IE200 Series

Industrial Ethernet Layer 2 Switches

Our ruggedized IE200 Industrial Ethernet switches provide enduring performance in harsh environments, such as those found in manufacturing, transportation and physical security. Offering high throughput, rich functionality and advanced security features, IE200 switches deliver the performance and reliability demanded by industrial deployments in the age of the Internet of Things (IoT).

Overview

The IE200 Series wirespeed Layer 2 switches are ideal for industrial Ethernet applications. With a wide operating temperature range of between -40°C and 75°C, they tolerate harsh and demanding environments, such as those found in industrial and outdoor deployment.

Device management is provided via an Industry-standard CLI, SNMP, Telnet, SSH, and the Allied Telesis Autonomous Management Framework™ (AMF). AMF is unique to Allied Telesis managed devices, offering simplified device provisioning, recovery, and firmware upgrade management.

Performance

These high-performing, cost-effective switches meet the stringent requirements of today's industrial networks. The robust IE200 series provides network managers with several key features—including port-based VLANs, IEEE 802.1p, QoS, port trunking/link aggregation, port mirroring, priority queues, and IEEE 802.1x security support.

With support for up to 2K MAC addresses, the IE200 Series is the ideal option for integrating management into any network solution.

Securing the network edge

Ensuring data protection means controlling network access. Protocols such as IEEE 802.1X port-based authentication guarantee that only known users are connected to the network. Unknown users who physically connect can be segregated into a pre-determined part of the network. This offers network guests Internet access, while ensuring the integrity of private network data.

Gigabit and fast Ethernet support

The IE200 Series SFP ports support both gigabit and Fast Ethernet Small Form-Factor Pluggables (SFPs). This makes the IE200 Series ideal for environments where gigabit fiber switches will be phased in over time. This allows for connectivity to the legacy 100FX hardware until it is upgraded to gigabit Ethernet.

Support for both speeds of SFPs allows organizations to stay within budget as they migrate to faster technologies.

High network resiliency

The IE200 Series supports highly stable and reliable network switching with a recovery time of less than 50ms.

You can customize the IE200 with the most appropriate mechanism and protocol to prevent network connection failure. Choices include Allied Telesis Ethernet Protection Switched Ring (EPSRing™), and the standard ITU-T G.8032.

Dual power inputs

The IE200 Series provides redundant power inputs for higher system reliability; the power inputs are protected against reverse polarity and over-current.

The integrated voltage regulator allows a wide input voltage range and ensures the PoE output voltage always stays at the rated value, regardless the fluctuation on input voltage.

Configurable power budget

On the IE200-6FP and IE200-6GP, you can configure both the overall power budget and the power feeding limit on a per-port basis, to establish a close relationship between the power the real capabilities of the external Power Supply Unit (PSU).*

* Power supply must be compliant with local/national safety and electrical code requirements. Select the supply with the most appropriated output power derating curve.

Key Features

- AlliedWare Plus™ functionalities
- Allied Telesis Autonomous Management Framework™ (AMF) node
- Industry-leading QoS
- Active Fiber Monitoring (AFM)
- Ethernet Protection Switched Ring (EPSRing™)
- Ethernet Ring Protection Switching (ITU-T G.8032)
- IEEE 802.3at PoE+ sourcing (30W)
- Continuous PoE
- Enhanced Thermal Shutdown
- Dual power inputs with voltage boost converter
- Alarm input/output
- USB port for image/configuration backup, restore, and upgrade
- Web-based GUI for easy management

AMF EPSRing™ ACTIVE FIBER MONITORING™

Key Features

Allied Telesis Autonomous Management Framework™ (AMF)

- AMF is a sophisticated suite of management tools that provide a simplified approach to network management. Common tasks are automated or made so simple that the every-day running of a network can be achieved without the need for highly-trained, and expensive, network engineers. Powerful features like centralized management, auto-backup, auto-upgrade, auto-provisioning and auto-recovery enable plug-and-play networking and zero-touch management.
- AMF secure mode encrypts all AMF traffic, provides unit and user authorization, and monitors network access to greatly enhance network security.

High Availability

- EPSRing™ and ITU-T G.8032 enable a protected ring capable of recovery within as little as 50ms. These features are perfect for high performance and high availability.
- Spanning Tree Protocol-compatible, RSTP; MSTP; static Link Aggregation Group (LAG), and dynamic Link Aggregation Control Protocol (LACP) support.

Industry-leading Quality of Service (QoS)

- Comprehensive low-latency wirespeed QoS provides flow-based traffic management with full classification, prioritization, traffic shaping and min/max bandwidth profiles. Enjoy boosted network performance and guaranteed delivery of business-critical Ethernet services and applications. Time-critical services such as voice and video take precedence over non-essential services such as file downloads, maintaining responsiveness of your applications.

Active Fiber Monitoring

- Active Fiber Monitoring prevents eavesdropping on fiber communications by monitoring received optical power. If an intrusion is detected, the link can be automatically shut down, or an operator alert can be sent.

UniDirectional Link Detection (UDLD)

- UDLD is useful for monitoring fiber-optic links between two switches tusing two single-direction fibers to transmit and receive packets. UDLD prevents traffic from being sent across a bad link, by blocking the ports at both ends of the link in the event that either the individual transmitter or receiver for that connection fails.

Link Layer Discovery Protocol – Media Endpoint Discovery (LLDP – MED)

- LLDP-MED extends LLDP basic network endpoint discovery and management functions. LLDP-MED allows for media endpoint specific messages, providing detailed information on power equipment, network policy, location discovery (for Emergency Call Services) and inventory.

Voice VLAN

- Voice VLAN automatically separates voice and data traffic into two different VLANs. This automatic separation places delay-sensitive traffic into a voice-dedicated VLAN, which simplifies QoS configurations.

Security (Tri-Authentication)

- Authentication options on the IE200 Series also include alternatives to IEEE 802.1X port-based authentication, such as web authentication to enable guest access, and MAC authentication for endpoints that do not have an IEEE 802.1X supplicant. All three authentication methods—IEEE 802.1X, MAC-based and Web-based—can be enabled simultaneously on the same port for tri-authentication.

Access Control Lists (ACLs)

- AlliedWare Plus delivers industry-standard access control functionality through ACLs. ACLs filter network traffic to control whether routed packets are forwarded or blocked at the port interface. This provides a powerful network security mechanism to select the types of traffic to be analyzed, forwarded, or influenced in some way.

Dynamic Host Configuration Protocol (DHCP) Snooping

- DHCP servers allocate IP addresses to clients, and the switch keeps a record of addresses issued on each port. IP source guard checks against this DHCP snooping database to ensure only clients with specific IP and/or MAC address can access the network. DHCP Snooping can be combined with other features, like dynamic ARP inspection, to increase security in Layer 2 switched environments. It also provides a traceable history which meets the growing legal requirements placed on service providers.

PoE and PoE+

- IE200 is a Power over Ethernet Power Sourcing Device (PoE PSD), which is compliant with IEEE802.3af, IEEE802.3at standards. Each port provides either 15.40W PoE with 12.95W available to the powered device (IEEE802.3af, IEEE802.3at Type 1), or 30.00W PoE+ with 25.50W available to the powered device (IEEE802.3at Type 2). Practical use is to support PTZ cameras with heater/blowers for outdoor application, enhanced infrared lighting, lighting controller and LED lighting fixtures, remote Point of Sale (POS) kiosks, network switches, and many other devices.
- IE200 allows the configuration of the overall power budget as well as the power feeding limit on a per-port basis. This establishes a close relationship between the power sourcing feature and the real capabilities of the external PSU.

Continuous PoE

- Enabling the unique Continuous PoE feature, the switch retains PoE sourcing during restart events, such as those due to operator command, software exception, watchdog timeout or diagnostic failures.
- The restart event is not propagated to the end devices, and camera operation is not affected.

Alarm Input/Output

- Alarm Input/Output are useful for security integration solution. They respond to events instantly and automatically using a pre-defined event scheme, and send alert messages to the monitoring control center. The two-pin terminal blocks may be connected to sensors and actuator relays. Alarm Input receives signals from external devices, like motion sensors or magnets, and these will trigger subsequent actions if something changes. Alarm output controls external devices in the case of an event for example sirens, strobes, and Pan-Tilt-Zoom (PTZ) cameras.

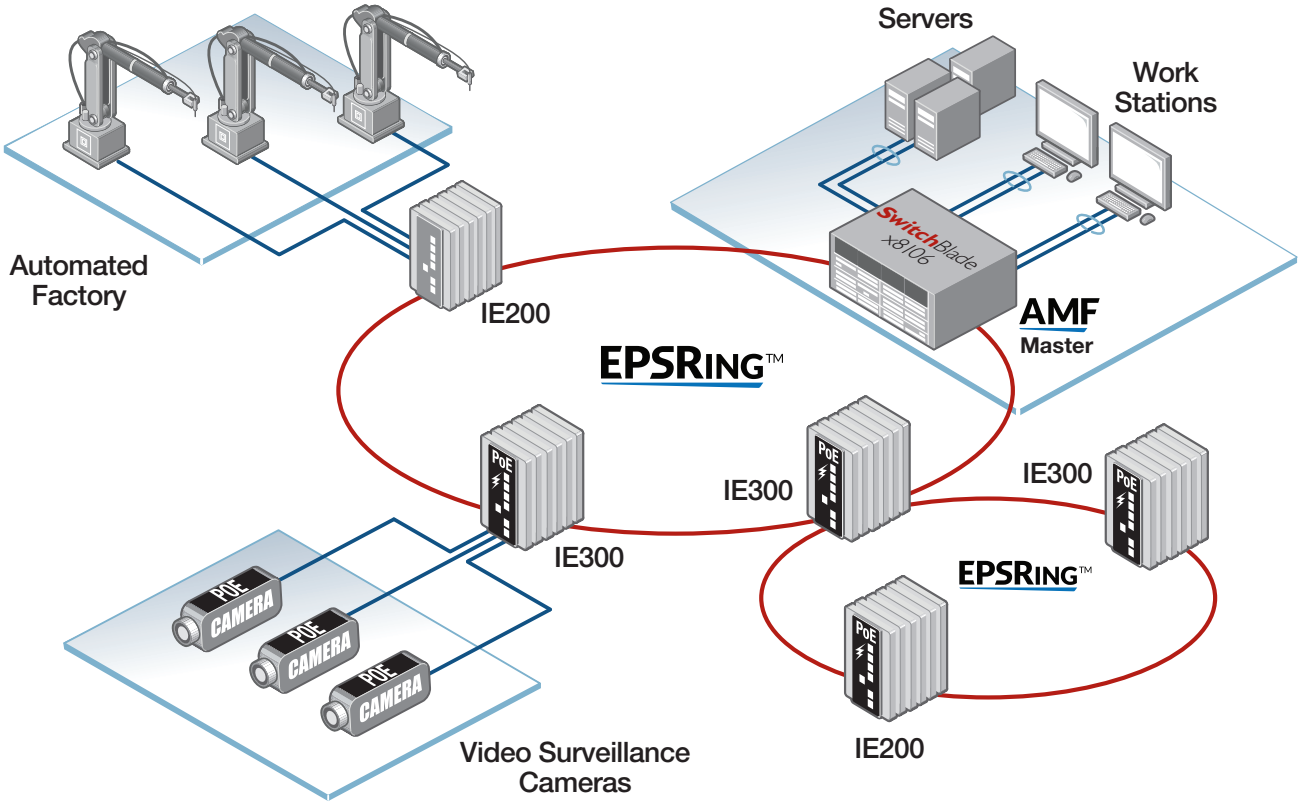
Enhanced Thermal Shutdown

- The Enhanced Thermal Shutdown feature acts when the switch exceeds the safe operating temperature. It functions in a set of stages to preserve services and prevent damage.
- If the operating temperature reaches critical levels, the system cuts the PoE sourcing to non-critical interfaces first, then to critical interfaces. If the temperature continues to rise, all services are disabled and the system enters standby mode. The system restores operation when the temperature returns to an acceptable level.

Premium Software License

- Included in the IE200 Series is a comprehensive Layer 2 feature set, which includes IPv6 management features. This feature set can be upgraded very easily by using premium software licenses.

Key Solutions



EPSRing™ ITU-T G.8032 provide high speed resilient ring connectivity; this diagram shows the IE Series in a double ring network topology.

The IE Series operates at a large -40°C to +75°C temperature range and allows deployment in outdoor and harsh industrial environments.

PoE models feed 30 Watts per port and support remotely controlled Pan, Tilt and Zoom (PTZ) video cameras.

The PoE models of IE200 feed 30 Watts per port and support remotely-controlled PTZ cameras.

Management can be automated with the Allied Telesis Autonomous Management Framework™ (AMF).

Specifications

PRODUCT	10/100T (RJ-45) COPPER PORTS	10/100/1000T (RJ-45) COPPER PORTS	100/1000X SFP PORTS	SWITCHING FABRIC	FORWARDING RATE (64-BYTE PACKETS)	POE SOURCING PORTS	POE BUDGET
IE200-6GP	-	4	2	12.0Gbps	8.93Mpps	4	120W
IE200-6GT	-	4	2	12.0Gbps	8.93Mpps	-	-

Performance

RAM memory	256MB DDR SDRAM
ROM memory	64MB FLASH
MAC address	2K entries
Packet Buffer	256 KBytes (2 Mbits)
Priority Queues	4
Simultaneous VLANs	2K entries (1K entries recommended)
VLANs ID range	1 – 4094
Jumbo frames	9KB L2 jumbo frames
Multicast groups	512 entries

Other Interfaces

Type	Serial console (UART)
Port no.	1
Connector	RJ-45 female
Type	USB2.0 (Host Controller Class)
Port no.	1
Connector	Type A receptacle
Type	Alarm Input
Port no.	1
Connector	2-pin Terminal Block
Type	Alarm Output
Port no.	1
Connector	2-pin Terminal Block
Type	Power Input
Port no.	2
Connector	2-pin Terminal Block

Reliability

- Modular AlliedWare Plus™ operating system
- Redundant power input
- Full environmental monitoring of temperature and internal voltages. SNMP traps alert network managers in case of any failure
- Enhanced thermal shutdown

Flexibility and Compatibility

- Gigabit SFP ports supports any combination of Allied Telesis 10Mbps, 100Mbps and 1Gbps SFP modules, as listed in this document under Ordering Information

Diagnostic Tools

- Active Fiber Monitoring detects tampering on optical links
- Automatic link flap detection and port shutdown
- Built-In Self Test (BIST)
- Cable fault locator (TDR)
- Connectivity Fault Management (CFM)
- Continuity Check Protocol (CCP) for use with G.8032 ERPS
- Event logging via Syslog over IPv4
- Find-me device locator
- Optical Digital Diagnostic Monitoring (DDM)
- Ping polling and TraceRoute for IPv4 and IPv6
- UniDirectional Link Detection (UDLD)

IPv4 Features

- DHCP client

IPv6 Features

- DHCPv6 client
- IPv6 hardware ACLs
- Device management over IPv6 networks with SNMPv6, Telnetv6 and SSHv6
- IPv6 Ready certified

Management

- Front panel 3 LED provides at-a-glance PSU status and fault information
- Allied Telesis Autonomous Management Framework (AMF) node
- Console management port on the front panel for ease of access
- Eco-friendly mode allows ports and LEDs to be disabled to save power
- Web-based Graphical User Interface (GUI)
- Industry-standard CLI with context-sensitive help
- Powerful CLI scripting engine
- Built-in text editor
- Event-based triggers allow user-defined scripts to be executed upon selected system events
- SNMPv1/v2c/v3 support
- Comprehensive SNMP MIB support for standards based device management
- USB interface allows software release files, configurations and other files to be stored for backup and distribution to other devices
- Recessed Reset button

Quality of Service

- 4 priority queues with a hierarchy of high priority queues for real-time traffic, and mixed scheduling, for each switch port
- Limit bandwidth per port or per traffic class down to 64kbps
- Wirespeed traffic classification with low latency essential for VoIP and real-time streaming media applications
- Policy-based QoS based on VLAN, port, MAC and general packet classifiers
- Policy-based storm protection
- Extensive remarking capabilities
- Taildrop for queue congestion control
- Strict priority, weighted round robin or mixed scheduling
- IP precedence and DiffServ marking based on Layer 2, 3 and 4 headers

Resiliency Features

- Control Plane Prioritization (CPP) ensures the CPU always has sufficient bandwidth to process network control traffic
- Ethernet Protection Switched Rings (EPSRing™) with SuperLoop Protection (SLP)
- Ethernet Ring Protection Switching (ITU-T G.8032)
- Loop protection: loop detection
- Link Aggregation Control Protocol (LACP)
- Multiple Spanning Tree Protocol (MSTP)
- PVST+ compatibility mode
- Rapid Spanning Tree Protocol (RSTP)
- Spanning Tree Protocol (STP) with root guard

Multicasting

- Internet Group Membership Protocol (IGMPv1/v2/v3)
- IGMP snooping with fast leave and no timeout feature
- IGMP static groups
- Multicast Listener Discovery (MLDv1/v2)
- MLD snooping

Security Features

- Access Control Lists (ACLs) based on Layer 3 and 4 headers
- Configurable ACLs for management traffic
- ACL Groups enable multiple hosts/ports to be included in a single ACL, reducing configuration
- Authentication, Authorization and Accounting (AAA)
- Bootloader can be password protected for device security
- BPDU protection
- DHCP snooping, IP source guard and Dynamic ARP Inspection (DAI)
- Dynamic VLAN assignment
- Network Access and Control (NAC) features manage endpoint security
- Secure Copy (SCP)
- Strong password security and encryption
- TACACS+authentication and accounting
- Tri-authentication: MAC-based, web-based and IEEE 802.1X
- Auth-fail and guest VLANs

Environmental Specifications

Operating temp.	-40°C to 75°C (-40°F to 167°F)
Storage temp.	-40°C to 85°C (-40°F to 185°F)
Operating humidity	5% to 95% non-condensing
Storage humidity	5% to 95% non-condensing
Operating altitude	up to 3,000 m (9,843 ft)

Mechanical

EN 50022, EN 60715 Standardized mounting on rails

Environmental Compliance

RoHS
China RoHS
WEEE

Electrical/Mechanical Approvals

Compliance Mark	CE, FCC
Safety	EN/IEC/UL 60950-1 A2 EN/IEC/UL 60950-22 CAN/CSA-22.2 no. 60950-1 CAN/CSA-22.2 no. 60950-22
EMC	ICES-003 EN55024 EN55032 Class A EN61000-3-2 EN61000-3-3 EN61000-4-2 (ESD) EN61000-4-3 (RS) EN61000-4-4 (EFT) EN61000-4-5 (Surge) EN61000-4-6 (CS) EN61000-4-8 EN61000-4-11 FCC Part 15B, Class A VCCI, Class A
Shock	EN60068-2-27 EN60068-2-31
Vibration	EN60068-2-6
Traffic Control	NEMA TS2

Physical Specifications

PRODUCT	WIDTH	HEIGHT	DEPTH	WEIGHT	ENCLOSURE	MOUNTING	PROTECTION RATE
IE200-6GP	95 mm (3.74 in)	159 mm (6.25 in)	134 mm (5.28 in)	1.5 Kg (3.2 lb)	aluminum shell	DIN rail, wall mount	IP30
IE200-6GT	55 mm (2.17 in)	159 mm (6.25 in)	134 mm (5.28 in)	0.9 Kg (2.0 lb)	aluminum shell	DIN rail, wall mount	IP30

Power Characteristics

PRODUCT	INPUT VOLTAGE	COOLING	NO POE LOAD*			FULL POE LOAD			MAX POE POWER	MAX POE SOURCING PORTS		
			MAX POWER CONSUMPTION	MAX HEAT DISSIPATION	NOISE	MAX POWER CONSUMPTION	MAX HEAT DISSIPATION	NOISE		POE (15W)	POE+ (30W)	HI-POE (60W)
IE200-6GP	24~48V DC	fanless	35W	119 BTU/hr	-	155W	119 BTU/hr	-	120W	4	4	-
IE200-6GT	12~48V DC	fanless	32W	109 BTU/hr	-	-	-	-	-	-	-	-

* The Max Power consumption at full PoE load includes PD's consumption and margin. The cooling requirements of the switch are smaller than the power draw, because most of the load is dissipated at the PoE powered device (PD) and along the cabling.

Use these wattage and BTU ratings for facility capacity planning.

Standards and Protocols

AlliedWare Plus Operating System

Version 5.5.1-2

Authentication

RFC 1321 MD5 Message-Digest algorithm
RFC 1828 IP authentication using keyed MD5

Encryption (management traffic only)

FIPS 180-1 Secure Hash standard (SHA-1)
FIPS 186 Digital signature standard (RSA)
FIPS 46-3 Data Encryption Standard (DES and 3DES)

Ethernet Standards

IEEE 802.1AXLink aggregation (static and LACP)
IEEE 802.2 Logical Link Control (LLC)
IEEE 802.3 Ethernet
IEEE 802.3adStatic and dynamic link aggregation
IEEE 802.3af Power over Ethernet (PoE)
IEEE 802.3at Power over Ethernet plus (PoE+)
IEEE 802.3azEnergy Efficient Ethernet (EEE)
IEEE 802.3u 100BASE-X
IEEE 802.3x Flow control - full-duplex operation
IEEE 802.3z 1000BASE-X

IPv4 Features

RFC 768 User Datagram Protocol (UDP)
RFC 791 Internet Protocol (IP)
RFC 792 Internet Control Message Protocol (ICMP)
RFC 793 Transmission Control Protocol (TCP)
RFC 826 Address Resolution Protocol (ARP)
RFC 894 Standard for the transmission of IP datagrams over Ethernet networks
RFC 919 Broadcasting Internet datagrams
RFC 922 Broadcasting Internet datagrams in the presence of subnets
RFC 932 Subnetwork addressing scheme
RFC 950 Internet standard subnetting procedure
RFC 951 Bootstrap Protocol (BootP)
RFC 1035 DNS client
RFC 1042 Standard for the transmission of IP datagrams over IEEE 802 networks
RFC 1071 Computing the Internet checksum
RFC 1122 Internet host requirements
RFC 1191 Path MTU discovery
RFC 1518 An architecture for IP address allocation with CIDR
RFC 1519 Classless Inter-Domain Routing (CIDR)
RFC 1542 Clarifications and extensions for BootP
RFC 1591 Domain Name System (DNS)
RFC 1918 IP addressing
RFC 2581 TCP congestion control

IPv6 Features

RFC 1981 Path MTU discovery for IPv6
RFC 2460 IPv6 specification
RFC 2464 Transmission of IPv6 packets over Ethernet networks
RFC 3484 Default address selection for IPv6
RFC 4007 IPv6 scoped address architecture
RFC 4193 Unique local IPv6 unicast addresses
RFC 4291 IPv6 addressing architecture
RFC 4443 Internet Control Message Protocol (ICMPv6)
RFC 4861 Neighbor discovery for IPv6
RFC 4862 IPv6 Stateless Address Auto-Configuration (SLAAC)
RFC 5014 IPv6 socket API for source address selection
RFC 5095 Deprecation of type 0 routing headers in IPv6
RFC 5175 IPv6 Router Advertisement (RA) flags option
RFC 6105 IPv6 Router Advertisement (RA) guard

Management

AT Enterprise MIB including AMF MIB and traps
Optical DDM MIB
SNMPv1, v2c and v3
IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
RFC 1155 Structure and identification of management information for TCP/IP-based Internets
RFC 1157 Simple Network Management Protocol (SNMP)
RFC 1212 Concise MIB definitions
RFC 1213 MIB for network management of TCP/IP-based Internets: MIB-II
RFC 1215 Convention for defining traps for use with the SNMP
RFC 1227 SNMP MUX protocol and MIB
RFC 1239 Standard MIB
RFC 2578 Structure of Management Information v2 (SMIv2)
RFC 2579 Textual conventions for SMIv2
RFC 2580 Conformance statements for SMIv2

RFC 2674 Definitions of managed objects for bridges with traffic classes, multicast filtering and VLAN extensions
RFC 2741 Agent extensibility (AgentX) protocol
RFC 2787 Definitions of managed objects for VRRP
RFC 2819 RMON MIB (groups 1,2,3 and 9)
RFC 2863 Interfaces group MIB
RFC 3411 An architecture for describing SNMP management frameworks
RFC 3412 Message processing and dispatching for the SNMP
RFC 3413 SNMP applications
RFC 3414 User-based Security Model (USM) for SNMPv3
RFC 3415 View-based Access Control Model (VACM) for SNMP
RFC 3416 Version 2 of the protocol operations for the SNMP
RFC 3417 Transport mappings for the SNMP
RFC 3418 MIB for SNMP
RFC 3621 Power over Ethernet (PoE) MIB
RFC 3635 Definitions of managed objects for the Ethernet-like interface types
RFC 3636 IEEE 802.3 MAU MIB
RFC 4188 Definitions of managed objects for bridges
RFC 4022 MIB for the Transmission Control Protocol (TCP)
RFC 4113 MIB for the User Datagram Protocol (UDP)
RFC 4188 Definitions of managed objects for bridges
RFC 4292 IP forwarding table MIB
RFC 4293 MIB for the Internet Protocol (IP)
RFC 4318 Definitions of managed objects for bridges with RSTP
RFC 4560 Definitions of managed objects for remote ping, traceroute and lookup operations
RFC 5424 The Syslog protocol

Multicast Support

IGMP query solicitation
IGMP snooping (IGMPv1, v2 and v3)
IGMP snooping fast-leave
IGMP/MLD multicast forwarding (IGMP/MLD proxy)
MLD snooping (MLDv1 and v2)
RFC 2236 Internet Group Management Protocol v2 (IGMPv2)
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 3306 Unicast-prefix-based IPv6 multicast addresses
RFC 3376 IGMPv3
RFC 3810 Multicast Listener Discovery v2 (MLDv2) for IPv6
RFC 3956 Embedding the Rendezvous Point (RP) address in an IPv6 multicast address
RFC 4541 IGMP and MLD snooping switches
RFC 4604 Using IGMPv3 and MLDv2 for source-specific multicast
RFC 4607 Source-specific multicast for IP

Quality of Service (QoS)

IEEE 802.1p Priority tagging
RFC 2211 Specification of the controlled-load network element service
RFC 2474 DiffServ precedence for eight queues/port
RFC 2475 DiffServ architecture
RFC 2597 DiffServ Assured Forwarding (AF)
RFC 2697 A single-rate three-color marker
RFC 2698 A two-rate three-color marker
RFC 3246 DiffServ Expedited Forwarding (EF)

Resiliency Features

ITU-T G.8023 / Y.1344 Ethernet Ring Protection Switching (ERPS)
IEEE 802.1ag CFM Continuity Check Protocol (CCP)
IEEE 802.1AX Link aggregation (static and LACP)
IEEE 802.1D MAC bridges
IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
IEEE 802.3ad Static and dynamic link aggregation

Security Features

SSH remote login
SSLv2 and SSLv3
TACACS+ Accounting and Authentication
IEEE 802.1X Authentication protocols (TLS, TTLS, PEAP, MD5)
IEEE 802.1X Multi-supplicant authentication
IEEE 802.1X Port-based network access control
RFC 2818 HTTP over TLS ("HTTPS")
RFC 2865 RADIUS authentication
RFC 2866 RADIUS accounting
RFC 2868 RADIUS attributes for tunnel protocol support
RFC 2986 PKCS #10: certification request syntax specification v1.7
RFC 3579 RADIUS support for Extensible Authentication Protocol (EAP)
RFC 3580 IEEE 802.1x RADIUS usage guidelines
RFC 3748 PPP Extensible Authentication Protocol (EAP)
RFC 4251 Secure Shell (SSHv2) protocol architecture
RFC 4252 Secure Shell (SSHv2) authentication protocol
RFC 4253 Secure Shell (SSHv2) transport layer protocol
RFC 4254 Secure Shell (SSHv2) connection protocol
RFC 5176 RADIUS CoA (Change of Authorization)
RFC 5246 Transport Layer Security (TLS) v1.2
RFC 5280 X.509 certificate and Certificate Revocation List (CRL) profile
RFC 5425 Transport Layer Security (TLS) transport mapping for Syslog
RFC 5656 Elliptic curve algorithm integration for SSH
RFC 6125 Domain-based application service identity within PKI using X.509 certificates with TLS
RFC 6614 Transport Layer Security (TLS) encryption for RADIUS
RFC 6668 SHA-2 data integrity verification for SSH

Services

RFC 854 Telnet protocol specification
RFC 855 Telnet option specifications
RFC 857 Telnet echo option
RFC 858 Telnet suppress go ahead option
RFC 1091 Telnet terminal-type option
RFC 1350 The TFTP protocol (revision 2)
RFC 1985 SMTP service extension
RFC 2049 MIME
RFC 2131 DHCPv4 (client)
RFC 2132 DHCP options and BootP vendor extensions
RFC 2616 Hypertext Transfer Protocol - HTTP/1.1
RFC 2821 Simple Mail Transfer Protocol (SMTP)
RFC 2822 Internet message format
RFC 3046 DHCP relay agent information option (DHCP option 82)
RFC 3315 Dynamic Host Configuration Protocol for IPv6 (DHCPv6 client)
RFC 3396 Encoding Long Options in the Dynamic Host Configuration Protocol (DHCPv4)
RFC 3633 IPv6 prefix options for DHCPv6
RFC 3646 DNS configuration options for DHCPv6
RFC 4954 SMTP Service Extension for Authentication
RFC 5905 Network Time Protocol (NTP) version 4

VLAN Support

Generic VLAN Registration Protocol (GVRP)
IEEE 802.1Q Virtual LAN (VLAN) bridges
IEEE 802.1v VLAN classification by protocol and port
IEEE 802.3ac VLAN tagging

Voice over IP (VoIP)

Voice VLAN
ANSI/TIA-1057 Link Layer Discovery Protocol-Media Endpoint Discovery (LLDP-MED)

Ordering Information

NAME	DESCRIPTION	INCLUDES
AT-FL-IE2-L2-01	IE200 series Layer 2 Premium license*	▶ VLAN double tagging (QinQ) ▶ UDLD
AT-FL-IE2-G8032	IE200 series license for ITU-T G.8032 and Ethernet CFM	▶ ITU-T G.8032 ▶ Ethernet CFM

* EPSR Master feature is available by default in IE200 Series

Switches

The DIN rail and wall mount kits are included.

AT-IE200-6GP-80
4x 10/100/1000T, 2x 100/1000X SFP,
Industrial Ethernet, Layer 2 Switch, PoE+ Support

AT-IE200-6GT-80
4x 10/100/1000T, 2x 100/1000X SFP,
Industrial Ethernet, Layer 2 Switch

Power Supplies

AT-DRB50-48-1
50W @48Vdc, Industrial AC/DC power supply,
DIN rail mount

AT-IE048-240-20
240W @48Vdc, Industrial AC/DC power supply,
DIN rail mount (5 years warranty)

AT-SDR240-48
240W @48Vdc, Industrial AC/DC power supply,
DIN rail mount

Supported SFP Modules

Refer to the installation guide for the recommended Max. Operating Temperature according to the selected SFP module.

1000Mbps SFP Modules

AT-SPBD10-13
10 km, 1G BiDi SFP, LC, SMF
(1310 Tx/1490 Rx)

AT-SPBD10-14
10 km, 1G BiDi SFP, LC, SMF
(1490 Tx/1310 Rx)

AT-SPBD20-13/I
20 km, 1G BiDi SFP, SC, SMF, I-Temp
(1310 Tx/1490 Rx)

AT-SPBD20-14/I
20 km, 1G BiDi SFP, SC, SMF, I-Temp
(1490 Tx/1310 Rx)

AT-SPBD20LC/I-13
20 km, 1G BiDi SFP, LC, SMF, I-Temp
(1310 Tx/1490 Rx)

AT-SPBD20LC/I-14
20 km, 1G BiDi SFP, LC, SMF, I-Temp,
(1490 Tx/1310 Rx)

AT-SPBD40-13/I
40 km, 1G BiDi SFP, LC, SMF, I-Temp,
(1310 Tx/1490 Rx)

AT-SPBD40-14/I
40 km, 1G BiDi SFP, LC, SMF, I-Temp,
(1490 Tx/ 1310 Rx)

AT-SPEX
2 km, 1000EX SFP, LC, MMF, 1310 nm

AT-SPEX/E
2 km, 1000EX SFP, LC, MMF, 1310 nm, Ext. Temp

AT-SPEX/E-90
2 km, 1000EX SFP, LC, MMF, 1310 nm, Ext. Temp, TAA

AT-SPLX10a
10 km, 1000LX SFP, LC, SMF, 1310 nm

AT-SPLX10/I
10 km, 1000LX SFP, LC, SMF, 1310 nm, I-Temp

AT-SPLX10/E
10 km, 1000LX SFP, LC, SMF, 1310 nm, Ext. Temp

AT-SPLX40
40 km, 1000LX SFP, LC, SMF, 1310 nm

AT-SPLX40/E
40 km, 1000LX SFP, LC, SMF, 1310 nm, Ext. Temp

AT-SPSX
550 m, 1000SX SFP, LC, MMF, 850 nm

AT-SPSX-90
550 m, 1000SX SFP, LC, MMF, 850 nm, TAA

AT-SPSX/I
550 m, 1000SX SFP, LC, MMF, 850 nm, I-Temp

AT-SPSX/E
550 m, 1000SX SFP, LC, MMF, 850 nm, Ext. Temp

AT-SPTX[1]
100 m, 10/100/1000T SFP, RJ-45

AT-SPTX/I
100 m, 10/100/1000T SFP, RJ-45, I-Temp

100Mbps SFP Modules

AT-SPFX/2
2 km, 100FX SFP, LC, MMF, 1310 nm

AT-SPFX/2-90
2 km, 100FX SFP, LC, MMF, 1310 nm, TAA

AT-SPFX30/I
30 km, 100FX SFP, LC, SMF, 1310 nm, I-Temp

[1] IE200 Series supports this SFP module at 1Gbps only.

617-000474 RevZE