4-slot Layer 3 IPv6/IPv4 Routing Chassis Switch

PLANET XGS3-42000R Core Layer Routing Switch is specially designed for large network applications such as enterprises, campuses, communities, ISPs and data center networks where flexible configuration, large capacity, high density, high reliability and advanced traffic management are required. The XGS3-42000R is the High-density Chassis Ethernet Switch built with 4 module slots and redundant power supply. It provides great porting flexibility for network deployment by offering various combinable management modules and standard interfaces. For instance, one management module can be collaborated with three standard modules, or two management modules work with two standard modules to mutually perform system backup. Within the 6U height, single chassis, the maximum configuration can be:

- 160 10/100/1000BASE-T Copper Slots
- 156 100/1000BASE-SX/LX SFP Fiber Slots
- 60 10G SFP+ Fiber Slots
- 6 40G QSFP+ Fiber Slots

Positioned as the core layer switch, the XGS3-42000R serves ideally for large- and medium-sized networks and IP metropolitan networks by supplying advanced intelligent and secure features and giving high performance and flexibility.

Supporting 10/40-Gigabit Fiber Optic Ethernet

10/40-Gigabit Ethernet, which adopts the full-duplex technology instead of the low-speed, half-duplex CSMA/CD protocol, is a big leap in the evolution of Ethernet. 10/40-Gigabit Ethernet can be deployed in the star or ring topology. With the 10/40-Gigabit Ethernet technology applied, the XGS3-42000R provides broad bandwidth and powerful processing capacity. It is suitable for metropolitan networks and wide area networks. Using the XGS3-42000R, users can simplify network structures and reduce cost of network construction.

Hardware and Performance

- 4 open module slots design:
  - 2 Management Modules with 2 Standard Modules
  - 1 Management Module with 3 Standard Modules
- 160-port Gigabit copper, 156-port Gigabit SFP, 60-port 10G SFP+ and 6-port 40G QSFP+
- Hot-swappable switching modules
- Non-blocking wire-speed Layer 2 and Layer 3 switching
- 1 RJ45 serial console interface on Management Module for switch basic management and setup

Redundant Power System

- 100~240V AC dual power redundant
  - 1 default AC power supply
  - 1 additional open slot for optional power supply
- Active-active redundant power failure protection
- Backup of catastrophic power failure on one supply

IP Stacking

- IP stacking technology -- connect with stack member via any Gigabit /10G/40G interface
- Single IP address management, supporting up to stackable 24 units

IP Routing Features

- IP Routing protocol supports RIP v1/v2, OSPF v2, BGP4
- Routing interface provides VLAN routing mode
- Policy-based Routing(PBR) for IPv4 and IPv6
- VRRP protocol for redundant routing deployment
- Supports route redistribution

Multicast Routing Features

- Supports Multicast Routing Protocols:
  - PIM-DM (Protocol Independent Multicast - Dense Mode)
  - PIM-SM (Protocol Independent Multicast - Sparse Mode)
  - PIM-SSM (Protocol Independent Multicast - Source-Specific Multicast Mode)
  - DVMRP (Distance Vector Multicast Routing Protocol)
- Supports IGMP v1/v2/v3

Layer 2 Features

- Supports auto-negotiation, auto-MDI/MDI-x and half-duplex/full-duplex modes for all 1000BASE-T ports.
- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- Supports VLAN
  - IEEE 802.1Q tagged VLAN
  - Up to 4K VLANs groups, out of 4041 VLAN IDs

Full IPv6 Support

The XGS3-42000R Chassis Switch supports IPv6 routing in hardware for maximum performance. As more network devices are growing and the need for larger addressing and higher security becomes critical, the XGS3-42000R Chassis Switch is the right product to meet the requirements.

Scalable Performance

The XGS3-42000R delivers wire-speed Gigabit and 40-Gigabit Ethernet connectivity in a highly-flexible and resilient modular platform. With high switching capacity, the XGS3-42000R Chassis Switch supports wire-speed L2/L3 forwarding and high routing performance for IPv4 and IPv6 protocols. The scalable and flexible modular architecture supports up to 1728Gbps forwarding performance in a single system. The XGS3-42000R is ideal for the core layer of campuses, enterprise networks and the aggregation layer of IP metropolitan networks.

Rich Multi-Layer and Multicast Networking Protocols

The XGS3-42000R supports various Layer 2 and management networking protocols to meet the requirements of complex network constructions. It is compatible with 802.1d/w/s, 802.1Q, 802.1p, 802.3ad, 802.3x, GVRP, DHCP, SNTP, etc.

The Chassis Switch also supports IPv6/IPv4 routing protocols including Layer 3 IP Static Routing, RIPv1/v2, OSPF, and VRRP protocols. Built in with abundant multicast features, the XGS3-42000R supports rich L2 multicast features such as IGMP snooping v1/v2/v3 and L3 multicast protocols -- DVMRP, PIM-DM, PIM-SM and PIM-SSM. Offering the rich application experience, the product supports multicast VLAN registration, multicast receive control and illegal multicast source detect functions. The XGS3-42000R Chassis Switch solution is cost-effective yet has the ability to expand to meet today's demand for network expansion.

Enhanced Security

PLANET XGS3-42000R offers comprehensive Layer 2 to Layer 4 Access Control List (ACL) for enforcing security to the edge. It can be used to restrict network access by denying packets based on source and destination IP address, TCP/UDP ports or defined typical network applications. Its protection mechanism also comprises 802.1x port-based and MAC-based user and device authentication. With the private VLAN function, communication between edge ports can be prevented to ensure user privacy. The XGS3-42000R Net Security also provides DHCP Snooping, IP Source Guard and Dynamic ARP Inspection functions to prevent from IP snooping attack and discard ARP packets with invalid MAC address. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - GVRP protocol for VLAN Management
  - Private VLAN Edge (PVE)
- Supports Spanning Tree Protocol
  - STP, IEEE 802.1d (Spanning Tree Protocol)
  - RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol)
  - MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol, spanning tree by VLAN)
- Supports Link Aggregation
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
  - Maximum 128 trunk groups, up to 8 ports per trunk group
  - Up to 16Gbps bandwidth (Duplex Mode)
- Provides Port Mirror (many-to-1)
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port

Quality of Service

- 8 priority queues on all switch ports
- Supports strict priority and Weighted Round Robin (WRR) CoS policies
- Ingress Shaper and Egress Rate Limit per port bandwidth control
- Traffic policies based on application

Multicast

- Supports IGMP snooping v1, v2 and v3
- Querier mode support

Security

- IEEE 802.1x port-based network access authentication
- MAC-based network access authentication
- IP-based Access Control List (ACL)
- MAC-based Access Control List
- Static MAC

Management

- IPv4/IPv6 Switch Management Interfaces
- Console/Telnet Command Line Interface
- Web switch management
- SNMP v1, v2c, and v3 switch management
- SSH (Secure Shell)/SSL secure access
- Four RMON groups (history, statistics, alarms and events)
- IPv6 IP Address/NTP/DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- DHCP/BOOTP relay and Relay Option 82
- DHCP Server
- DNS-Proxy
- Firmware upload/download via FTP/TFTP
- SNTP (Simple Network Time Protocol)
- LLDP (Link Layer Discovery Protocol)
- User Privilege levels control

Enhanced Quality of Service

The XGS3-42000R Switch fully supports DiffServ module, so users can specify a queue bandwidth on each port. WRR/SP/SWRR scheduling is also provided. The XGS3-42000R supports the port security to enable trusted CoS, DSCP, IP precedence and port priority. Users can modify packets' DSCP and COS values so that the traffic can be classified by port, VLAN, DSCP, IP precedence and ACL table. User can also modify packets' DSCP and IP precedence values to specify different bandwidths for voice, data and video to customize different qualities of service.

Efficient and Secure Management

For efficient management, the XGS3-42000R Chassis Switch is equipped with console, Web and SNMP management interfaces. With the built-in Web-based management interface, the XGS3-42000R offers an easy-to-use, platform-independent management and configuration facility. The XGS3-42000R supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For text-based management, the XGS3-42000R can be accessed via Telnet and the console port. Moreover, the XGS3-42000R offers secure remote management by supporting SSH, SSL and SNMPv3 connection which encrypt the packet content at each session.

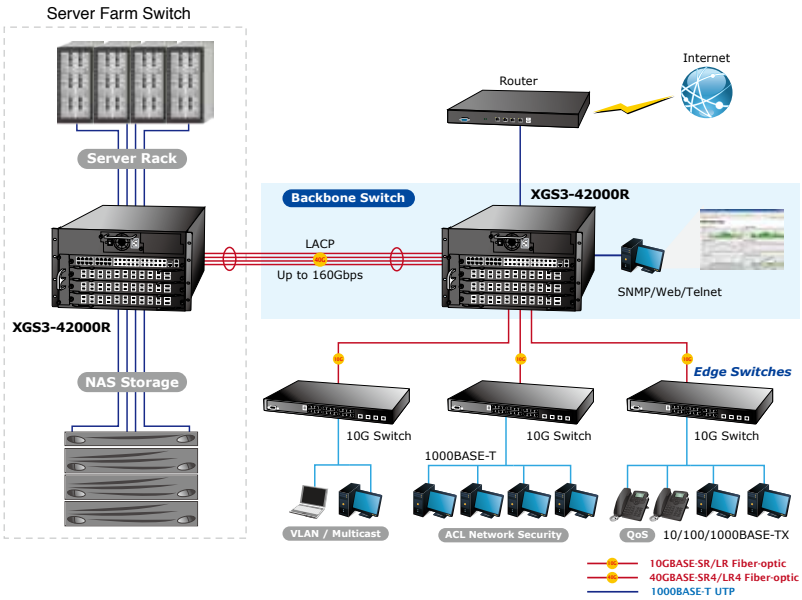
Available Chassis Management and Standard Modules

Modules Name	Photo	Description
XGS3-M16S8C		Management Module for XGS3-42000R with 24 Gigabit Ports (16 TP/SFP Combo Ports + 8 100/1000X SFP Ports)
XGS3-S20X2Q		Standard Module for XGS3-42000R with 20-Port 10G SFP+ + 2-Port 40G QSFP+
XGS3-S44S4X		Standard Module for XGS3-42000R with 44-Port 100/1000BASE-X SFP + 4-Port 10G SFP+
XGS3-S16C8S4X		Standard Module for XGS3-42000R with 24 Gigabit Ports (16 TP/SFP Combo Ports + 8 100/1000X SFP Ports) + 4 10G SFP+ Ports
XGS3-S48G		Standard Module for XGS3-42000R with 48 Gigabit Copper Ports

Applications

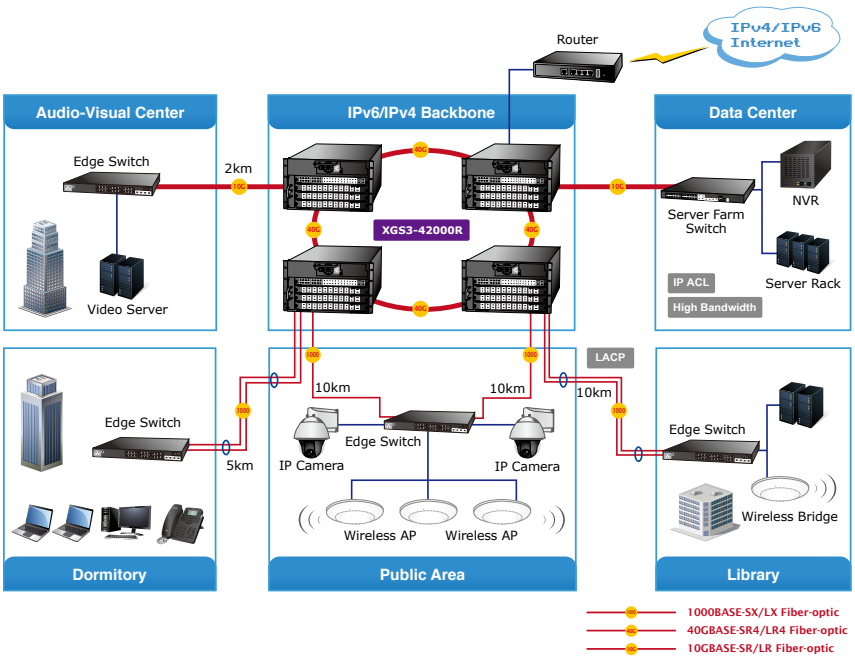
Reliable, High-performance and High-density Enterprise Backbone Switch

10/40-Gigabit Ethernet supported equipment has become the fundamental unit of enterprises and network servers. PLANET XGS3-42000R is the cost-effective, high-density and high-bandwidth chassis switch, which meets today's market requirements. Its dedicated chassis architecture feature makes all modules in the platform operate together as one much larger switch providing multiple high-performance 10/40-Gigabit Ethernet network for backbone of enterprises, campuses or telecoms. The redundant management modules and dual power supplies provide the XGS3-42000R with nonstop network service ability. Moreover, all modules are hot-swappable. They can be added or exchanged without interrupting the operation of the whole system. The XGS3-42000R Chassis Switch is ideal for being a server farm switch connecting to servers and perfectly suitable for those networking environments requiring constant access to critical business applications.



Carrier Class Backbone Switch for Campus and Community

For small area network communications on the campus and in the community, PLANET XGS3-42000R Chassis Switch is the best choice for an affordable and scalable network deployment. It offers a high-capacity chassis platform with high quality and reliability in 10/100/1000BASE-T, 1000BASE-SX/LX, 10GBASE-SR/LR and 40GBASE-SR4/LR4 scalable solutions that integrate easily into any large network. The XGS3-42000R can provide a maximum of up to either 160 high-density Gigabit Ethernet ports, 156 mini-GBIC/SFP ports, 60 10G SFP+ ports or 6 40G QSFP+ ports which are available for remote uplink connectivity in a single system and provide the uplink to the edge network through 1000BASE-SX/LX SFP modules, 10GBASE-SR/LR SFP+ modules or 40GBASE-SR4/LR4 QSFP+ modules. The XGS3-42000R offers a comprehensive set of modules for complex network and gives network manager the flexibility to expand large area network when needed.



Specifications

Product	XGS3-42000R
Hardware Version	2
Chassis Slots	
Total Number of Slots	4 (2 management modules + 2 standard modules) or (1 management module + 3 standard modules)
Max. Management Module	2 (Slot 1, Slot 2)
Max. Standard Module	3 (Slots 2, 3, 4)
Management Module Redundancy	Yes
Number of Power Supply Bays	2
Number of Fan Trays	1, hot-pluggable
Total Port Capacity	
Max. 40G QSFP+ Slots	6
Max. 10G SFP+ Slots	60
Max. 10/100/1000BASE-T Slots	160
Max. 1000BASE-SX/LX SFP Slots	156
Modules	
XGS3-M16C8S	24-port Gigabit (16-port TP/SFP Combo + 8-port 100/1000X SFP)/MGMT Module
XGS3-S20X2Q	20-port 10G SFP+ + 2-port 40G QSFP+ Switch Module/Standard Module
XGS3-S44S4X	44-port 100/1000BASE-X SFP + 4-port 10G SFP+ Switch Module/Standard Module
XGS3-S16C8S4X	24-port Gigabit (16-port TP/SFP combo + 8-port 100/1000X SFP) + 4-port 10G SFP+ Switch Module/Standard Module
XGS3-S48G	48-port 10/100/1000BASE-T Switch Module/Standard Module
Performance	
Switch Processing Scheme	Store-and-Forward
MAC Table	64K
VLAN Table	4K
ACL Table	16K max.
Routing Table	IPv4 Protocol: 128K max. IPv6 Protocol: 64K max.
Layer 3 Interface	500
Port Queues	8
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	9Kbytes
Hardware Specifications	
Dimensions (W x D x H)	440 x 421 x 266 mm
Relative Humidity	10%~90% (non-condensing)
Operating Temperature	0°C~50°C
Power Input	AC: Input 100~240V, 50~60 Hz
Power Consumption	≤500W
IPv4 Layer 3 Functions	
IP Routing Protocol	Static Route, RIPv1/v2, OSPFv2, BGP4 Policy-based Routing (PBR) LPM Routing (MD5 authentication)
Multicast Routing Protocol	IGMP v1/2/3, DVMRP, PIM-DM/SM, PIM-SSM
IPv4 Layer 3 Protocol	VRRP, ARP, ARP proxy
Routing Interface	Per VLAN
IPv6 Layer 3 Functions	
IP Routing Protocol	RIPng, OSPFv3, BGP4+
Multicast Routing Protocol	PIM-SM/DM for IPv6 MLD for IPv6 MLDv1/v2 MLD snooping, 6 to 4 tunnels Multicast receive control Illegal multicast source detection
IPv6 Layer 3 Protocol	Configured tunnels , ISATAP, CIDR
Layer 2 Functions	
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Bandwidth control on each port Port loopback detection
VLAN	802.1Q tagged-based VLAN, up to 4K VLAN groups Q-in-Q GVRP Private VLAN

Spanning Tree Protocol	STP, IEEE 802.1d (Spanning Tree Protocol) RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol) MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol, Spanning Tree by VLAN) Root Guard BPDU Guard
Link Aggregation	Static trunk IEEE 802.3ad LACP 128 trunk groups with 8 ports per trunk
QoS	Traffic classification based, strict priority and WRR 8-level priority for switching - Port number - 802.1p priority - DSCP/TOS field in IP Packet Policy-based DiffServ
Multicast	IGMP snooping v1/v2/v3 IGMP proxy IGMP querier mode MLD snooping v1/v2
Access Control List	Supports standard and expanded ACL IP-based ACL/MAC-based ACL Time-based ACL ACL pool can be used for QoS classification Up to 1K entries
Security	Supports MAC+ port binding IPv4/IPv6 + MAC+ port binding IPv4/IPv6 + port binding Supports MAC filter ARP spoofing prevention ARP scanning prevention IP source guard
Authentication	IEEE 802.1x port-based network access control AAA Authentication: IPv4/IPv6 over RADIUS
SNMP MIBs	RFC-1213 MIB-II IF-MIB RFC-1493 Bridge MIB RFC-1643 Ethernet MIB RFC-2863 Interface MIB RFC-2665 Ether-Like MIB RFC-2674 Extended Bridge MIB RFC-2819 RMON MIB (Groups 1, 2, 3 and 9) RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB RFC-2933 IGMP-STD-MIB RFC3411 SNMP-Frameworks-MIB IEEE802.1X PAE LLDP MAU-MIB
Management Functions	
System Configuration	Console; Telnet, SSH; Web Browser; SSL; SNMPv1, v2c and v3
Management Interface	IPv4/IPv6 HTTP, SSL, SNMP, FTP/TFTP, NTP, SSH Telnet, CLI RADIUS, TACACS+ RMON (Groups 1,2,3,9) SNMP MTB and trap
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3z 1000BASE-SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3ae 10Gigabit Ethernet IEEE 802.3ba 40Gigabit Etherent IEEE 802.3x Flow Control and Back Pressure IEEE 802.3ad Port Trunk with LACP IEEE 802.1d Spanning Tree protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN tagging IEEE 802.1x Port Authentication Network Control IEEE 802.1ab LLDP
Environment	
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 10 ~ 90% (non-condensing)
Storage	Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 90% (non-condensing)

Ordering Information

XGS3-42000R	4-slot Layer 3 IPv6/IPv4 Routing Chassis Switch (with one AC power supply unit)

Available Management and Standard Power Modules

XGS3-M16C8S	Management Module for XGS3-42000R with 24 Gigabit Ports (16 TP/SFP Combo Ports + 8 100/1000X SFP Ports)
XGS3-S20X2Q	Standard Module for XGS3-42000R with 20-Port 10G SFP+ + 2-Port 40G QSFP+
XGS3-S44S4X	Standard Module for XGS3-42000R with 44-Port 100/1000BASE-X SFP + 4-Port 10G SFP+
XGS3-S16C8S4X	Standard Module for XGS3-42000R with 24 Gigabit Ports (16 TP/SFP Combo Ports + 8 100/1000X SFP Ports) + 4 10G SFP+ Ports
XGS3-S48G	Standard Module for XGS3-42000R with 48 Gigabit Copper Ports
XGS3-PWR-AC	500-watt AC Power Supply for XGS3-42000R

Available for 40Gbps Ports

CB-DAQSFP-0.5M	40G QSFP+ Direct Attached Copper Cable (0.5M)
CB-DAQSFP-2M	40G QSFP+ Direct Attached Copper Cable (2M)

Available 10Gbps Modules

MTB-SR	SFP-Port 10GBASE-SR Mini-GBIC Module – 300m
MTB-LR	SFP-Port 10GBASE-LR Mini-GBIC Module – 10km
MTB-TSR	SFP-Port 10GBASE-SR Mini-GBIC Module – 300m (-40 ~ 75℃)
MTB-TLR	SFP-Port 10GBASE-LR Mini-GBIC Module – 10km (-40 ~ 75℃)
MTB-LA20	SFP-Port 10GBASE-LR (WDM,TX:1270nm) Mini-GBIC Module – 20km
MGB-LB20	SFP-Port 10GBASE-LR (WDM,TX:1330nm) Mini-GBIC Module – 20km
MGB-LA40	SFP-Port 10GBASE-LR (WDM,TX:1270nm) Mini-GBIC Module – 40km
MGB-LB40	SFP-Port 10GBASE-LR (WDM,TX:1330nm) Mini-GBIC Module – 40km
MGB-LA60	SFP-Port 10GBASE-LR (WDM,TX:1270nm) Mini-GBIC Module – 60km
MGB-LB60	SFP-Port 10GBASE-LR (WDM,TX:1330nm) Mini-GBIC Module – 60km

Available 1000bps Modules

MGB-GT	SFP-Port 1000BASE-T Module
MGB-SX	SFP-Port 1000BASE-SX Mini-GBIC Module – 220/550m
MGB-SX2	SFP-Port 1000BASE-SX Mini-GBIC Module – 2km
MGB-LX	SFP-Port 1000BASE-LX Mini-GBIC Module – 10km
MGB-L30	SFP-Port 1000BASE-LX Mini-GBIC Module – 30km
MGB-L50	SFP-Port 1000BASE-LX Mini-GBIC Module – 50km
MGB-L70	SFP-Port 1000BASE-LX Mini-GBIC Module – 70km
MGB-L120	SFP-Port 1000BASE-LX Mini-GBIC Module – 120km
MGB-LA10	SFP-Port 1000BASE-LX (WDM,TX:1310nm) Mini-GBIC Module – 10km
MGB-LB10	SFP-Port 1000BASE-LX (WDM,TX:1550nm) Mini-GBIC Module – 10km
MGB-LA20	SFP-Port 1000BASE-LX (WDM,TX:1310nm) Mini-GBIC Module – 20km
MGB-LB20	SFP-Port 1000BASE-LX (WDM,TX:1550nm) Mini-GBIC Module – 20km
MGB-LA40	SFP-Port 1000BASE-LX (WDM,TX:1310nm) Mini-GBIC Module – 40km
MGB-LB40	SFP-Port 1000BASE-LX (WDM,TX:1550nm) Mini-GBIC Module – 40km
MGB-TSX	SFP-Port 1000BASE-SX Mini-GBIC Module – 220/550m (-40 ~ 75℃)
MGB-TLX	SFP-Port 1000BASE-LX Mini-GBIC Module – 10km (-40 ~ 75℃)
MGB-TL30	SFP-Port 1000BASE-LX Mini-GBIC Module – 30km (-40 ~ 75℃)
MGB-TL70	SFP-Port 1000BASE-LX Mini-GBIC Module – 70km (-40 ~ 75℃)
MGB-TLA10	SFP-Port 1000BASE-LX (WDM,TX:1310nm) Mini-GBIC Module – 10km (-40 ~ 75℃)
MGB-TLB10	SFP-Port 1000BASE-LX (WDM,TX:1550nm) Mini-GBIC Module – 10km (-40 ~ 75℃)
MGB-TLA20	SFP-Port 1000BASE-LX (WDM,TX:1310nm) Mini-GBIC Module – 20km (-40 ~ 75℃)
MGB-TLB20	SFP-Port 1000BASE-LX (WDM,TX:1550nm) Mini-GBIC Module – 20km (-40 ~ 75℃)
MGB-TLA40	SFP-Port 1000BASE-LX (WDM,TX:1310nm) Mini-GBIC Module – 40km (-40 ~ 75℃)
MGB-TLB40	SFP-Port 1000BASE-LX (WDM,TX:1550nm) Mini-GBIC Module – 40km (-40 ~ 75℃)
MGB-TLA60	SFP-Port 1000BASE-LX (WDM,TX:1310nm) Mini-GBIC Module – 60km (-40 ~ 75℃)
MGB-TLB60	SFP-Port 1000BASE-LX (WDM,TX:1550nm) Mini-GBIC Module – 60km (-40 ~ 75℃)

Available 100Mbps Modules

MFB-FX	SFP-Port 100BASE-FX Transceiver (1310nm) – 2km
MFB-F20	SFP-Port 100BASE-FX Transceiver (1310nm) – 20km
MFB-F40	SFP-Port 100BASE-FX Transceiver (1310nm) – 40km
MFB-F60	SFP-Port 100BASE-FX Transceiver (1310nm) – 60km
MFB-F120	SFP-Port 100BASE-FX Transceiver (1310nm) – 120km
MFB-TFX	SFP-Port 100BASE-FX Transceiver (1310nm) – 2km (-40 ~ 75℃)
MFB-TF20	SFP-Port 100BASE-FX Transceiver (1310nm) – 20km (-40 ~ 75℃)
MFB-FA20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) – 20km
MFB-FB20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) – 20km
MFB-TFA20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) – 20km (-40 ~ 75℃)
MFB-TFB20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) – 20km (-40 ~ 75℃)
MFB-TFA40	SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) – 20km (-40 ~ 75℃)
MFB-TFB40	SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) – 20km (-40 ~ 75℃)

PLANET Technology Corporation

11F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)
Tel: 886-2-2219-9518 Fax: 886-2-2219-9528
Email: sales@planet.com.tw www.planet.com.tw