

Wireless AP Controller with 8-Port 802.3at PoE+



Wireless Management Solution in All Aspects

PLANET WAPC-1232HP, a brand-new Wireless Access Point Controller, features smart AP control, L2+/L4 IP management and intelligent PoE capability to enable service providers and IT managers to control all wireless APs at the same time in small and medium wireless network environments, such as hotels, villas, resorts and any public area. The WAPC-1232HP provides IPv6/IPv4 dual stack management and built-in L2/L4 Gigabit Switching engine along with 8 10/100/1000BASE-T ports featuring 30-watt 802.3at PoE+, 2 additional Gigabit copper ports and another 2 extra 100/1000BASE-X SFP fiber slots. Its simplified deployment and management ease the integration of devices into the existing wired and wireless networks.

Layer 2+ / 4 Management

AP Controller

PoE+ Switch



Physical Port

- 10-Port 10/100/1000BASE-T Gigabit RJ45 copper with 8-Port IEEE 802.3at PoE Injector (Port-1 to Port-8)
- 2 100/1000BASE-X mini-GBIC/SFP slots, SFP type auto detection
- RJ45 type console interface for basic management and setup

Wireless AP Management

- Automatically discovers managed APs, up to 32 units
- Locally maintains configuration profiles for all managed APs
- Centrally monitors all managed APs' statuses and associated client list
- Eight built-in 802.3at PoE+ ports to directly manage AP power control
- AP alive check for automatic operating status diagnostic

Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus
- Backward compatible with IEEE 802.3af Power over Ethernet
- Up to 8 ports for IEEE 802.3af/at devices powered
- Supports PoE power up to 30.8 watts for each PoE port
- Auto detects powered device (PD)
- Remote power feeding up to 100m
- PoE Management
 - Total PoE power budget control
 - Per port PoE function enable/disable
 - PoE Port Power feeding priority
 - Per PoE port power limitation
 - PD classification detection
 - PD alive-check

Layer 2 Features

- Storm Control support
 - Broadcast / Multicast / Unicast / Unknown unicast
- Supports VLAN
 - IEEE 802.1Q tagged VLAN
 - Up to 255 VLANs groups, out of 4095 VLAN IDs
 - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
 - Private VLAN Edge (PVE)
 - Protocol-based VLAN
 - MAC-based VLAN
 - IP Subnet-based VLAN
 - Voice VLAN
 - Management VLAN

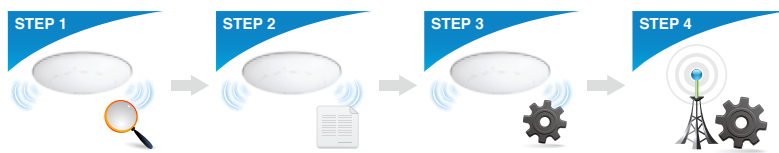
Centralized Remote Control of Managed APs

PLANET Wireless AP Controller features centralized remote control of managed APs without needing to manually configure each AP for the wireless SSID, radio band and security settings. With one click of the mouse for the one-time configuration of the WAPC-1232HP's wireless parameters, wireless settings of multiple APs can be simultaneously established to minimize deploying time, effort and cost.



Optimizing Wireless Network within Minutes

The WAPC-1232HP offers a user-friendly Web GUI for easy configuration. It enables wireless IT managers to complete a four-step configuration process of multiple APs. Through this Web interface, the wireless IT managers can discover manageable APs on the networks first, edit AP profiles and then apply the profiles to selected AP or AP group. Following these steps, configurations for multiple APs can be done in just a few minutes.



Wireless AP Cluster Management

The WAPC-1232HP supports wireless AP cluster management, which enables the central management of a group of wireless APs at one time. According to requirements, wireless APs can be flexibly expanded or removed from a wireless AP group in the future.

- 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 (via VLAN)
 - STP BPDU Guard and BPDU filtering
- Supports Link Aggregation
 - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
 - Cisco ether-channel (static trunk)
 - Maximum 4 trunk groups, up to 4 ports per trunk group
 - Up to 8Gbps bandwidth (full duplex mode)
- Provides port mirror (many-to-1)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port
- Loop protection to avoid broadcast loops

Layer 3 IP Routing Features

- Supports maximum 32 software static routes and route summarization

Quality of Service

- Ingress Shaper and Egress Rate Limit per port bandwidth control
- 8 priority queues on all switch ports
- Traffic classification
 - IEEE 802.1p CoS
 - TOS / DSCP / IP Precedence of IPv4/IPv6 packets
 - IP TCP/UDP port number
 - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Traffic-policing policies on the switch port
- DSCP remarking

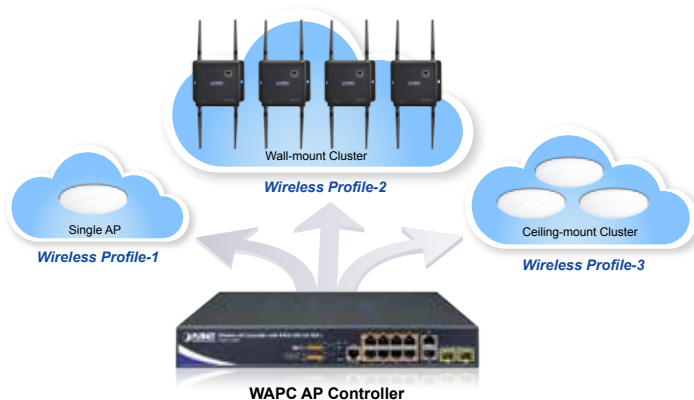
Multicast

- Supports IGMP Snooping v1, v2 and v3 for IPv4 multicasting network
- Supports MLD Snooping v1 and v2 for IPv6 multicasting network
- Querier mode support
- IGMP Snooping port filtering
- MLD Snooping port filtering
- MVR (Multicast VLAN Registration)

Security

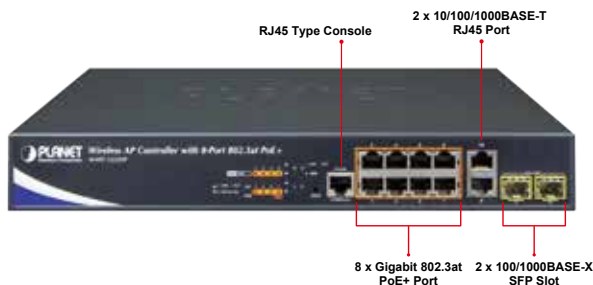
- Authentication
 - IEEE 802.1x Port-based / MAC-based network access authentication
 - Built-in RADIUS client to co-operate with the RADIUS servers

AP Cluster Management



Centralized Power Management for Wireless AP Networking

The eight Gigabit PoE ports of the WAPC-1232HP can be used to provide power directly to APs that connect to the AP controller. Each of the eight Gigabit ports provides 30 watts of power, which means a total power budget of up to 240 watts can be utilized simultaneously without considering the different types of PoE applications being employed. It provides a quick, safe and cost-effective Power over Ethernet network solution to Access Points for small businesses and enterprises.



Built-in Unique PoE Functions for AP Power Control

As a managed PoE Switch for stable and reliable wireless AP operation, the WAPC-1232HP features special PoE Management functions:

- AP Alive Check
- Scheduled AP Power Recycling
- PoE Schedule
- SMTP/SNMP Trap Event Alert

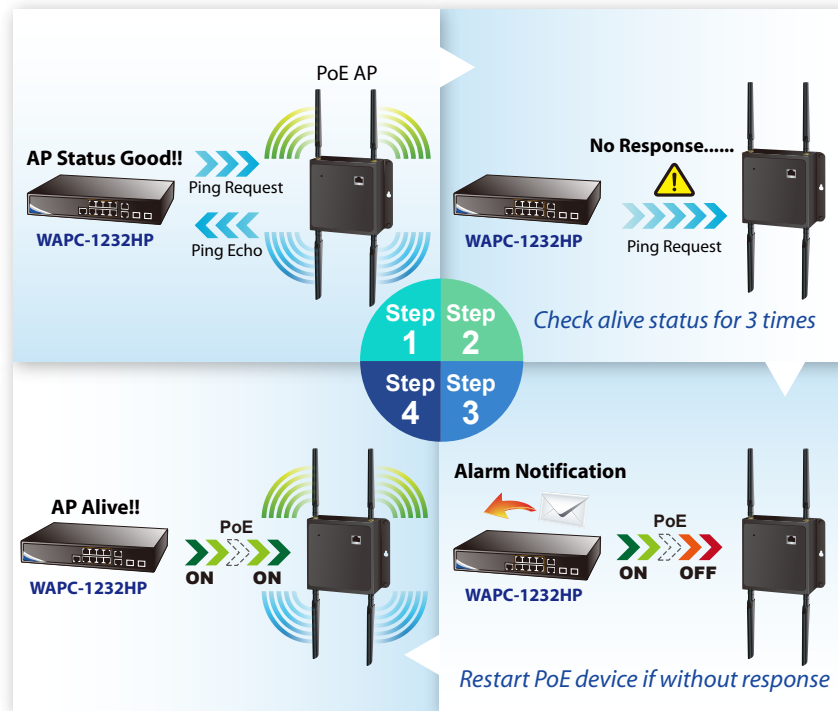
Intelligent PoE AP Alive Check

The WAPC-1232HP can be configured to monitor connected AP status in real time via ping action. Once the AP stops working and responding, the WAPC-1232HP will recycle the PoE port power and bring the AP back to work. It will greatly enhance the network reliability through the PoE port resetting the AP's power source and reduce administrator management burden.

- TACACS+ login users access authentication
- RADIUS / TACACS+ users access authentication
- Access Control List
 - IPv4 / IPv6 IP-based ACL
 - MAC-based ACL
- Source MAC / IP address binding
- Port Security for Source MAC address entries filtering
- DHCP Snooping to filter distrusted DHCP messages
- Dynamic ARP Inspection discards ARP packets with invalid MAC address to IP address binding
- IP Source Guard prevents IP spoofing attacks
- Auto DoS rule to defend DoS attack
- IP address access management to prevent unauthorized intruder

Management

- IPv4 and IPv6 dual stack management
- Switch management interfaces
 - Console / Telnet command line interface
 - Web switch management
 - SNMP v1, v2c, and v3 switch management
 - SSH / SSL secure access
- User privilege levels control
- System maintenance
 - Firmware upload / download via HTTP / TFTP
 - Configuration upload / download through web interface
 - Dual images
 - Reset button for system reboot or reset to factory default
 - Built-in Trivial File Transfer Protocol (TFTP) client
- Four RMON groups (history, statistics, alarms and events)
- IPv6 IP Address / NTP / DNS management and ICMPv6
- BOOTP and DHCP for IP address assignment
- DHCP Relay
- DHCP Option82
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues
- PLANET Smart Discovery Utility for deployment management



PoE Schedule for Energy Saving

The “PoE schedule” function enables wireless IT managers to activate or inactivate PoE power feeding for each PoE port during specified time intervals, which is a powerful function to help SMBs or enterprises save power and money.

Robust Layer2 Features

The WAPC-1232HP can be programmed for advanced switch management function, such as dynamic port link aggregation, Q-in-Q VLAN, Multiple Spanning Tree Protocol (MSTP), Loop protection, IGMP/MLD snooping, Layer 2/4 QoS, and bandwidth control. The WAPC-1232HP allows the operation of a high-speed trunk with multiple ports and supports connection fail-over as well.

Powerful Security

The WAPC-1232HP offers comprehensive layer 2 to layer 4 access control list (ACL) for enforcing security to the edge. It can be used to restrict to network access by denying packets based on source and destination IP address, TCP/UDP port number or defined typical network applications. Its protection mechanism also comprises 802.1x port-based and MAC-based users and device authentication.

Enhanced Security and Traffic Control

The WAPC-1232HP also provides DHCP Snooping, IP Source Guard and Dynamic ARP Inspection functions to prevent IP snooping from attack and discard ARP packets with invalid MAC address. The network administrator can now build highly-secure corporate networks with considerably less time and effort than before.

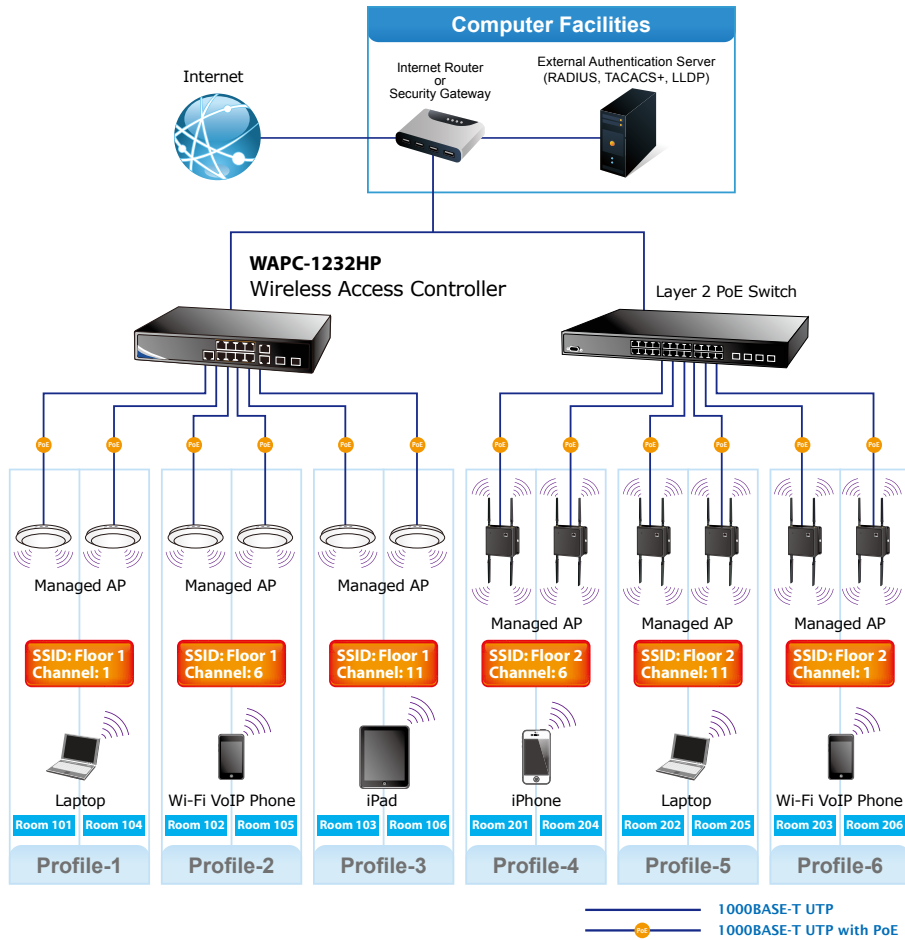
User-friendly Secure Management

For efficient management, the WAPC-1232HP is equipped with console, Web and SNMP management interfaces. With the built-in web-based management interface, the WAPC-1232HP offers an easy-to-use, platform independent management and configuration facility. Moreover, the WAPC-1232HP offers remote secure management by supporting SSH, SSL and SNMPv3 connection which can have the packet content encrypted at each session.

Applications

Centralized AP Management for Enterprises

When service providers deploy a large number of wireless APs in buildings such as hotel, villas, resorts and more, PLANET WAPC-1232HP Wireless Access Point Controller helps service providers and IT managers control all wireless APs at the same time. The WAPC-1232HP enables administrators to effectively manage up to 32 controlled wireless access points in different locations. The administrator can automatically discover, configure, update and monitor all the managed APs through one single browser-based web user interface. Such design avoids the need to configure the wireless APs one by one.



Specifications

Model	WAPC-1232HP	
Hardware Specifications		
Copper Ports	10 x 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports	
SFP/mini-GBIC Slots	2 1000BASE-SX/LX/BX SFP interfaces (Port-11 and Port-12) Supports 100/1000Mbps dual mode and DDM	
Console Port	1 x RS232-to-RJ45 serial port (115200, 8, N, 1)	
Switch Architecture	Store-and-Forward	
Switch Fabric	24Gbps / non-blocking	
Switch Throughput	17.76Mpps@64 bytes	
Address Table	8K entries, automatic source address learning and ageing	
Shared Data Buffer	1392 kilobytes	
ESD Protection	6KV	
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex	
Jumbo Frame	9Kbytes	
Reset Button	< 5 seconds: System reboot > 5 seconds: Factory default	
Dimensions (W x D x H)	330 x 200 x 43.5 mm, 1U height	
Weight	2kg	
LED	Power, fan alert, 10/100/1000 Link / Act per RJ45 port, 100/1000 Link / Act per SFP port, PoE-in-Use for Port 1~ 8	
Power Consumption	Max. 320 watts / 1091 BTU	
Power Requirements	100~240V AC, 50/60Hz	
Enclosure	Metal	
Fan	Smart fan x 1 (Speed depending on operating temperature)	
Wireless AP Management		
Maximum Managed APs	32	
Maximum AP Groups	10	
Maximum APs per AP Group	32	
Compatible Access Points	<ul style="list-style-type: none"> • WDAP-C7200AC • WDAP-W7200AC • WNAP-C3220A • WNAP-W2201A 	
Encryption Security	<ul style="list-style-type: none"> • WEP (64/128-bit) encryption security • WPA Personal / Enterprise (TKIP / AES) • WPA2 Personal / Enterprise (TKIP / AES) • Enterprise Class 802.1x 	
Centralized AP Management	<ul style="list-style-type: none"> • AP auto discovery • Remote AP power reboot • AP auto IP assignment • AP group management • AP status monitoring • AP real-time traffic monitoring • AP device name / location editing 	
Power over Ethernet		
PoE Standard	IEEE 802.3af PoE / 802.3at PoE+ PSE	
PoE Power Supply Type	End-span	
PoE Power Output	Per port 56V DC, max. 30.8 watts	
Power Pin Assignment	1/2(+), 3/6(-)	
PoE Power Budget	240 watts (max.) @ 25 degrees C 200 watts (max.) @ 50 degrees C	
PoE Ability	PD @ 7 watts	8 units
	PD @ 15.4 watts	8 units
	PD @ 30.8 watts	8 units
Layer 2 Functions		
Port Configuration	Port disable / enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow control disable / enable	
Port Status	Display each port's speed duplex mode, link status, flow control status, auto-negotiation status, trunk status	
Port Mirroring	TX / RX / both Many-to-1 monitor	

VLAN	802.1Q tagged based VLAN 802.1ad Q-in-Q tunneling Private VLAN Edge (PVE) MAC-based VLAN Protocol-based VLAN Voice VLAN MVR (Multicast VLAN Registration) Up to 255 VLAN groups, out of 4094 VLAN IDs	
Link Aggregation	IEEE 802.3ad LACP / static trunk 5 trunk groups with each 5-port trunk supported	
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	
QoS	Traffic classification based, strict priority and WRR 8-level priority for switching - Port number - 802.1p priority - 802.1Q VLAN tag - DSCP/TOS field in IP packet	
IGMP Snooping	IGMP (v1 / v2 / v3) Snooping, up to 255 multicast groups IGMP Querier mode support	
MLD Snooping	MLD (v1/v2) Snooping, up to 255 multicast groups MLD Querier mode support	
Access Control List	IP-based ACL / MAC-based ACL Up to 256 entries	
Bandwidth Control	Per port bandwidth control Ingress: 100Kbps~1000Mbps Egress: 100Kbps~1000Mbps	
Layer 3 Functions		
IP Interfaces	Max. 8 VLAN interfaces	
Routing Table	Max. 32 routing entries	
Routing Protocols	IPv4 software static routing IPv6 software static routing	
Management Functions		
Basic Management Interfaces	Console / Telnet / Web browser / SNMP v1, v2c	
Secure Management Interfaces	SSH, SSL, SNMP v3	
SNMP MIBs	RFC 1213 MIB-II RFC 1493 Bridge MIB RFC 1643 Ethernet MIB RFC 2863 Interface MIB RFC 2665 Ether-Like MIB RFC 2819 RMON MIB (Group 1, 2, 3 and 9) RFC 2737 Entity MIB RFC 2618 RADIUS Client MIB	RFC 2863 IF-MIB RFC 2933 IGMP-STD-MIB RFC 3411 SNMP-Frameworks-MIB RFC 4292 IP Forward MIB RFC 4293 IP MIB RFC 4836 MAU-MIB IEEE 802.1X PAE LLDP Power over Ethernet MIB
Standards Conformance		
Regulatory Compliance	FCC Part 15 Class A, CE	
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T 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 802.1ad Q-in-Q VLAN stacking	IEEE 802.1X Port Authentication Network Control IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.1ab LLDP RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP version 1 RFC 2236 IGMP version 2 RFC 3376 IGMP version 3 RFC 2710 MLD version 1 RFC 3810 MLD version 2
Environments		
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 20 ~ 95% (non-condensing) Part 15 Class A, CE	
Storage	Temperature: -20 ~ 70 degrees C Relative Humidity: 20 ~ 95% (non-condensing)	

Ordering Information

WAPC-1232HP	Wireless AP Controller with 8-Port 802.3at PoE+ (10 x 10/100/1000T + 2 x 100/1000 SFP, 32 x APs controllable)
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Related Products

WAPC-2864HP	Wireless AP Controller with 24-Port 802.3at PoE + 4-Port 10G SFP+
WDAP-C7200AC	1200Mbps 11ac Dual Band Ceiling-mount Wireless Access Point, Gigabit LAN, 802.3af/at POE PD
WDAP-W7200AC	1200Mbps 11ac Dual Band Wall-mount Wireless Access Point, Gigabit LAN, 802.3af/at POE PD
WNAP-C3220A	300Mbps 802.11n Ceiling-mount Wireless Access Point
WNAP-W2201A	300Mbps 802.11n Wireless In-wall PoE Access Point

Available Modules

MGB-GT	SFP-Port 1000BASE-T Module
MGB-SX	SFP-Port 1000BASE-SX mini-GBIC module - 220/550m
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

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-FA20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) - 20km
MFB-FB20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) - 20km