

SICOM6248/6448

48+2G/4G Port Layer3 Managed Industrial Ethernet Switch



CE, FCC, UL, RoHS

Overview

SICOM6248 and SICOM6448 are layer 3 managed industrial Ethernet switches with 48 ports 10/100Base-TX and 2/4 Gigabit modules of SFP TP/fiber ports. Offering layer 3 switching of hardware wire speed, they can support static/dynamic routing to optimize the network. They provide high performance and reliable solutions for industrial projects and simply are your best choice.

Features

- DT-Ring, recovery time < 50ms. Support multiple protocols such as STP/RSTP/MSTP and VRRP
- Max 4 GE ports and 24 FE ports
- Support QoS, VLAN, SNMP MIB V1/V2/V3, RMON (1, 2, 4, 9)
- Support static routing protocol and dynamic routing protocols such as RIP v1/v2, OSPF v2 and BGP v4
- Support various multicasting routing protocols such as PIM-SM, PIM-DM, DVMRP and so on
- 36Gbps Backplane bandwidth, hardware-based routing, wire-speed layer-3 switching and forwarding rate is up to 19.6Mpps
- Powerful ACL, hardware supports data filtering from L2-L7
- Auto-detection and control broadcasting storm. Support IGMP V1/V2/V3 message detection, effectively preventing broadcast overflow
- Support flow control in full/half duplex way, the rate control is of the step of 64K for Ethernet port
- Support QinQ (Double Tagging VLAN)
- Operating temperature: -40 to 75°C (-40 to 167°F)
- Dual redundant 24VDC power supply, 220VAC, 110VDC, 220VDC
- Ribbed Aluminum housing for heat dissipation (patent), fanless
- IP40 protection class
- Rack-mounting

Functions**Layer 3 Switching Technology and Routing Function**

Large backplane bandwidth, hardware routing, wire-speed layer-3 switching; support static routing and dynamic routing such as RIP v1/v2, OSPF v2, BEIGRP, BGP v4 and so on; support various multicasting routing protocols such as PIM-SM, PIM-DM, DVMRP and so on.

Redundant Ring Network (DT-Ring, RSTP)

Each Ethernet port can be set as either an ordinary one or a redundant one. Users can freely choose to build a Gigabit or 100Mbps redundant ring network. The recovery time of DT-Ring is less than 50ms.

Multi-Ring Coupling System (DT-Ring+)

The DT-Ring+ protocol is able to realize double ring network redundant backup function and multi-chain network redundant function.

PTP (Precision Time Protocol or IEEE1588)

PTP is Precision Time Protocol and IEEE1588, within synchronous precision of the sub-microsecond range. It's used for limited network requiring the highest precision of time synchronization. No special needs for synchronous communication when distributing control tasks, making it possible to separate communication time mode from program operation time mode. Being representative and open is another advantage of IEEE1588. Lots of controlling system suppliers have applied this standard in their products. With different devices manufacturers following the same standard, a solid synchronization is sustained among them.

Broadcasting Storm Control

When broadcasting and multicasting messages in the network reach a certain limitation, the network will be blocked. Our products are capable of eliminating those overfull messages.

VLAN

Based on the fact that data packets cannot be transmitted between different VLANs, one network will be divided by VLAN into multiple logical subnets to control the broadcast domain and segment flow as well as improve the reliability, security and manageability of the network. SICOM6000 series supports IEEE802.1q VLAN tag. It can be divided up into 4094 VLANs based on ports, while the VLAN section can be easily realized through Console or WEB Network Management Station.

QoS Priority

IEEE802.1p is the most popular priority scheme in LAN environment. With different port operation distributed with different levels of priorities, this function can configure port-based priority

Alarm Function

SICOM6000 series offers the alarm functions for power failure, port line and network. Through management software, all the alarm functions can be configured functionally. The alarming information is shown either through alarm contact or from management interface.

Various Configurations for Working Mode of Ports

SICOM6000 Series is able to configure the working mode of all TP ports through management: Full/half duplex, adaptive, enforced full/half duplex, 10/100M adaptive, enforced 100M full duplex for 100M fiber ports, enforced 1000M full duplex for 1000M fiber/TP ports.

Port Rate Configuration

SICOM6000 series is able to configure the rate of all ports through management as any integer multiple of 32 kbps.

RMON Network Monitor

RMON network management expands to the physical layer, making it possible to collect data of devices independently. The built-in monitor offers the limited ability to analyze the whole flow without occupying network resources (bandwidth). It supports four groups including statistics, history, alarm and event. Meanwhile, it permits the network management station to configure the grouping of multiple variables in the way of expression to enhance the effectiveness of transmitting management messages and to reduce the working load of the network management station, which will definitely satisfy your requirements of network segment monitoring function and enable you to manage a large network easily and effectively.

IGMP to Improve Network Communication Efficiency

IGMP is Internet Group Multicast Protocol. SICOM6000 Series offers IGMP monitoring and querying functions. Data packets can be transmitted only to multiple host computers which need them. This can prevent overloading and therefore solve the problems of occupied bandwidth when broadcasting.

OPC Uniform Management of Network Devices

In the SCADA software of industrial automation, OPC offers a bridge between hardware manufacturers and software developers. With the OPC Server interfaces provided by communication device suppliers and hardware producers, the software developers can get the information from hardware without having to worry about the differences between them and integrate all the information by the top level software for reference of decision-makers.

Configuration of CLI/SNMP-based Network Management Software

SICOM6000 Series support the configuration of CLI (command line) and SNMP-based network management software, enabling the users to configure the switches more flexible.

Technical Specifications**Standard**

IEEE802.3
IEEE 802.3u
IEEE 802.3x
IEEE802.3z
IEEE802.3ab
IEEE802.3ae
IEEE802.3ad
IEEE802.1p/q
IEEE802.1d
IEEE802.1w
IEEE802.1x
Store and forward switching mode

Interface

RJ45 Port: 48 (SICOM6248/6448) ×10/100Base-TX, adaptive,
Fiber Port: 2(SICOM6248) or 4 (SICOM6448) ×Gigabit port, SFP
CONSOLE interface: RS232, RJ45

Performance

Layer 3 forwarding rate: 19.6Mpps at line rate
Switching mode: store and forward
Backplane switching capacity: 36G
Routing table: 30K
MAC address table: 16K
802.1Q VLAN: any division from 1 to 4094
Routing Management: static routing, RIP v1/v2, OSPF v2, BEIGRP, BGP v4, IP-based policy routing
Management: CLI, Telnet, SNMPv1/v2, Kyvision

Service

Management: Serial port, Telnet, CLI, SNMP v1/v2, Kyvision
Diagnostics: LED
Each port RMON(1,2,3,9 group)---(statistics, history, alarm and event)
Port mirroring
VLAN: Port-based VLAN, 802.1Q tag VLAN, Vlan Stacking (QinQ), Super Vlan, Private Vlan, GVRP dynamic VLAN
Configuration: TELNET, Hyper terminal, DHCP Server, DHCP Client and DHCP relay
Security: 802.1x Port-Based Authentication System
MPLS Martini solution
QinQ double VLAN security
Port Security
IP ACL, MAC ACL, Vlan ACL
Port+IP+MAC binding
WEB interface user authentication
Remote RADIUS
TACACS+authentication
User Classes and password protection
Other service: Restrain broadcast storm, stop forwarding at critical point
IGMP Snooping
IGMP v1/v2/v3
PIM-SM, OLINK&PIM-DM
DVMRP
GMRP
Routing: Static routing
RIP v1/v2, OSPFv2, BEIGRP), BGPv4
Anti-virus intelligent routing and forwarding
Support policy routing basing on IP

Power Requirements

Power input: 220VAC, 110VDC, 220VDC, 24VDC
Power consumption: <60W

Physical Characteristics

Casing: IP40 protection
Ribbed Aluminum housing fanless design
Dimensions(WxHxD): 482.6x44x374mm (19x1.73x14.72 in.)
Installation: Rack mounting

Environmental Limits

Operating Temperature: -40 to 75°C (-40 to 167°F)
Storage Temperature: -45 to 85°C (-49 to 185°F)
Ambient Relative Humidity: 0 to 95% (non-condensing)

Approvals

EMC interference immunity:

IEC61000-4-2(ESD): ±8KV contact discharge, ±15KV air discharge

IEC61000-4-3(RS): 10V/M (80-1000MHz)

IEC61000-4-4(EFT): ±4KV power line, ±4KV data line

IEC61000-4-5(Surge): ±4KV(line/earth), ±4KV (line/line)power line,
±2KV data line

IEC61000-4-6(CS):3V(10KHZ~150KHZ),10V(150KHZ~80KHZ)

EMC emitted immunity:

FCC CFR47 Part15: FCC CFR47 Part 15 Class A

EN55022: EN55022 Class A

UL60950,CE,FCC,ROHS

MTBF

35 years

Warranty

5 Years

Ordering Information

Model	Description
SICOM6248	48×10/100Base-TX, 2 × slot for 1000M port, SFP
SICOM6448	48×10/100Base-TX, 4 × slot for 1000M port, SFP
SM-SFP-RJ45	SFP interface module with 1 x 1000M port, RJ45 connector
SM-SFP-LX/LC	SFP interface module with 1 x 1000M port, LC connector 10Km supported
SM-SFP-LH/LC-40	SFP interface module with 1 x 1000M port, LC connector 40Km supported
SM-SFP-LH/LC-80	SFP interface module with 1 x 1000M port, LC connector 80Km supported