

Highlights

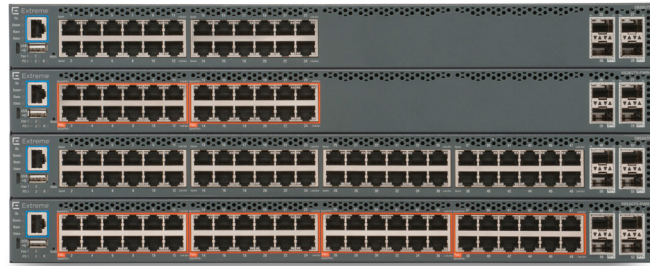
- High-end Wiring Closet Switches
- Agile support for Extreme Fabric Connect
- Advanced IPv4 and IPv6 Routing
- Non-blocking, wire-speed switching performance
- High-capacity Stackable Chassis architecture
- 24, 48, or 96 ports of Gigabit Ethernet for access connectivity
- Support for 2.5 Gigabit Ethernet high-speed access connectivity
- 4 ports of 10 Gigabit Ethernet for network uplink connectivity
- Optional support for full-power PoE/PoE+, and Four-Pair PoE
- Field-replaceable AC Power and Cooling, with flexible airflow
- MACsec support

Benefits

- Innovative, versatile, highly scalable adds capacity and performance
- Advanced capabilities ease deployments
- High-performance, pay-as-you-grow Stacking
- Convergence-ready for advanced communications
- Autonomic Edge dramatically reduces the cost of change
- Hands-free service automation

Features and Capabilities

- Non-blocking, wire-speed
- Integrated design
- Feature-rich
- Extreme Stackable Chassis
- Extreme Fabric Connect
- Fabric Attach
- Advanced IPv4 and IPv6 Routing
- Field-replaceable Power and Fans
- Front-to-Back and Back-to-Front airflow options



Ethernet Routing Switch 5900

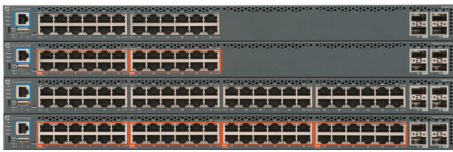
Next-generation, high-performance, feature-rich Ethernet Switch platforms specifically optimized for the Wiring Closet demands of the high-performance Enterprise. Extreme Ethernet Routing Switch 5900 products deliver the agility to perform equally in conventional IP and Ethernet Fabric-based networking solutions.

The Ethernet Routing Switch 5900 products leverage the latest advances in network switching architecture design to maximize hardware performance and software capability. These products represent a clear evolutionary step for the Ethernet Routing Switch 5000 Series, particularly in terms of value and future-ready flexibility.

The primary purpose of a network is to interconnect users with their applications, and the best networks do this reliably, efficiently, and with a high degree of agility. Extreme's Fabric-based architecture empowers companies to extend the virtualized Ethernet Fabric beyond the Data Center, to the very edge of the network, delivering powerful integration of users, applications, and devices.

The Ethernet Routing Switch 5900 (ERS 5900) products are an important part of this strategy integrating Fabric Connect capabilities into a form-factor that is cost-effective, flexible, and reliable. The ERS 5900 products can be deployed standalone, or configured as a Stackable Chassis system of up to eight units/416 ports, supported by up to 672Gbps of virtual backplane bandwidth.

Supporting modern Enterprise applications requires a flexible and highly reliable infrastructure, and the ERS 5900 products deliver against this challenge. These are highly strategic products, fit-for-purpose for conventional Routed IP connectivity requirements and future-ready for the evolving and emerging software-defined needs of tomorrow. Boasting equal competency for both IP and Fabric-based networking give businesses the flexibility to satisfy all common deployment scenarios, with the added advantage of an easy transitioning between the two.



ERS 5900 Stackable Chassis



Rear View
(highlighting Stackable
Chassis cabling)



ERS 5928GTS



ERS 5928GTS-PWR+



ERS 5928GTS-uPWR



ERS 5928MTS-uPWR



ERS 5952GTS



ERS 5952GTS-PWR+



ERS 59100GTS



ERS 59100GTS-PWR+

Extreme brings unique differentiation to the high-end Wiring Closet role: with a flexible, non-blocking “Stackable Chassis” architecture. The proprietary Extreme “Flexible Advanced Stacking Technology” (FAST) protocol – implemented over dedicated Quality-of-Service aware interfaces – enables a resilient, high-performance solution that leverages a shortest path algorithm to minimize transit hops in a multi-device configuration by providing active-active bi-directional traffic flows. The Extreme Stackable Chassis technology can offer the same performance, resiliency, and ease of serviceability attributes of a traditional Chassis solution, but at a lower, pay-as-you-grow price point. Notable is the ability to swap-out an individual failed unit without the requirement to pre-or post-stage operating system software or configuration; providing equivalency to module replacement for a modular Chassis system.

The ERS 5900 products are purpose-built to support the demands of today’s dynamic Wiring Closet with high-density, full-featured Gigabit Ethernet. It alleviates infrastructure complexity and reduces operational burden with a truly scalable and strategic architecture; it is designed to deliver a high-performance Enabled Edge solution that fully optimizes investments in next-generation application software.

Leveraging both next-generation hardware and software technology provides a solution that is ready to support both today’s requirements and tomorrow’s emerging needs. The ERS 5900 products enable organizations to future-proof with a highly software-definable network virtualization solution.

Product Overview

Broadly speaking, the Ethernet Routing Switch 5900 products provide a mix of Gigabit Ethernet ports for edge access and multiple 10 Gigabit Ethernet ports for network uplinks. Model variants that support Power-over-Ethernet are also available, and all models support optional highly available AC power (up to two field-replaceable Power Supplies, or up to four for the 59100 models) and cooling (two field-replaceable Fan modules, or four for the 59100 models).

Three different port configurations are available: 28-port, 52-port, and 100-port models, and each of the configurations is available in either a PoE or non-PoE format. Additionally, there are 28-port versions that support the new Four-Pair (Universal) PoE capability. The product range includes the following models:

- ERS 5928GTS – 24 x 10/100/1000 Mbps RJ45, plus 4 x 10 Gigabit SFP+
- ERS 5928GTS-PWR+ – 24 x 10/100/1000 Mbps RJ45 with PoE/PoE+, plus 4 x 10 Gigabit SFP+
- ERS 5928GTS-uPWR – 24 x 10/100/1000 Mbps RJ45 with Universal PoE, plus 4 x 10 Gigabit SFP+
- ERS 5928MTS-uPWR 24 x 10/100/1000 Mbps/2.5 Gbps RJ45 with Universal PoE, plus 4 x 10 Gigabit SFP+¹
- ERS 5952GTS – 48 x 10/100/1000 Mbps RJ45, plus 4 x 10 Gigabit SFP+
- ERS 5952GTS-PWR+ – 48 x 10/100/1000 Mbps RJ45 with PoE/PoE+, plus 4 x 10 Gigabit SFP+
- ERS 59100GTS – 96 x 10/100/1000 Mbps RJ45, plus 4 x 10 Gigabit SFP+
- ERS 59100GTS-PWR+ – 96 x 10/100/1000 Mbps RJ45 with PoE/PoE+, plus 4 x 10 Gigabit SFP+

¹The 5928MTS-uPWR model supports only Full-Duplex mode on access ports.

The product's proven design leverages a sophisticated chipset from the Industry's leading supplier, featuring high-performance switching and frame forwarding. The switching core is designed to deliver wire-speed capabilities, with a fully integrated ASIC architecture that facilitates hardware-assisted feature execution.

The 28-port models – ERS 5928GTS, ERS 5928GTS-PWR+, and ERS 5928GTS-uPWR – feature 24 1000BASE-T Gigabit Ethernet access ports with RJ45 interfaces; these ports also support 10/100Mbps connectivity. Four SFP+ interfaces provide for network uplink connectivity, and these ports support both Gigabit and 10 Gigabit pluggable transceivers. The new ERS 5928MTS-uPWR model features 24 1000BASE-T Gigabit/2.5 Gigabit Ethernet access ports with RJ45 interfaces; these ports also support 100Mbps connectivity. As with all other ERS 5900 model, four SFP+ interfaces provide for network uplink connectivity, and these ports support both Gigabit and 10 Gigabit pluggable transceivers.

The 52-port models – ERS 5952GTS and ERS 5952GTS-PWR+ – feature 48 1000BASE-T Gigabit Ethernet access ports with RJ45 interfaces; these ports also support 10/100Mbps connectivity. Four SFP+ interfaces provide for network uplink connectivity, and these ports support both Gigabit and 10 Gigabit pluggable transceivers.

The 100-port models – ERS 59100GTS and ERS 59100GTS-PWR+ – feature 96 1000BASE-T Gigabit Ethernet access ports with RJ45 interfaces; these ports also support 10/100Mbps connectivity. Four SFP+ interfaces provide for network uplink connectivity, and these ports support both Gigabit and 10 Gigabit pluggable transceivers.

Importantly, all ERS 5900 models feature two dedicated Stackable Chassis interfaces on the rear; one a bi-directional uplink and the other a bi-directional downlink. These QoS-aware high-speed connections enable a resilient, high-performance hardware virtualization solution, leveraging a shortest path algorithm to minimize transit hops in a multi-device configuration and supporting active-active bi-directional traffic flows.

The Power-over-Ethernet models – ERS 5928-PWR+, ERS 5952GTS-PWR+, and ERS 59100GTS-PWR+ support full Standards-compliant IEEE 802.3af/802.3at PoE/PoE+ delivering up to 30W per port to power IP Phones, Wireless Access Points, networked IP CCTV Cameras, and other converged devices².

The ERS 5928GTS-uPWR and 5928MTS-uPWR models support the Four-Pair PoE initiative (a.k.a. Universal PoE), enabling up to 60 Watts of power on access ports. This capability can be used to support a greater range of high-power devices through a single standard Ethernet cable,

such as premium telepresence systems, multi-radio Wireless Access Points, VDI Thin Clients and monitors, trading turrets used in the financial vertical, downstream compact Switches, and even PoE-power smart lighting systems. Four-Pair PoE is seen as a key enabling technology for the Internet of Things. These models also support conventional 802.3af/802.3at PoE/PoE+.

These PoE models utilize field-replaceable, hot-swappable power supplies that can each deliver up to 1,400W (or 1,000W when connected to 110VAC), while the non-PoE models utilize a version that is rated at 450W. A portion of power is reserved for system operation: 200W for the 28 and 52-port models, and 400W for the 96-port model.

PoE power budgets are as follows:

- ERS 5928GTS-PWR+ – 720W of PoE power with either 1 or 2 PSUs installed
- ERS 5928GTS-uPWR+, 5928MTS-uPWR, and 5952GTS-PWR+ – 1,440W of PoE power with 2 PSUs installed, and up to 1,200W with a single PSU
- ERS 59100GTS-uPWR+ – 2,880W of PoE power with 4 PSUs installed, up to 2,880W with 3 PSUs, up to 2,580W with 2 PSUs, and up to 1,200W with a single PSU

Benefits

The ERS 5900 products add significant flexibility to an Enterprise's networking capability. Deployed with other Extreme or third-party Ethernet Switch devices, the ERS 5900 products provide high-capacity, high-performance connectivity solution for high-end Wiring Closet applications.

The ERS 5900 products deliver key Enterprise-class benefits, including:

- **Always-On** – Stackable Chassis delivers a best-in-class high-availability solution, featuring hot-swappable unit replacement and integrated power and cooling redundancy.
- **Convergence-Ready** – flexible support for PoE/PoE+, Universal PoE optimized for high-definition video surveillance, true plug-and-play capabilities for communications, collaboration, and engagement deployments, and advanced QoS capabilities.
- **Powerful** – wire-speed performance, truly scalable virtual backplane capabilities, delivering up to 672Gbps of throughput to support large-scale deployments.
- **Highly Secure** – Standards-based 802.1X Network Access Control can also be integrated with Extreme Management Center for centralized, policy-based authenticated network access. The ERS 5900 now also supports MACsec for link layer encryption on both Access and Uplink ports.

²PoE+ Switch ports deliver up to 32.4 watts, with the "extra" 2.4W provided to compensate for potential line loss, and ensuring that a full 30W is available to the Powered Device.

- **Flexibility and Agility** – best-in-class pay-as-you-grow scalability, versatile PoE/PoE+/Universal PoE support, multiple 1/10 Gigabit network uplinks and flexible airflow.
- **Fabric-Enabled** – supporting Extreme’s Fabric Connect technologies to empower a seamless transition to an agile, software-defined virtualized networking solution.
- **Energy Efficient** – focusing on end-to-end energy efficiency, dynamic Energy Saver further reduces power consumption for both the Ethernet Switch and IP Phones without impacting service availability.

System Compatibility

From an operating system software perspective, the ERS 5900 products were introduced via the 7.0 release; therefore, this is the minimum level of system software required to operate the Switches³. As of the 7.1 release, both the ERS 5900 and ERS 4900 Series products are supported by the same BOSS software image. This delivers harmonized feature availability – where applicable – across both the mainstream and premium product lines.

The recent BOSS 7.5 release delivers the following enhancements:

- Integration into Extreme Management Center
- Support for MACsec on both Access and Uplink ports
- Adding Egress Filters for IPv4/IPv6, and Ingress Filters for IPv6
- Support for NTPv4

Product Details

Features and Capabilities

- Non-blocking, wire-speed switching architecture.
- Integrated design that is optimized for low latency and high Quality-of-Service (including QoS-aware Stackable Chassis interfaces).
- Feature-rich support for conventional VLAN, Private VLAN, Multi-Link Trunking, Spanning Tree technologies.
- Extreme Stackable Chassis technology supporting scalability up to 8 units/416 ports, and Auto-Unit Replacement for Software Image and Configuration.
- Extreme Fabric Connect technology supports L2 Virtual Service Networks (VSNs), IP Shortcut Routing, IP Multicast-over-Fabric Connect, ETREE, and Fabric Attach.
- IP Routing includes support for Static, RIP/RIPng, OSPF, ECMP, VRRP, Routing Polices and Source-based Routing, and PIM-SM/PIM-SSM.

High Availability Power and Cooling

- High-availability field-replaceable, hot-swappable AC internal Power Supplies, available in 450W and 1,400 (1,000W for 100-120V) ratings for – respectively – non-PoE and PoE applications.
- High-availability field-replaceable Fan Trays available in Front-to-Back or Back-to-Front airflow configuration to match PSUs.

Warranty

- Lifetime Hardware Warranty, providing Next Business Day shipment of replacement hardware.
- Lifetime Software Warranty, providing access to Updates and Upgrades.
- Lifetime Basic Technical Support
- 90-Day Post-Purchase Advanced Technical Support

Software Licensing

- Base Software License: included with hardware purchase, enables most features with the exception of those specifically noted and enabled by the Advanced Software License.
- Base Software + MACsec License: enables MACsec to be enabled on Access and Uplink ports, in addition to enabling Base features. This license is used to police the availability of MACsec and comply with jurisdictional requirements.
- Advanced Software License: an optional accessory, enables the following features: OSPF, VRRP, ECMP, PIM-SM/PIM-SSM, IPv6 Routing, (IP Static Routing, RIPng) and IP Shortcut Routing.
- Advanced Software + MACsec License: an optional accessory, enables the following features: OSPF, VRRP, ECMP, PIM-SM/PIM-SSM, IPv6 Routing, (IP Static Routing, RIPng) and IP Shortcut Routing. Enables MACsec to be enabled on Access and Uplink ports.

Country of Origin

China (PRC) for all models with the exception of the 5928MTS-uPWR which is sourced from Taiwan (ROC).

Additional Information

For further information about Extreme Ethernet Switches, and the complete Extreme Networking portfolio, please visit www.extremenetworks.com.

³ The ERS 5928MTS-uPWR model requires a minimum of BOSS 7.4 to operate, and the ERS 59100 models require a minimum of BOSS 7.3.

Selected Specifications

General

- Physical Connectivity
 - 1000BASE-T Access Ports (supporting both Half and Full-Duplex)⁴
 - 10GBASE-SFP+ Network Uplink Ports
- Switching Fabric (Full-Duplex)
 - 212Gbps for 28-port models (except 5928MTS-uPWR)
 - 284Gbps for 5928MTS-uPWR model
 - 260Gbps for 52-port models
 - 356Gbps for 100-port models
- Frame Forwarding (Full Duplex)
 - 190.5Mpps for 28-port models (except 5928MTS-uPWR)
 - 298Mpps for 5928MTS-uPWR model
 - 262Mpps for 52-port models
 - 405Mpps for 100-port models
- Nominal Latency: 3.5 microseconds for 64 Byte packets
- Nominal Jitter: 0.84 microseconds for 64 Byte packets
- Frame Length: 64 to 1518 Bytes (Untagged), 64 to 1522 Bytes (Tagged)
- Jumbo Frame: up to 9,216 Bytes (802.1Q Tagged)
- Stackable Chassis Throughput: 84Gbps (Full-Duplex) per Switch, up to 672Gbps

Layer 2

- MAC Address: up to 32,000
- Port-based VLANs: 1,024
- MSTP Instances: 8
- MLT/LACP Groups: 32
- Links per MLT/LACP Group: 8
- DHCP Snooping Entries: up to 1,024
- 802.1X Clients: up to 768
- LLDP Neighbors: up to 800
- Extreme SLPP Instances: 128

Layer 3 IPv4 Routing Services

- ARP Entries: 4,096
- Static ARP Entries: 256
- IP Interfaces: 256
- CLIP Interfaces: 16
- IP Routes: to up 4,096
- IP Static Routes: 512
- RIP Interfaces: up to 64
- RIP Routes: up to 4,096
- OSPF Interfaces: up to 64
- OSPF Routes: up to 4,096
- OSPF Areas: 4
- ECMP Groups: 256
- Paths per ECMP Group: 4
- VRRP Interfaces: 64
- IP Route Policies: 128

Layer 3 IPv6 Routing Services

- IPv6 Interfaces: 256
- IPv6 Routes: up to 2,048
- IPv6 Static Neighbors: 256
- CLIP Interfaces: 16

- IPv6 Management Tunnels: 4
- IPv6 Data Tunnels: 8
- IPv4/IPv6 Dual Stack
- Router Advertisement Guard
- DHCPv6 Guard
- MLDv1/v2 Snooping
- Duplicate Address Detection and Snooping
- Neighbor Unreachability Detection and Filtering

Multicast

- IGMP Enabled VLANs: 256
- PIM Passive Interface: 60
- IP Multicast Groups: 1,024
- PIM Active Interfaces: 4
- PIM-SSM Static Channels: 512

Fabric Connect

- IEEE 802.1aq/RFC 6329 Shortest Path Bridging with custom extensions
- MAC Addresses: 32,000
- IS-IS Adjacencies: 4
- Fabric Attach modes: Server, Proxy, and Standalone Proxy
- BCB/BEB Nodes per Region: 1,000
- BEB Nodes per VSN: up to 750 (soft ceiling)
- L2 Virtual Service Networks: 1,000
- IP Shortcut Routes: 2,000

QoS and Filtering

- Priority Queues: 8
- Ingress and Egress ACLs: up to 256 per Precedence, up to 16 Precedence instances
- ACL Filters: up to 4,096

Operations and Management

- Port and VLAN-based Mirroring IPFIX Sampled Flows: up to 100,000 Enterprise Device Manager GUI, on-box
- Mirroring Instances: 4 sFlow Flow Sampling and off-box
- Auto-MDIX Detection⁴
- Time-Domain Reflectometry⁴
- SSHv2 with AES128

Support Transceivers⁵

- 10GBASE-T SFP+, up to 100m over
- CAT6a UTP
- 10GBASE-LRM SFP+, up to 220m
- over FDDI-grade MMF
- 10GBASE-SR/SW SFP+, up to 300m
- over MMF
- 10GBASE-LR/LW SFP+, up to 10km over SMF
- 10GBASE-BX10 SFP+, up to 10km over SMF
- 10GBASE-ER/EW SFP+, up to 40km over SMF
- 10GBASE-ZR/ZW SFP+, up to 80km over SMF
- 10GBASE-CX Direct-Attach Cable, up to 3m over Twinax
- 10GBASE-CX Direct-Attach Cable, up to 5m over Twinax
- 10GBASE-CX Direct Direct-Attach Cable, up to 10m over Twinax

Physical Specifications

(Weights include Base Unit with single Power Supply)

Model	Height	Width	Depth	Weight
1 RU Models	44 mm	442 mm	488 mm	7.6-8.6 kg
2 RU Models	88.5 mm	442 mm	488 mm	11.9-12.9 kg

⁴ The ERS 5928MTS-uPWR model supports 100Mbps/1000Mbps/2.5Gbps and Full-Duplex operation on access ports; 10Mbps and/or Half-Duplex are not supported. Additionally, the ERS 5928MTS-uPWR does not support TDR.

⁵ A mix of both conventional and DDI Transceivers are supported. Additionally, SFP+ sockets are also capable of supporting a wide range of 1 Gigabit Ethernet Transceivers. Please refer to the product documentation for full details and a complete listing of all specifications and compliance.

Power Specifications

(Base Unit fully Equipped with Power Supplies)

ERS 5928GTS

- Up to 77.2W, up to 0.43A, and up to 263.4BTU/hr @ 200-240VAC
- Up to 77.4W, up to 0.7A, and up to 264.0BTU/hr @ 100-110VAC
- 52.2W power consumption at idle, and 56.7W under typical traffic load

ERS 5928GTS-PWR+

- Up to 846.0W, up to 3.77A, and up to 429.9BTU/hr @ 200-240VAC
- Up to 858.0W, up to 7.52A, and up to 467.4BTU/hr @ 100-110VAC
- 47.8W power consumption at idle, and 52.0W under typical traffic load (excluding PoE draw)

ERS 5928GTS-uPWR

- Up to 1,616.0W, up to 7.1A, and up to 588.0BTU/hr @ 200-240VAC
- Up to 1,662.0W, up to 14.5A, and up to 744.0BTU/hr @ 100-110VAC
- 46.0W power consumption at idle, and 50.7W under typical traffic load (excluding PoE draw)

ERS 5928MTS-uPWR

- Up to 1,693.3W, up to 8.0A, and up to 872.4BTU/hr @200-240VAC
- Up to 1,810.2W up to 15.8A, and up to 1,237.5BTU/hr @100-110VAC
- 114.49W power consumption at idle, and 119.0W under typical traffic load (excluding PoE draw)

ERS 5952GTS

- Up to 88.6W, up to 0.46A, and up to 302.3BTU/hr @ 200-240VAC
- Up to 90.0W, up to 0.78A, and up to 307.1BTU/hr @ 100-110VAC
- 60.4W power consumption at idle, and 69.0W under typical traffic load

ERS 5952GTS-PWR+

- Up to 1,662.0W, up to 7.12A, and up to 600.5BTU/hr @ 200-240VAC
- Up to 1,665.0W, up to 14.58A, and up to 754.1BTU/hr @ 100-110VAC
- 56.5W power consumption at idle, and 65.6W under typical traffic load (excluding PoE draw)

ERS 5910GTS

- Up to 182.6W, up to 1.0A, and up to 623.1BTU/hr @200-240VAC
- Up to 183.9W, up to 1.6A, and up to 627.5BTU/hr @100-110VAC
- 92.0W power consumption at idle, and 111.0W under typical traffic load

ERS 5910GTS-PWR+

- Up to 3,218.9W, up to 14.1A, and up to 1,099.0BTU/hr @200-240VAC
- Up to 3,327.2W, up to 29.0A, and up to 1,473.9BTU/hr @100-110VAC
- 97.1W power consumption at idle, and 117.7W under typical traffic load (excluding PoE draw)Storage Humidity:

Environmental Specifications

Operating Temperature	0°C to 50°C (32°F to 122°F); the 5928MTS-uPWR model supports 0°C to 45°C in Back-to-Front airflow configuration
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Operating Humidity	0 to 95% maximum relative humidity, non-condensing; 0 to 85% for the 5928MTS-uPWR
Storage Humidity	10 to 90% maximum relative humidity, non-condensing; 10 to 85% for the 5928MTS-uPWR
Operating Altitude	0 to 3,048m (0 to 10,000ft) maximum Storage altitude: 0 to 12,192m (0 to 40,000ft) maximum
Acoustic Noise	<ul style="list-style-type: none"> • Less than 52dbA at 25°C • Less than 60dbA at 50°C

Safety Agency Approvals

- IEC 60950 International CB Certification
- EN 60950-1 Europe Safety (CE): CB Scheme Certification with Member Deviations
- UL 60950-1 USA Safety
- CSA-C22.2, #60950-1 Canada Safety
- NOM Mexico Safety
- EN 60950-1 Japan Safety
- Anatel Brazilian Safety
- ACMA-RCM Australia Safety
- Customs Union/EAC Safety of Low-Voltage Equipment Certification
- CCC and MIIT China Safety
- CNS 14336-1 Taiwan BSMI Safety
- UL 1069 Hospital Signaling and Nurse Call Equipment (relevant to PWR units only)

- EN 55022 Class A, CISPR 22 European EMC Emissions (CE)
- EN 55024, CISPR 24 including EN 61000-4-2, 4-3, 4-4, 4-5, 4-6, 4-8 and 4-11 European EMC Immunity (CE)
- ACMA-RCM Mark
- Australia EMC Emissions
- Anatel Brazilian EMC Certification
- Customs Union/EAC EMC Certification
- CCC and MIIT China EMC Certification
- KC mark: EMI and EMS Korean EMC Certification
- CNS 13438 Taiwan BSMI EMC

MTBF Values

(Base Unit with Single Power Supply)

- ERS 5928GTS - up to 248,756 hours (28.40 years)
- ERS 5928GTS-PWR+ - up to 246,741 hours (28.12 years)
- ERS 5928GTS-uPWR - up to 254,165 (29.01 years)
- ERS 5928MTS-uPWR up to 243,895 (27.84 years)
- ERS 5952GTS - up to 241,078 hours (27.52 years)
- ERS 5952GTS-PWR+ - up to 239,731 hours (27.37 years)
- ERS 5910GTS up to 150,386 hours (17.67 years)
- ERS 5910GTS-PWR+ up to 145,094 hours (16.56 years)

Electromagnetic Emissions and Immunity

- CISPR 22 International EMC Emissions
- CIRPR 24 International EMC Immunity
- FCC part 15B, Class A USA EMC Emissions
- ICES-003 Class A Canadian EMC Emissions
- VCCI Japan EMC Emissions

Ordering Information - ERS 5900 Switching Hardware

Part Number	Description
AL5900A1*-E6	ERS 5928GTS 28-port Ethernet Switch, supporting 24 x 1000BASE-T and 4 x 10GBASE-SFP+ ports. Includes single 450W AC Power Supply, Fan Trays, and Base Software License.
AL5900A3*-E6	ERS 5952GTS 52-port Ethernet Switch, supporting 48 x 1000BASE-T and 4 x 10GBASE-SFP+ ports. Includes single 450W AC Power Supply, Fan Trays, and Base Software License.
AL5900A4*-E6	ERS 5952GTS-PWR+ 52-port Ethernet Switch, supporting 48 x 1000BASE-T PoE/PoE+ and 4 x 10GBASE-SFP+ ports. Includes single 1,400W AC Power Supply, Fan Trays, and Base Software License.
AL5900A5*-E6	ERS 59100GTS 100-port Ethernet Switch, supporting 96 x 1000BASE-T and 4 x 10GBASE-SFP+ ports. Includes single 450W AC Power Supply, Fan Trays, and Base Software License.
AL5900A6*-E6	ERS 59100GTS-PWR+ 100-port Ethernet Switch, supporting 96 x 1000BASE-T PoE/PoE+ and 4 x 10GBASE-SFP+ ports. Includes single 1,400W AC Power Supply, Fan Trays, and Base Software License.
AL5900A7*-E6	ERS 5928GTS-uPWR 28-port Ethernet Switch, supporting 24 x 1000BASE-T Universal PoE ports and 4 x 10GBASE-SFP+ ports. Includes single 1,400W AC Power Supply, Fan Trays, and Base Software License.
AL5900A9*-E6GS ⁶	ERS 5928MTS-uPWR 28-port Ethernet Switch, supporting 24 x 1000BASE-T/2.5GBASE-T Universal PoE ports and 4 x 10GBASE-SFP+ ports. Includes single 1,400W AC Power Supply, Fan Trays, and Base Software License.

Notes: Power cord is not included and must be ordered separately for switches and power supplies. For a list of available power cords, please refer to "Lifecycle Notification on ERS Power Cord Models" at: <http://bit.ly/2Gz2csk>.

TAA-compliant models are also available worldwide for all ERS 5900 models. To order, add "GS" to the end of the part number when placing your order.

Due to supply chain constraints, the following ERS 5900 models come with a North American (NA) power cord: AL5900E1B-E6GS, AL5900E1F-E6GS, AL5900E3B-E6GS, AL5900E3F-E6GS, AL5900E4B-E6GS, AL5900E4F-E6GS, AL5900E4F-E6. Power cords for regions other than NA must be ordered separately.

⁶The 5928MTS-uPWR is offered only in TAA-compliant "GS" format.

Ordering Information - ERS 5900 Accessories

Part Number	Description
AL7000A0B-E6	450W 100-240V AC Power Supply for ERS 5900, Back-to-Front Airflow.
AL7000A0F-E6	450W 100-240V AC Power Supply for ERS 5900, Front-to-Back Airflow.
AL1905A3B-E6	1,000-1,400W 100-240V AC Power Supply for ERS 5900 PoE, Back-to-Front Airflow.
AL1905A3F-E6	1,000-1,400W 100-240V AC Power Supply for ERS 5900 PoE, Front-to-Back Airflow.
AL190506B-E6	450W DC Power Supply for ERS 5900, Back-to-Front Airflow.
AL190506F-E6	450W DC Power Supply for ERS 5900, Front-to-Back Airflow.
AA1404037-E6	ERS 5900 Series Stacking Cable, 0.5 metre.
AA1404029-E6	ERS 5900 Series Stacking Cable, 1.0 metre.
AA1404031-E6	ERS 5900 Series Stacking Cable, 3.0 metre.
AA1404032-E6	ERS 5900 Series Stacking Cable, 5.0 metre.
AA1403011-E6	10GBASE-LR/LW SFP+ up to 10km over SMF
AA1403013-E6	10GBASE-ER/EW SFP+ up to 40km over SMF
AA1403015-E6	10GBASE-SR/SW SFP+ up to 300m over MMF
AA1403016-E6	10GBASE-ZR/ZW SFP+ up to 80km over SMF
AA1403017-E6	10GBASE-LRM SFP+ up to 220m over FDDI-grade MMF
AA1403019-E6	10GBASE-CX Dual-Attach Cable, up to 3m over Twinax
AA1403020-E6	10GBASE-CX Dual-Attach Cable, up to 5m over Twinax
AA1403018-E6	10GBASE-CX Dual-Attach Cable, up to 10m over Twinax
AA1403169-E6	10G-BX 10km SFP+, TX/RX pair AA1403170
AA1403170-E6	10G-BX 10km SFP+, RX/TX pair AA1403169
380221	ERS 5900 Advanced Software License. Enables additional functionality, including: OSPF, VRRP, ECMP, PIM-SM/PIM-SSM, IPv6 Routing, and IP Shortcut Routing.
383770	ERS 5900 Advanced Software + MACsec License. Enables additional functionality, including: OSPF, VRRP, ECMP, PIM-SM/PIM-SSM, IPv6 Routing, and IP Shortcut Routing. Enables MACsec to be enabled on Access and Uplink ports.
383168	ERS 5900 MACsec License. Enables MACsec to be enabled on Access and Uplink ports with Base Software feature set.

Note: SFP+ sockets are also capable of supporting a wide range of 1 Gigabit Ethernet Transceivers; refer to the product documentation for complete details.