Aquam8612-1U/8112-1U
12G port layer 3/2 managed EN50155 switch

⟫ Overview

The Aquam8612-1U/Aquam8112-1U series are specifically designed Layer2/Layer3 industrial Ethernet switches for railway industry application , supporting 12 10/100/1000Base-T(X) ports, among which four 10/100/1000Base-T(X) ports are Bypass ports. PoE models include 8 10/100/1000Base-T(X) PoE/PoE+ ports.

The Aquam8612-1U/Aquam8112-1U series are 1U rack-mount type, supporting wide range operating temperature -40~70℃ and comply with railway industry standards e.g. EN50155, EN50121, EN45545 and etc. All interface connectors are M12 type connectors guarantying robustness and firmness of port connection; and are very suitable for applications with shock and vibration. With 20ms fast recovery time redundant ring protocol DRP and Dual-homing protocol DHP enabled, the new series can adapt to various network topologies like star, ring, ladder and etc. to achieve different availability and reliability goals. In addition, KyACB-USB-M12(optional peripheral) provides fast configuration backup and restore function via M12 USB interface on the switch to save replacement time.

⟫ Key Features

Supports 12 10/100/1000Base-T(X) M12 X-Code ports, among which 4 10/100/1000Base-T(X) ports are Bypass ports

Supports OSPFv2，RIPv2 and static routing(L3 switch only)

Supports NAT function(L3 switch only)

Supports 802.3af/at PoE/PoE+

Product Specifications

>Software Functions
-Switching

Supports VLAN,PVLAN,GVRP

Supports static link aggregation and LACPSupports flow control

Supports speed limit, Broadcast, Multicast, Unknown unicast storm control

Static and dynamic MAC addresses and MAC address aging

-Redundancy

Supports VRRP(L3 Switch only)

Supports RSTP/MSTP

Supports DT-Ring, with recovery time <50ms

Supports DRP/DHP, with recovery time <20ms

Supports Link Aggregation (LACP, IEEE802.3ad)

-Routing

Supports OSPFv2 , RIPv1/v2, VRRP(L3 Switch only)

Supports static routing(L3 Switch only)

Supports NAT(L3 Switch only)

-Multicast

Supports IGMP-snooping v1/v2/v3

Supports GMRP

PIM-SM,PIM-DM(L3 Switch only)

IGMP v1/v2(L3 Switch only)

-Network Security

Supports IEEE 802.1x

Supports HTTPs/SSL

Supports SSH

Supports a local RADIUS server and also the forwarding of an authentication to an external RADIUS server.

Supports TACACS+

Supports MAC filtering

Supports account classification

Supports ACL

-Service Quality

Control and limit the data traffic for each port (as well dependent of the protocol)

Supports 802.1p TOS/DiffServ, Supports SP, WRR queue scheduling

-Management and Maintenance

Supports Console,Telnet,WEB console

Supports SNMPv1/v2c/v3, v3 supports DES and AES encryption

Supports TCP/UDP, Ping, Trace route

Supports upload/download for software and configuration by FTP/TFTP/HTTP/HTTPs

Supports port mirroring and remote mirror port

Supports LLDP and LLDP MIB(802.1ab)

Supports the configuration of a maximum packet size (MTU)

Supports ICMP, ICMP Router Discovery

-Diagonsis

Supports internal hardware self-test,

Supports IP/MAC conflict alarm, CPU/Memory usage alarm, Power failure alarm, Port alarm, Port traffic alarm, CRC error/Packet loss alarm and Ring alarm

Supports Syslog, the maximum size of the log file needs to be specified

-IP Management

Supports IPv4

Supports DHCP server/option12

Supports Port Security over DHCP

Supports DHCP-relay-agent/option 82/61/66/67

Supports BOOTP/Bootstrap Protocol

DHCP Relay Agent Information Option

DHCP Client

Supports DNS relay(L3 switch only)

Supports ARP

Supports 1-1 NAT, NAPT(L3 switch only)

-Time Management

Supports SNTP client

Supports PTPv2 Transparent Clock mode

-Characteristic Functions

Supports Bypass power failure bypass function

Supports Auto-Backup and Configuration

-MIB

Public MIB: MIB-II, LLDP MIB, ifXTable, dotldBridge, TTDP MIB, RSTP MIB, IGMP snooping MIB, MRP MIB, DRP MIB

Private MIB: kylandPort, kylandDev, KylandAlarm, Private LLD, kylandUpdate, kylandUpdateCfg, kylandDownloadCfg

>Technical Specifications
-Technical Parameters

IEEE 802.3i(10Base-T)

IEEE 802.3u(100Base-TX)

IEEE 802.3ab(1000Base-T)

IEEE 802.3x(Flow Control)

IEEE 802.1p(Priortiy)

IEEE 802.1Q(VLAN)

IEEE 802.1s（MSTP）

IEEE 802.1w（RSTP）

IEEE 802.1X

IEEE 802.3af

IEEE 802.3at

-Switching properties

Priority Queues 8

Number of VLANs 4K

VLAN ID 1～4093

Number of multicast groups 256(GMRP),1K(IGMP Snooping)

Routing table 4K

MAC Table 32K

Buffer 32Mbit

Forwarding rate 44.6Mpps

Switching latency <10us

-Interface

Ethernet: 12*10/100/1000Base-TX M12 X-Code, among which are 4 Gigabit Bypass ports

USB: M12 A-Code

Console: RS232,M12 A-Code

-LED

Runing LED：Run

Ring LED：Ring

Power LED：PWR1、PWR2

Alarm LED：Alarm

USB LED：USB

Port LED：Link/ACT

PoE LED：PoE(PoE model only)

-Power Requirements

110VDC（77~137.5VDC）redundant inputs，M12 A-Code connector

Consumption:

Non PoE model:22W

PoE model: 99W

PoE power output 60W max.

-Physical Characteristics

Housing: Metal

Cooling: Nature cooling，fanless

Mounting: 1U Rack-mount

Weight: 3.7kg

IP class: IP40

Dimensions: 440x44x220mm(WxHxD)

-Enviromental Limits

Operating temperature: -40℃~+70℃

Storage temperature: -40℃~+85℃

Ambient relative humidity: 5~95% non-condensing

-Warranty

Warranty Period: 5 years

MTBF: 606154h (Calculation: Telcordia (Bellcore) SR-332, Issue 2, September 2006)

-Approval

Pending: CE, FCC, EN62368(CE-LVD), EN50155, EN50121, EN45545

-Industrial Standards

EMI FCC CFR47 Part 15,EN55022/CISPR22,Class A

EMS IEC61000-4-2 (ESD) ±6kV (contact), ±8kV (air)

IEC61000-4-3 (RS) 20V/m (80MHz-2GHz)

IEC61000-4-4 (EFT) Power Port: ±2kV; Data Port: ±2kV

IEC61000-4-5 (Surge) Power Port: ±1kV/DM, ±2kV/CM
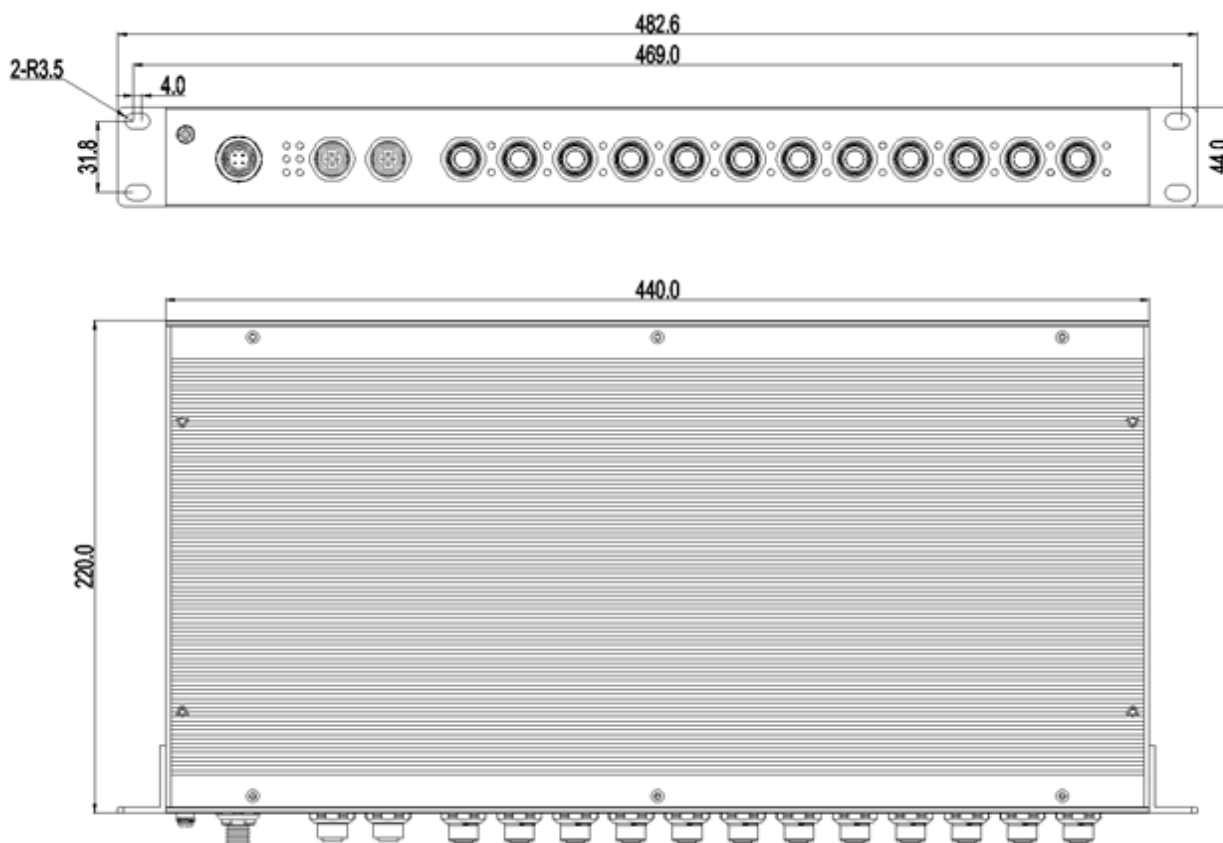
IEC61000-4-6 (CS)10V (150kHz-80MHz)

IEC61000-4-8(Power frequency magnetic field)50Hz 100A/m

IEC61000-4-9(Pulsed magnetic field)300A/m

IEC61000-4-29 (Voltage Short interruptions) 10ms 100%

IEC61373-2010(Shock and Vibration)

Mechanical Drawing

Ordering Information

L2 managed switch

Model	Aquam8112-1U-B-Ports-PS1-PS2
Code Definition	Ordering Codes
B:	4x 1000M ports support 2 pairs of Bypass
Ports :	12GE = 12x 10/100/1000Base-T(X) M12 port; 4GE8GP= 4x 10/100/1000Base-T(X) M12 port; 8x 10/100/1000Base-T(X) M12 PoE port;
PS1-PS2:	H6-H6=72-110VDC(50.4-137.5VDC), redundant inputs

L3 managed switch

Model	Aquam8612-1U-B-Ports-PS1-PS2
Code Definition	Ordering Codes

B:	4x 1000M ports support 2 pairs of Bypass
Ports :	12GE = 12x 10/100/1000Base-T(X) M12 port; 4GE8GP= 4x 10/100/1000Base-T(X) M12 port; 8x 10/100/1000Base-T(X) M12 PoE port;
PS1-PS2:	H6-H6=72-110VDC(50.4-137.5VDC), redundant inputs

L3 managed switch with high performance NAT

Model	Aquam8612-1U-NAT-B-Ports-PS1-PS2
Code Definition	Ordering Codes
NAT:	High performance NAT
B:	4x 1000M ports support 2 pairs of Bypass
Ports :	12GE = 12x 10/100/1000Base-T(X) M12 port; 4GE8GP= 4x 10/100/1000Base-T(X) M12 port; 8x 10/100/1000Base-T(X) M12 PoE port;
PS1-PS2:	H6-H6=72-110VDC(50.4-137.5VDC), redundant inputs

Accessories

Accessory Model	Description	Note
M12-A-4P-F-Crimp	M12 female connector, A-Code, 4 Pin, Crimp	Power connector
M12-A-4P-M	M12 male connector, A-Code, 4 Pin	Console/USB connector
M12-X-8P-M-Crimp	M12 male connector, X-Code, 8 Pin, Crimp	10/100/1000Base-TXport connector
DT-XL-PWR-M12-XXX-3m	Power cord with M12 to naked pin , 3m length	Power cord(including M12 connector)
KyACB-USB-M12-A-4P-M	USB peripheral M12 A-Code 4pin male	M12 Automatic configuration backup USB peripheral