Enjoy your life
Lverage is one of a leading manufacturers of active fiber optical transceiver module for today’s fiber optics communication industry.

Our mission “Enjoy your life” is to bring the optical broad bandwidth with reasonable price into people’s lives in the world.

Lverage’s core team members pride on our innovation and dedication to quality deployed from more than 20 years in fiber optical industry.

Pioneering Enabling Technologies for Optical Communications

Innovation has been the driving force behind Lverage’s growth. With the abilities initially developing the world’s first fiber optic transceiver modules. Lverage is now well known for its high performance fiber optical transceiver modules in the fiber communication systems.

We continue to strength our reach base to develop the technology and series products for future communication industries.

Quality Assurance

Lverage Technology Inc. is an ISO 9001: 2008 / ISO 14001:2004 certificated fiber optical active manufacturer based in Taiwan.

Lverage is one of experts in optics package technologies, components manufacturing and quality control.

Core Technologies

The core technologies of Lverage include optics package technologies and manufacturing. Advanced quality control contains utilized process techniques, laser welding & epoxy design technologies.

Trend-setting R&D group also affords high-end products such as the CWDM Metro-Access fiber optical network, PON & GPON applications, Bi-directional, and triplexes transceiver modules for the FTTX.

These competitive advantages are surely supported by advanced process techniques, laser welding & epoxy packaging, and subsystem integration technologies.
**SUBSYSTEM**

**iBERT X1 mini**
0.1G ~ 100 Gbps BER Tester

**Features**
- Hot pluggable
- Standard USB for connecting with PC
- 40/100 Gbps QSFP, 0.1G~4G / 10G / 25Gbps SFP interface module
- Friendly Graphic User Interface (GUI)
- 4Ch Power Meter

**Applications**
- 40 / 100 Gbps QSFP AOC Qualification
- 10 / 25 Gbps SFP AOC Qualification
- 40 / 100 Gbps QSFP Qualification
- 10 / 25 Gbps SFP Qualification
- 0.1~4 Gbps SFP Qualification

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**4G SFP Checker**

**Features**
- Pocket size design.
- Data Rate: 155 Mbps ~ 4 Gbps
- Standard USB for host link.
- 1 port for duplex LC SFP, 1 port for loopback of Bi-directional SFP.
- Plug-In Optical Power Meter module with SC female connector.
- Automatic wavelength selection base on the SFP serial ID.
- Smart & friendly GUI.

**Applications**
- SFP Serial ID Reader.
- SFP Digital Diagnostics Monitor.
- Bit Error Rate Tester for verifying SFP.
- Optical power measurement.

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**10/25G SFP Checker**

**Features**
- Pocket size design.
- Data Rate: 10 Gbps ~ 25 Gbps
- Standard USB for host link.
- 1 port for duplex LC SFP, 1 port for loopback of Bi-directional SFP, 2 port for AOC SFP.
- Plug-In Optical Power Meter module with SC female connector.
- Automatic wavelength selection base on the SFP+ / SFP28 serial ID.
- Smart & friendly GUI.

**Applications**
- SFP+ / SFP28 Serial ID Reader.
- SFP+ / SFP28 Digital Diagnostics Monitor.
- Bit Error Rate Tester for verifying SFP+ / SFP28.
- Optical power measurement.
**Handy Tools**

**Fiber Checker**
- Wavelength: 650 nm
- Range: visibility up to 3 km
- Universal Connector for testing ST, SC, FC connector
- 2.5 mm to 1.25 mm adapter for MU, LC connector
- Operating in both CW (Continuous Wave) & Pulse Mode
- Powered by two AAA batteries.
- LED indicator for Power ON and Low Battery.
- Comply with RoHS / CE

**Power Meter**
- Robust & handy design with LED display.
- Precise power measurements for 850 nm / 1310 nm / 1550 nm
- Universal Connector for testing SC, FC ST connector
- 2.5 mm to 1.25 mm adapter for MU, LC connector
- Powered by two AAA batteries.
- Comply with RoHS / CE
- Support APP connection with Bluetooth (iOS/Android)

**Light Source**
- Interchangeable Plug-in module design with LC or SC connector.
- Flexible to change wavelength.
- Operates in CW (Continuous Wave) / 270 Hz / 2 KHz.
- Powered by two AAA batteries.
- Comply with RoHS / CE

**FiTs**

**Fiber Installation Tools**

**FiTs II**

**Fiber Installation Tools**

**Features**
- Pocket-size design.
- Light Source module for 650 nm / 850 nm / 1300 nm / 1270 ~ 1610 nm CWDM.
- Interchangeable module design with SC / FC connector.
- Flexible to change wavelengths of Light Source.
- Power Meter for 850 nm / 1310 nm / 1490 nm / 1550 nm.
- Battery inside. Standard mini USB for Charging.
- Economical and easy to use.

**Applications**
- Maintenance CATV / Telecom / FTTH in fiber optical fiber networks.
- Testing in standard laboratories.
- High throughput quality assurance.

**Features**
- Pocket-size, handy stand alone design.
- +5 ~ -70dBm power meter measurement range with SC/PC connector.
- +3/0/-3dBm optical power adjustable selectable for light source with SC/PC connector.
- Low cost and hot swap for both the light source and power meter module.
- Bluetooth transmission.
- Support APP connection with Bluetooth.

**Applications**
- Maintenance CATV / Telecom / FTTH fiber optical fiber networks.
- Standard laboratory applications.
- Passive component fabrication.
- Optical fiber network traffic monitoring systems.
- Optical analog sensing system.
Hubs
- Interchangeable module with SC / PC connector.
- Easy and flexible to change wavelength.
- Up to 8 slots for Light Source Module installing.
- High stability optical output power.
- Selectable output Levels: -3 dBm, 0 dBm, +3 dBm.
- Operates in CW (Continuous Wave) / 270 Hz / 2 KHz.
- LED indicator for power on and module status.
- Complies with RoHS.

Light Source Hub

Power Meter Hub
- Interchangeable module with SC / PC connector.
- Up to 8 slots for Power Meter Module installing.
- Standard mini USB for host link.
- Precise optical power measurements range: +5 ~ -50 dBm.
- LED indicator for power on and module status.
- Complies with RoHS.
- USB Interface with friendly Graph User Interface (GUI).

OTH-3000
Configurable Multi Channel Light Source And Power Meter Hub

Features
- 1U 19" rack mount design.
- +5 ~ -50 dBm optical power meter module with SC / PC connector.
- +5 ~ -70 dBm optical power meter module with SC / PC connector.
- Design for measuring Return Loss.
- +3 / 0 / -3 dBm optical power adjustable and CW / 270 / 2 KHz modulation.
- Selectable for light source with LC / SC connector.
- USB Interface with friendly Graph User Interface (GUI).
- Remote commands for controlling and accessing data.

Applications
- Maintenance CATV / Telecom / FTTH.
- Fiber optical networks.
- Standard laboratory applications.
- Passive component fabrication. Return Loss measurement.
- Optical fiber network traffic monitoring systems.
- Optical analog sensing system.

OTH-4000
Multi Channels LIV Curve Tester

Features
- 1U 19" rack mount design.
- LD LIV Curve measurements.
- 12-CH DVI Electrical signals 12-CH MPO.
- USB Interface to link PC and with friendly Graph User Interface (GUI).

Applications
- Standard laboratory applications.
- Active component fabrication.
- Optical fiber network traffic monitoring systems.
- Optical analog sensing system.
**MPO Tester**

**Features**
- Easy to check fiber faults by using 650 nm visual red laser
- Range: visibility up to SMF or MMF Fiber 1 km
- 12/16/24F MPO Connector testing
- Highly effective power circuits designed for stable laser power
- Operating in Continuous Wave (CW) Mode or Scan Mode
- Built-in battery for easy carrying

**HOT Pet**

**Features**
- 4 Channels immediate Power Meter
- 40G-1000Gbps optical transceiver power measurements
- MPO / APC Connector
- LC to MPO Demux adapter design
- Touch panel design

**Applications**
- 40G SR4/LR4/ER4 optical transceiver power measurements
- 100G PSM4/CWDMA optical transceiver power measurements
- 100G SR4/LR4/ER4 optical transceiver power measurements

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**MPO Polarity Tester MPO**

**Features**
- Easy to check fiber faults by using 650 nm visual red laser
- Type A/B/C MPO patch cord and polarity checking.
- Range: visibility up to SMF or MMF Fiber 1 km
- 12/16/24F MPO Connector for testing additional fiber types
- Highly effective power circuits designed for stable laser power
- Operating in Continuous Wave (CW) Mode or Scan Mode
- Cost-effective MPO testing solution.
- Built-in battery for easy carrying

**HOT Pet II**

**Features**
- 8 Channels immediate Power Meter
- 40G-400Gbps optical transceiver power measurements
- MPO / APC Connector
- LC to MPO Demux adapter design
- Touch panel design

**Applications**
**100 Gbps QSFP28 ZR4 Transceiver**

**Features**
- Hot pluggable QSFP28 MSA form factor
- Compliant to IEEE 802.3ba 100GBASE-ZR4
- Up to 80 km reach for G.652 SMF
- Temperature Range 0 to 70°C
- Transmitter: cooled 4 x 25 Gbps LAN WDM EML TOSA (1295.56 nm, 1300.05 nm, 1304.58 nm, 1309.14 nm)
- Receiver: 4 x 25 Gbps APD ROSETA
- 4x28G Electrical Serial Interface
- Maximum power consumption 6 W
- Duplex LC receptacle
- Compatible with RoHS

**Applications**
- 10G/40G BASE-ZR4 Ethernet Links
- InfiniBand QDR and DDR interconnects
- Client-side 100G Telecom connections

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**100 Gbps QSFP28 ER4 Transceiver**

**Features**
- Hot pluggable QSFP28 MSA form factor
- Compliant to IEEE 802.3ba 100GBASE-ER4
- Up to 40 km reach for G.652 SMF
- Temperature Range 0 to 70°C
- Transmitter: cooled 4 x 25 Gbps LAN WDM EML TOSA (1295.56 nm, 1300.05 nm, 1304.58 nm, 1309.14 nm)
- Receiver: 4 x 25 Gbps APD ROSETA
- 4x28G Electrical Serial Interface
- Maximum power consumption 4.5 W
- Duplex LC receptacle
- Compatible with RoHS

**Applications**
- 10G/40G BASE-ER4 Ethernet Links
- InfiniBand QDR and DDR interconnects
- Client-side 100G Telecom connections

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**100 Gbps QSFP28 LR4**

**Features**
- Hot pluggable QSFP28 MSA form factor
- Compliant to IEEE 802.3ba 100GBASE-LR4
- Up to 10 km reach for G.652 SMF
- Temperature Range 0 to 70°C
- Maximum power consumption 3.5 W
- Duplex LC receptacle
- Compatible with RoHS

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**100 Gbps QSFP28 SR4**

**Features**
- 4 independent full-duplex channels
- Up to 28 Gbps data rate per channel
- QSFP28 MSA compliant
- Up to 100 m OM4 MMF transmission
- Operating case temperature: 0 to 70 Degrees C
- Maximum power consumption 2 W
- MPO optical connector
- RoHS-2 compliant
100 Gbps QSFP28 CWDM4 2 km Optical Transceiver

Features
- QSFP28 MSA compliant
- 4 CWDM lanes MUX/DEMUX
- Supports 103.1Gbps aggregate bit rate
- Compliant with 100G CWDM4 MSA Rev1.1
- Up to 2 km transmission on single mode fiber SMF with FEC
- Operating case temperature: 0 to 70 °C
- 4x25G electrical interface OIF CEI-28G-VSR
- Maximum power consumption 3.5 W
- Duplex LC connector
- RoHS compliant

Applications
- Data Center Interconnect
- 100G Ethernet
- Infiniband QDR and DDR interconnects
- Enterprise networking

100 Gbps QSFP28 AOC

Features
- High data rate parallel active optical cable (AOC).
- Overcome the traditional copper cable bandwidth limitation.
- Multi selection for the length of cable
- Comply with QSFP28 Multi-Source Agreement (MSA).
- Excellent EMI Shielding.

100 Gbps QSFP28 PSM4 Optical Transceiver

Features
- QSFP28 MSA compliant
- Compliant to IEEE 802.3bm 100GBASE PSM4
- Four independent full-duplex channels
- Supports 103.1Gbps aggregate bit rate
- Up to 2 km reach for 6.652 SMF
- 4x25G electrical interface OIF CEI-28G-VSR
- Maximum power consumption 3.5W
- Operating case temperature: 0 to 70 °C
- RoHS compliant

Applications
- 100G Ethernet links
- Infiniband QDR and DDR interconnects
- Datacenter and Enterprise networking

100 Gbps QSFP28 DAC

Features
- Support aggregate data rates of 100Gbps
- Support 100G to 4x25G Ethernet interoperability
- Low insertion loss and cross talk
- Excellent EMI Shielding
25 Gbps SFP28 Dual / Bi-directional Module

Features
- SR for MM fiber.
- LR, ER for SM fiber.
- Compliant with SFF-8432 SFP28 MSA
- Up to 25.78 Gb/s data links
- Support 25G Ethernet
- Support CPRI Option 10, 24.33Gbps
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- All-metal housing for superior EMI performance

Applications
- High-speed storage area networks
- Custom high-speed data pipes
- 25GE Ethernet
- eCPRI and CPRI

10 Gbps SFP+ Dual / Bi-directional Module

- Comply with SFP+ MSA, IEEE802.3ae,
- RoHS Compliant.
- SR for MM fiber.
- LR, ER, ZR for SM fiber.
- Digital Diagnostic function.
- Laser class 1 product which complies with IEC-60825, FDA 21 CFR 1040.10 and 1040.11.
- Comply with SONET OC-192, 10 G Ethernet,
  and 10 G FC
**Dual Fiber SFP Transceiver Module**

**Features**
- VCSEL 850 nm / LED 1300 nm / FP or DFB 1550 nm
- 100 Mbps ~ 4.25 Gbps
- RoHS Compliant
- Comply with SFP MSA
- Comply with SONET / SDH, Fiber Channel, or Gigabit Ethernet standards
- Class 1 laser products, EN60825, and EN60950
- 0.5 Km ~ 110 Km link distance
- Metal enclosure, low EMI
- Low Power Dissipation

**Applications**
- Metro Access Rings
- Point-to-Point networking

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**Bi-directional Module**

**Features**
- Industrial Temperature and Supply Voltage Operation
- OBSAI rates 6.144 Gbps, 3.072 Gbps, 1.536 Gbps
- CPRI rates 7.3728 Gbps, 4.9152 Gbps, 2.4576 Gbps, 1.2288 Gbps
- IEC 60825-1 Class 1 laser eye safe
- Comply with Fiber Channel and Gigabit Ethernet applications

**Applications**
- Wireless and cellular base station system interconnect

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**Dual Fiber SFF Transceiver Module**

**Features**
- VCSEL 850 nm / LED 1300 nm / FP or DFB 1550 nm
- 100 Mbps ~ 4.25 Gbps
- RoHS Compliant
- Comply with SFP MSA
- Comply with SONET / SDH standards
- Class 1 laser products, EN60825, and EN60950
- 0.5 Km ~ 110 Km link distance
- Metal enclosure, low EMI
- Low Power Dissipation

**Applications**
- Metro Access Rings
- Point-to-Point networking

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**Features**
- FP or DFB 1310 nm / FP or DFB 1550 nm
- 100 Mbps ~ 2.5 Gbps & 10 Km ~ 80 Km link distance
- RoHS Compliant
- Comply with SFP MSA SONET / Ethernet / Fiber Channel standards
- Class 1 laser products, EN60825
- Metal enclosure, low EMI

**Applications**
- Metro Access Rings
- Point-to-Point networking
- PON Applications
**CWDM Module**

**Features**
- CWDM 1270 nm, 1290 nm, 1310 nm, 1330 nm, 1356 nm, 1370 nm, 1390 nm, 1410 nm, 1430 nm, 1456 nm, 1470 nm, 1490 nm, 1510 nm, 1530 nm, 1550 nm, 1570 nm, 1590 nm 1610 nm
- 100 Mbps ~ 4.25 Gbps
- RoHS Compliant
- Comply with SFP MSA
- Comply with SONET / Ethernet / Fiber Channel standards
- Class 1 laser products, EN60825, and EN60950
- 20 Km ~ 80 Km link distance
- Hot pluggable
- Metal enclosure, low EMI
- Low Power Dissipation

**Applications**
- Metro Access Rings
- Point-to-Point networking
- POM Applications

**3G-SDI Transceiver**

**Features**
- SMPTE 297-2006 Compatible
- 50Mbps=3Gbps with up to 10 km
- Support Video Pathological Patterns for SD-SDI, HD-SDI and 3G-SDI
- Compliant with SFP MSA and SFP-8472 with duplex LC connector
- Digital Diagnostic Monitoring Interface

**Applications**
- SMPTE 297-2006 Compliant Electrical-to-Optical Interfaces
- 3G Video system

**12G-SDI Transceiver**

**Features**
- SMPTE 2082, SMPTE 424M, SMPTE 292M, SMPTE 259M, and DVB-ASI Compatible
- 50Mbps=12Gbps with up to 10 km
- Support Video Pathological Patterns for HD-SDI, 3G-SDI, 6G-SDI, and 12G-SDI
- Compliant with SFP MSA and SFP-8472 with duplex LC connector
- Digital Diagnostic Monitoring Interface

**Applications**
- SMPTE 2082 Compliant Electrical-to-Optical Interfaces
- 3G/12G Video system
DVI Extend Modules

Features
- 4 / 2 / 1 port DVI Extend Module
- Single LC Receptacle Optical Interface
- Single-Mode and Multi-Mode Fiber Application
- Support Long Distance and High Resolution Image Transmission
- Support Video Resolution up to 1920x1200 / 60Hz or 1080p for HD TV
- Indicate the Transmit and Receiver Signal Status
- Compact Size for Optical DVI Extender (HxWxD : 14.6mm x 39.6mm x 53.9mm)
- Single + 5 V Power Supply
- Metal Enclosure and Low Power Consumption
- RoHS Compliant

Applications
- HD Video Extension
- Security system connection
- Audio & Video System connection

RoF

Features
- 1310 nm un-cooled DFB Laser
- Low conversion loss
- Wide dynamic range
- Automatic optical power control
- Wide operating temperature range -20°C to +70°C
- Fiber pigtail package with a customized connector

OSA

Features
- Visible LD / VCSEL LD / FP LD / DFB LD / CWDM LD
- Uncooled
- Wide operating temperature
- Packaged in pigtail module and receptacle module

Applications
- SONET OC-3 / OC-12 / OC-48 / OC-192
- Fiber Channel 1x / 2x / 4x / 8x and 10GFC
- Fast / Gigabit / 10Gigabit Ethernet

TOSA

Features
- Visible LD / VCSEL LD / FP LD / DFB LD / CWDM LD
- Uncooled
- Wide operating temperature
- Packaged in pigtail module and receptacle module

Applications
- SONET OC-3 / OC-12 / OC-48 / OC-192
- Fiber Channel 1x / 2x / 4x / 8x and 10GFC
- Fast / Gigabit / 10Gigabit Ethernet

ROSA

Features
- Photo diode / PD-TIA / APD-TIA
- Uncooled
- Wide operating temperature
- Packaged in pigtail module and receptacle module

Applications
- SONET OC-3 / OC-12 / OC-48 / OC-192
- Fiber Channel 1x / 2x / 4x / 8x and 10GFC
- Fast / Gigabit / 10Gigabit Ethernet
- Power Meter
BOSA

Features

- Pigtailed Fiber or Receptacle type Bi-directional Transmission
- Integrated Wavelength Division Multiplexer (WDM)
- MQW-FP LD / DFB / CWDM
- Uncooled operation -40 ~ +85°C
- PD-TIA / APD-TIA Receiver

Applications

- Optical Communication system
- Gigabit Ethernet links
- Fiber Channel links
- SONET / SDH links