * Wave Length : 650nm
- * Maximum output power: 0.5mW
- * Collimating lens : Suitable for 650nm Adjustable spot size
- * Patch chords provided

Experiments:

- * To study the V-I characteristics
- * To study the P-I characteristics

Accessories:

- * Powermeter (Optional)

13. FIBER OPTIC POWER SOURCE (VOFM-07Ex)

Note:

- * VOFM-07E₁ - 660 nm
- * VOFM-07E₂ - 850 nm
- * VOFM-07E₃ - 1310 nm
- * VOFM-07E₄ - 1550 nm

Specification:

- * Optical Source type : LED
- * Optical output connector : ST Type
- * Modulation :
 - i. Continuous wave
 - ii. Internal Data
 - a. TTL
 - b. Pseudo Random Sequence
 - iii. External Data : TTL
- * External TTL input : Through BNC female connector
- * Power Supply : DC \pm 5V, GND
AC 230V, 50Hz

14. FIBER OPTIC POWER SOURCE (VLM-01)

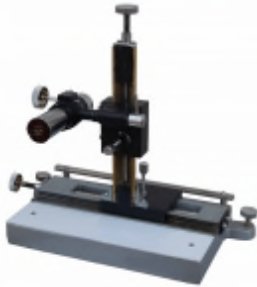
- * VLM-01 - 660 nm
- * VLM-02 - 850 nm
- * VLM-03 - 1310 nm
- * VLM-04 - 1550 nm

Specification:

- * Optical Source type : LD
- * Optical output connector : ST Type
- * Modulation :
 - i. Continuous wave
 - ii. Internal Data
 - a. TTL
 - b. Pseudo Random Sequence
 - iii. External Data : TTL
- * External TTL input : Through BNC female connector
- * Power Supply
 - # DC $\pm 5V$, GND
 - # AC 230V, 50Hz

15. LASER COMMUNICATION MODULE [VLT-01]

This module is used to study on optical fibers and optical communication methods by transmission media either through an optical cable (or) free space.



Note:

- * VLT-01 - Semiconductor Laser
- * VLT-02 - HeNe Laser

Features:

- * On board transmitter and driver provided.
- * On board receiver provided.
- * Lens provided (20x Objective).
- * Mechanical setup provided.

Technical Specification:

* Transmitter

- # Modulation Technique
- # Direct Intensity Modulation
- # Source type : Laser diode
HeNe laser diode.(Optional)

- # Wave length : 660nm
- # Supply voltage: $\pm 5V$, $\pm 12V$, GND
- # Supply current : 100mA (Approx)
- # Maximum output power : 0.5mW
- # Interface connector : BNC - BNC

* Receiver:

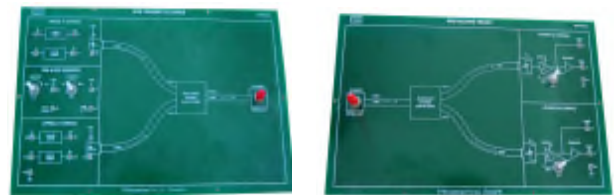
- # Diode type : PIN Photo diode
- # Diode wavelength : 660nm
- # Wave length : 660nm
- # Supply voltage : $\pm 5V$, $\pm 12V$, GND
- # Supply current : 100mA (Approx)
- # Interface connector : BNC - BNC

Experiments:

1. Laser free space communication
 - i. Analog free space communication system
2. For numerical aperture measurement
 - i. Numerical aperture of plastic multimode step index fibre.

16. WAVELENGTH DIVISION MULTIPLEXING TRAINER (VOFT-08)

This unit is used to study the wavelength division multiplexing. This concept is provide to transceiver which transmit (1310 nm & 1550 nm) and receives (1310 nm & 1550 nm) in different wavelength. Single fibre is used to communicate the signals.



Feature:

- * Inbuilt signal generator
- * Power Supply
- * WDM Coupler
- * BNC to BNC cable provided
- * Inbuilt Driver circuit
- * Inbuilt transmitter & Receiver
- * Detailed documentation

Specifications:

- * Transmitter wavelength : 1310 nm, 1550 nm
- * Transmitting signal : Audio signal
- * Modulation type : I n t e n s i t y modulation
- * Receiver wavelength : 1310 nm & 1550 nm
- * Supply voltage : $\pm 5V, \pm 12V, GND$
- * Supply current : 100mA (approx)

Communicating Media:

- * Bidirectional WDM coupler

Experiment:

- * To study the wavelength division multiplexing & Demultiplexing

17. OPTICAL VIDEO LINK TRAINER (VOFT-09)

Optical Video link trainer is used to study the transmission and reception of video signal in optical fibre media. It consists of transmitter and receiver, patch cards and other accessories to conduct experiments. Transmitter module has video input, optical output. Receiver module has optical input, video output. It also be used to demonstrate optical video link using function generator and CRO.

Features:

- * Inbuilt Video link transmitter & receiver
- * Inbuilt Driver circuit
- * Power supply
- * Patch chords
- * Different test points
- * BNC to BNC cable provided
- * Fibre cable
- * Detailed Documentation

Specifications:

- * Modulating signal : Video signal, Function Generator Signal
- * Transmitter type : Laser
- * Wavelength : 820 nm
- * Receiver type : PIN photo diode
- * Wavelength : 660 to 950nm
- * Supply voltage : $\pm 5V, \pm 12V, GND$
- * Supply current : 100 mA (Approx)

Communicating Media:

- * Fibre type : Glass Multimode fibre

Experiments:

- * To compare video input signal and video output signal via optical video link
- * To observe laser modulator input signal and optical detector output signal.
- * To observe sine signal transmission via optical video link

18. OPTICAL POWER SUPPLY [VSS-01]

Specification:

- * Input supply : AC 230V/50Hz
- * Output supply : DC $\pm 12V, \pm 5V, GND$
- * Connector : 4 Pin connector, PS2 connector
- * Power Indication : LED

19. SIGNAL SOURCE [VSS-01]

Signal generator is used to give signal to the different transmitter modules. It consist of different waveforms like DC, Sine, TTL, 8 Bit programmable data.



Feature:

- * Variable frequency selector provided
- * Variable amplitude selector provided
- * Inbuilt signal selector switch is provided

Technical Specifications:

- * DC Voltage : 0 - 5V (Variable)

- * Sine
- # Frequency : 300Hz - 30 KHz (Variable)
- # Amplitude : 5 Vpp (Variable)
- * 8 bit programmable data
- * TTL

Accessories:

- * Power supply - 1 No

20. BIT ERROR RATE TESTER [VBERT-01]



Features :

- * Inbuilt Power supply provided
- * Various switches provided
- * External clock port provided
- * Output port provided

Technical Specifications:

- * Transmitting pattern
 - # P2p6 : Pseudorandom 2^6-1
 - # P2p9 : Pseudorandom 2^9-1
 - # P2p11 : Pseudorandom $2^{11}-1$
 - # P2p15 : Pseudorandom $2^{15}-1$
 - # P2p20 : Pseudorandom $2^{20}-1$
 - # P2p23 : Pseudorandom $2^{23}-1$
 - # P2p32 : Pseudorandom $2^{32}-1$
 - # RS0/1 : Repetitive Alternating 1's & 0's
 - # RD0/1 : Repetitive Double Alternating 1's & 0's
- * Error instruction pattern
 - # NO : No Error instruction
 - # E - 2 : 10^{-2}
 - # E - 3 : 10^{-3}
 - # E - 4 : 10^{-4}
 - # E - 5 : 10^{-5}
 - # E - 6 : 10^{-6}
 - # E - 7 : 10^{-7}
 - # 1b : Single bit error insertion
- * Receiving parameter
 - # No. of bits received (BITCNT)
 - # No. of Error bits in the received pattern (BEC)
 - # Bit Error Rate (BER)

21. 1MHz DDS BASED SIGNAL GENERATOR [VDSG-01]

This is a programmable wave form generator using the latest technology DDS, capable of producing sine, triangular & square wave at desired frequency ranging from 0.1Hz to 1MHz.



Features:

- * Based on the latest technology, "Direct Digital Synthesizer" (DDS)
- * Digitally set Frequency & waveform
- * 0.1Hz to 1MHz output frequency range
- * 0.1Hz resolution
- * Sinusoidal/Triangular/Square wave output
- * Sweep out/Single output is possible
- * FSK modulation provided
- * Built in micro controller with ADC to measure amplitude of the output waveform
- * $\pm 5V$ output with offset variation
- * 16x2 LCD display, to display the a) frequency b) Waveform type c) Amplitude
- * 5 keys to select a) RESET b) UP c) DOWN d) SET e) ENTER operations
- * Output is taken through BNC female connector
- * Two potentiometer are provided for OFFSET adjustment & AMPLITUDE setting
- * Ideal for DSP based application

22. 5MHz DDS BASED SIGNAL GENERATOR [VDSG-02]

This is a programmable wave form generator using the latest technology DDS, capable of producing sine, triangular & square wave at desired frequency ranging from 0.1Hz to 5MHz.



Features:

- * Frequency Range : 0.1Hz to 5 MHz
- * Resolution output : 0.1Hz,
- * Output Voltage : 100mV to 20 Vpp on no load
- * Output impedance : 50E/600E (software selectable)
- * Attenuation : 20,40dB (software selectable)
- * DC Offset available
- * Frequency Selection: Single, Step and Sweep
- * Sweep rate : 20-9999 mSec
- * Output : Sine, square, triangular waveforms. CMOS / TTL Output
- * Analog Modulation : AM, FM, PM
- * Digital Modulation : FSK, PSK
- * Distortion : Less than 0.5%
- * Windows based software provided for external control of Function Generator (Serial Communication by means of RS232 cable)
- * Input/Output Power supply : 230V AC +10%
- * 16 × 2 LCD display
- * One BNC Connector for sine / triangle output
- * One BNC Connector Square output
- * Two BNC Connectors for FSK & PSK, AM modulating input

23. 1MHz DDS BASED DUAL SIGNAL GENERATOR [VDSG-03]

- * Frequency Range : 1 Hz to 1 MHz
- * Resolution : 0.1 Hz
- * Amplitude : 5 Vpp
- * Pot provided to varying the offset
- * Sine, Square, Triangle, FSK, ASK functions are included
- * Dual outputs are provided

- * (0 - 180°) variable phase shift between two channels
- * LCD display provided for view the functions
- * Keyboard provided for select the functions

24. FIBRE OPTIC POWER METER



- * Wavelength Range : 800 - 1600
- * Detector : InGaAs
- * Power measurement range (dbm) : -40 to +20
- * Dynamic measure range : 60dB
- * Uncertainty : ±2.5%
- * Display resolution : .01
- * Operating temperature (°C) : -10 to +60
- * Storage temperature (°C) : -25 to +70
- * Auto-off Time (min) : 10
- * Battery operating time(hr) : 360
- * Power supply : 1.5VBattery (3)
- * Weight (g) : 80
- * Dimension (mm) : 90 × 55 × 16

25. DIGITAL MULTI METER

- * Make : MECO
- * Model : 603
- * Measuring AC and DC voltage, current and resistance
- * 3½ digit 1999 counts LCD, 17mm Large Display

- * Range selection via single rotary switch
- * Electronic overload protection
- * Separate socket for current measurements upto 10Amps
- * Diode and transistor test facilities are included together with an acoustic continuity tester
- * Ranges
 - # DC Voltage : 200mV to 1000V in steps
 - # DC Current : 200mA to (20A)/10A in steps
 - # AC Voltage : 200mV to 700V in steps
 - # AC Current : 200mA to 10A in steps
 - # Resistance : 200Ω to 20MΩ in steps
 - # Int. resistance : 10MΩ/V
- * Accuracy <1%/1 digit/DC volts 0.7%
AC volts 1.2%
Ohms 0.7%
- * Measuring probe, battery and operating manual

FIBRE OPTIC ACCESSORIES

1. Digital Multimeter



2. Fibre Optic Microscope



3. Fibre Stripper



4. Fibre Optic Adapter



5. Bare Fibre Holder



6. Fibre Cleaver



7. Fibre cable

i. Glass Fibre



ii. Plastic Fibre



8. Fibre Optic Tool kit



9. Fibre Optic Coupler

