Time Sensitive Networking Switch

⟫ Aquam8124TSN EN50155 Switch

- Support up to 24 Gigabit ports, or 4 Gigabit ports and 20 100Mbps ports, and support 8 PoE ports
- Support up to 60W for PoE power
- Gigabit ports support X-coded M12 connector, 100Mbps ports support D-coded M12 connector
- Supports optional bypass function
- Support DT-Ring, RSTP/MSTP, DRP ring network redundancy and VRRP
- Complies with the requirements of EN50155 and EN50121 industrial standards

Overview

Time sensitive Networking (TSN) is a set of protocol standards developed by IEEE802.1 TSN task force to build a more reliable Ethernet with low delay and low jitter. The standard defines the time sensitive mechanism of time scheduling and bandwidth reservation to ensure deterministic communication on standard Ethernet, which delivers guarantees of delivery and minimized jitter for those real-time applications that require determinism. With the significant increase of the amount of data in industrial Internet, the demand for bandwidth has increasingly become the bottleneck of industrial communication in the future.

TSN enables new levels of connectivity and optimization, leading to cost savings. The characteristics of high reliability, low delay and low jitter of time sensitive network are suitable for many industries.

Aquam8124TSN series is an EN50155 managed industrial Ethernet switch designed specifically for the rail industry, support up to 24 Gigabit ports or 4 Gigabit and 20 Fast Ethernet ports, support wall-mounting installation, support a wide range of operating temperature -40ºC ~ 70ºC, to comply the requirements of EN50155, EN50121 and other rail industry standards.

Aquam8124TSN switch supports time sensitive networking (TSN) features, and the current available time sensitive network base protocols include: IEEE 802.1AS Time Synchronization, IEEE 802.1Qbv Scheduled Traffic, IEEE802.1Qbu, IEEE802.1Qci, IEEE802.1CB etc. Aquam8124TSN provides PoE enabled model, support 110VDC isolated power supply, and 8 IEEE802.3at PoE+ (Compatible with the IEEE 802.3af/at) Ethernet ports.

Technical Specification

TSN	Support IEEE 802.1AS PTP/IEEE 802.1Qbv/IEEE 802.1Qcc/ IEEE 802.1Qbu/ IEEE 802.1Qci
Switching Function	Support VLAN, PVLAN, GVRP, port aggregation, LACP, port flow control, flow-based speed limits, broadcast storm suppression
Redundancy	Support DT-Ring/DT-Ring+/DT-VLAN, recovery time<50ms, DRP/DHP, recovery time<20ms, STP/RSTP/MSTP
Multicast	Support IGMP snooping, GMRP, static multicast, IGMPv2/v3
Security	Support HTTPS/SSL, SSH, TACACS+, IEEE802.1X, RADIUS, user classification, mac address binding
Service Quality Management	Support QoS, 802.1p(CoS), DSCP, SP and WRR queue, ACL
Management and Maintenance	Support Console, Telnet, WEB, SNMPv1/v2c/v3 and can be managed by Kyvision, SFTP/HTTP software update, power alarm, IP/MAC conflict alarm, memory/CPU utilization alarm, port alarm, ring alarm, port traffic alarm, CRC and packet loss rate alarm, SFP port rx power alarm, DDM (SFP interface), loop detection, RMON, port mirroring, Syslog, LLDP, Link-check
IP Management	Support DHCP server/snooping/client, DHCP Option 82, ARP
Clock Management	Support SNTP Client, IEEE802.1AS, IEEE1588

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Technical parameter	
Standard	IEEE 802.3i (10Base-T) IEEE 802.3u (100Base-T and 100Base-FX) IEEE 802.3ab (1000Base-T) IEEE 802.3z (1000Base-SX/LX) IEEE 802.3ad (Link aggregation) IEEE 802.3x (flow control) IEEE 802.1p (priority) IEEE 802.1Q (VLAN) IEEE 802.1d (STP) IEEE 802.1w (RSTP) IEEE 802.1s (MSTP) IEEE 802.1x (Network Access Control) IEEE 802.1ab (LLDP) IEEE1588 (PTP V2) IEEE 802.1AS IEEE 802.1Qbv IEEE 802.1Qbu IEEE 802.1Qci IEEE 802.1CB

Switching property	
Priority Queues	8
VLAN Number	4K
VLAN ID	1 ~ 4094
Multicast Group Number	8K
MAC Table	16K
Packet Buffer	1Mbit
Switching Delay	< 5μs
Jumbo Frame	9.6Kbytes

Interface	
Interface	10/100/1000Base-T(X) M12 X-coded port, Bypass optional; 10/100Base-T(X) M12 D-coded port, PoE optional ,support IEEE803.2af /at;
Console	RS232 M12 A-coded connector
Alarm Port	M12 A-coded connector

LED	
LED On Front Panel	Running led: Run Alarm led: Alarm Power LED: PWR1, PWR2 PoE LED: ACT (PoE model) Interface LED: Link/ACT

Power Supply	
Power Input	110VDC (66~154DC)
Power Terminal	M23 connector
Power Consumption	< 100W (with POE)
Overload Protection	Support
Reverse Protection	Support
Redundant Protection	Support

Physical Characteristics	
Housing	Metal
Cooling	Natural cooling, fanless
Protection Class	IP40
Weight	< 4.5Kg
Mounting	Wall-mounting

Environment	
Operating Temperature	-40ºC ~ 70ºC
Storage Temperature	-40ºC ~ 85ºC
Relative Humidity	5 ~ 95% (non-condensing)
MTBF	> 300000h

Industrial Standard	
EMI	FCC CFR47 Part 15, EN55022/CISPR22, Class A
EMS	EN50121
Fire Protection	EN45545-2
Safety	EN62368-1
Rail Transit	EN50155, EN50121-1, EN50121-4
Mechanical	IEC60068-2-32 (Free Fall), IEC61373 (Vibration and shock)

Ordering Information

Model	Description
Aquam8124TSN-B-16GE8GP	EN50155 TSN switch, 16x 10/100/1000BASE-T(X) M12 ports, 8x 10/100/1000BASE-T(X) M12 PoE ports, support Bypass
Aquam8124TSN-B-4GE12T8P	EN50155 TSN switch, 4x 10/100/1000BASE-T(X) M12 ports; 12x 10/100BASE-T(X) M12 port, 8x 10/100BASE-T(X) M12 PoE ports, Gigabit port support Bypass
Aquam8124TSN-B-4GE20T	EN50155 TSN switch, 4x 10/100/1000BASE-T(X) M12 ports; 20x 10/100BASE-T(X) M12 ports, Gigabit port support Bypass
Aquam8124TSN-16GE8GP	EN50155 TSN switch, 16x 10/100/1000BASE-T(X) M12 ports, 8x 10/100/1000BASE-T(X) M12 PoE ports
Aquam8124TSN-4GE12T8P	EN50155 TSN switch, 4x 10/100/1000BASE-T(X) M12 ports; 12x 10/100BASE-T(X) M12 ports, 8x 10/100BASE-T(X) M12 PoE ports
Aquam8124TSN-4GE20T	EN50155 TSN switch, 4x 10/100/1000BASE-T(X) M12 ports; 20x 10/100BASE-T(X) M12 ports

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