

24-port Gigabit Layer 2 Industrial Managed Switch



NS3550-24T/4S

OVERVIEW

The IFS 24-port Gigabit Managed Industrial Switch is an environmentally hardened Layer 2 switch with high port density and Gigabit Fiber uplink capability in a rugged IP30 rated 19" rack-mountable design. This Industrial Switch provides full management capabilities and is perfect for applications such as factory automation, distribution centers, utilities and intelligent transportation systems (ITS).

Environmentally Hardened Design for Industrial Networking

This switch is engineered for stable operation in electrically harsh and demanding environments under a wide operating temperature range. This switch is equipped with advanced management features and provides 24 10/100/1000Base-T copper ports and 4 shared 1000Base-SX/LX SFP slots. It is designed with a non-blocking switch fabric and is capable of providing wire-speed throughput as high as 48Gbps for reliable operation from -40 to 75°C without any packet loss and CRC errors.

Robust Layer 2 Features

This Industrial Managed Switch provides advanced Layer 2 to Layer 4 data switching and redundancy, such as support for STP, RSTP and MSTP to greatly improve redundant data backup and guarantee network resilience. Other features include Quality of Service traffic control, network access control and authentication, and Secure Management features to protect a facilities industrial network connectivity with a reliable switching recovery capability that is suitable for implementing highly fault-tolerant and mesh network architectures. This switch also supports standard Simple Network Management Protocol (SNMP) and includes an advance SNMP feature set to monitor the status of the switch and traffic per port. The switch can also be monitored via any standards-based SNMP management software.

IPv6 Support

The IFS Industrial Managed Switch is the ideal solution for new or existing networks that are adopting IPv6. This switch supports both IPv4 and IPv6 management functions and can work with an original IPv4 network infrastructure. With an easy-to-use management interface and a robust number of management functions, the IFS Industrial Managed Switch is the best choice for building out IPv6 FTTx edge services and for Industrial applications to connect with an IPv6 network.

Powerful Security

This switch offers comprehensive Access Control List (ACL) for enforcing security to the edge. Its protection mechanisms also comprise of port-based 802.1x, RADIUS and TACACS+ users access authentication, and MAC-based user and device authentication allowing network administrators to managed highly secured industrial networks.

Integrated Intrusion/Event Alarms via Digital I/O

The IFS Industrial Managed Switch provides digital input and output functions to assist system administrator's to efficiently react to emergency events. The digital input can be setup to indicate alarm events and send a message or alarm to the network system once the urgent event is detected by an external device, such as a door or window contact. The digital output function can define the immediate response such as a port failed or power failed related to the alarm event.

Redundant Power to Ensure Continuous Operation

The IFS Industrial Managed Switch also supports redundant DC power inputs with transient protection to ensure reliable and continuous operation. The redundant power system is designed to operate in a range from 36~72VDC for reliable operation in mission critical network deployments which require a highly resilient network.

STANDARD FEATURES

24-port Gigabit Industrial Managed Switch

- 24-ports RJ-45 10/100/1000Base-T
- 4 SFP/mini-GBIC slots shared with Ports 21 to 24 - compatible with 1000Base-SX/LX/BX and 100Base-FX SFP transceivers
- RS-232 DB9 console interface for basic switch management and setup

High-performance Switch Architecture

- Complies with the IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z standards
- High performance Store and Forward architecture, broadcast storm control, runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x PAUSE frame flow control (full-duplex)
- Up to 48Gbps non-blocking switch fabric
- 10K bytes Jumbo frame support
- 8K MAC address table, automatic source address learning and ageing

Full Multicast Support for IP Video

- IGMP Snooping v1, v2 and v3 fast leave
- IGMP Query mode support
- Up to 256 multicast groups

VLAN Support

- IEEE 802.1Q Tag-Based VLAN
- Up to 255 VLANs groups, out of 4096 VLAN IDs
- Port-Based VLAN
- Q-in-Q tunneling (Double Tag VLAN)

Spanning Tree Protocol

- STP, IEEE 802.1D (Spanning Tree Protocol)
- RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol)
- MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol); Up to 8 MSTP instances

Quality of Service (QoS)

- 4 priority queues on all switch ports
- Traffic classification:
 - IEEE 802.1p Class of Service
 - IP TOS/DSCP code priority
 - Port Base priority
- Strict priority and weighted round robin (WRR) CoS policies
- Ingress/Egress Bandwidth Control on each port

Link Aggregation

- IEEE 802.3ad LACP (Link Aggregation Control Protocol)
- Up to 12 Trunk groups
- Up to 16 ports per trunk group with 32Gbps bandwidth (Full Duplex mode)
- Supports Cisco ether-Channel (Static Trunk)

Advanced Security

- IEEE 802.1x Port-based authentication
- RADIUS and TACACS+ users access authentication
- Layer 3 and Layer 4 Access Control List (ACL)
- MAC Filtering and Source IP/MAC address port-binding
- Port Mirroring to monitor incoming or outgoing traffic on a particular port

Switch Management

- Local console or remote switch management via Web browser, Telnet CLI, SNMP v1, v2c, v3
- SNMP Trap for alarm notification of events
- Four RMON groups 1, 2, 3, 9 (history, statistics, alarms, and events)
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- Configuration upload/download via TFTP or HTTP
- Firmware upgrade via TFTP or HTTP
- SNTP (Simple Network Time Protocol)
- LLDP Protocol
- Supports Ping function
- Cable Diagnostics
- Reset button for system management

Robust Hardened Design

- IP30 metal enclosure
- 36 ~ 72VDC, redundant power with reverse-polarity protection
- Alarm relay output for port breakdown and power-failure alert
- Complies with IEC60068-2-xx standards for free-fall, shock and vibration
- Wide operating temperature range of -40°C ~ +75°C

Warranty

- 3-year Limited Warranty

FIRMWARE 1.5 FEATURES

Management

- IPv6 Management
- IPv6 Auto Configuration
- Port Description
- Configuration Backup
 - Expect IP
- MAC Address Query by Port
- Telnet / SSH
- HTTP Web Management/SSL
- LLDP-MED
- DHCP Relay
- DNS Proxy
- Remote IP Ping by Port
- CPU Loading Monitoring

Management Access Control

- HTTP / HTTPs
- SNMP
- Telnet / SSH
- 6 Levels - Local Users Privilege Access Control
- 15 Levels - Remote User Privilege Access Control

Event Log / Alarm

- Local System Log
- Remote Syslog (RFC3164)
- SMTP (RFC 821)
- .CSV log download

Enhanced Spanning Tree

- 802.1s
- BPDU Guard / Filtering
- Port Error Recovery
- Auto Edge

Improved Multicasting

- IGMP Router Port Control
- MVR
- Multicast Group Filtering
- IGMP Throttling
- IGMP Leave Proxy

Enhanced VoIP Support

- DSCP Remarking
- Voice VLAN

Improved Security

- Guest VLAN Authentication
- TACACS+ Authentication
- DHCP Snooping
- IP Source Guard
- Static IP Source Guard
- ARP Inspection
- Static ARP Inspection

Simple, yet Powerful Web Services

Simple, yet powerful Web Services provide an easy-to-use, browser-based interface for switch configuration, management and network monitoring.

Programming functions such as port speed configuration, multicasting for IP video, IGMP snooping and query, Rapid Spanning Tree, QoS (Quality of Service), VLAN set up, Port Trunking, bandwidth utilization, etc., are all easily accessible with a click of a mouse.



Simple Multicasting

IFS Layer 2 managed switches offer full multicast support for IP video. Many Layer 2 switches provide only IGMP snooping, which is only half of the multicasting process. IFS switches provide support for both IGMP snooping and querying providing full reliable handling of IP video streams.

In addition, these switches provide the ability to configure up to 255 multicasting groups. Set up is simple and easy with the built-in Web Services.



Built-in Diagnostics

The IFS GigE switches go beyond just basic set up operations. The built-in Web Services provides cable diagnostics that can monitor each port providing immediate notification of problem areas. Diagnosis of ethernet connections, and cable connections right down to the wire pair save you valuable time and expense in troubleshooting system cable problems.

IFS switches even allow you to test the path between switches within a network assuring the path can handle large IP packets. Using ICMP, simply enter the destination IP address and file size and click start!



24-port Gigabit Layer 2 Industrial Managed Switch

North America
T 855-286-8889

Asia
T 852-2907-8108

Australia
T 61-3-9239-1200

Europe
T 32-2-725-11-20

Latin America
T 561-998-6114

Specifications

Physical Ports	Description
10/100/1000Base-T (X) Ports	RJ-45 (24)
SFP/Mini-GBIC Slots	SFP/Mini-GBIC Slots (4) - Shared with RJ-45 Ports-21 to 24; 1000Base-SX/LX/BX and 100Base-FX SFP transceiver compatible
Port Configuration	Auto MDI/MDI-X
Port Speed	Auto-negotiate

Switch Performance	
Switch Architecture	Store-and-Forward
Switch Fabric	48Gbps non-blocking
Switch Throughput	35.7Mpps@64Bytes
Mac Address Table	8K entries
Share Data Buffer	1392 kilobytes
Jumbo Frame Size	10Kbytes
Flow Control	IEEE 802.3x Pause Frame for Full-Duplex Back pressure for Half-Duplex

Layer 2 Functions	
Management Interface	Console, Telnet, Web Browser, SNMPv1, v2c and v3
Port Configuration	Port enable/disable; Auto-negotiation; 10/100/1000Mbps full and half duplex mode selection; Flow Control enable/disable; Bandwidth control on each port
Port Status	Display each port's: speed duplex mode, link status, flow control status, Auto negotiation status, trunk status
Port Mirroring	TX/RX/Both; 1 to 1 monitoring
Bandwidth Control	Ingress/Egress rate control: configure per 128Kbps
VLAN	IEEE 802.1q tagged-based VLAN; Port-based VLAN; Q-in-Q tunneling; Up to 255 VLANs groups; Private VLAN
Link Aggregation	IEEE 802.3ad LACP / Static Trunk; Supports 12 groups of 16-Port trunks
Quality of Service (QoS)	Traffic classification based, Strict priority and WRR; 4-level priority for switching - Port Number - 802.1p priority - DS/TOS field in IP Packet
Multicasting/IGMP	IGMP (v1/v2) Snooping, up to 255 multicast Groups; IGMP Querier mode support
Access Control List	IP-Based ACL/MAC-Based ACL 256 entries
SNMP MIBs	RFC-1213 MIB-II; IF-MIB; RFC-1493 Bridge MIB; RFC-1643 Ethernet MIB; RFC-2863 Interface MIB; RFC-2665 Ether-Like MIB; RFC-2737 Entity MIB; RFC-2618 RADIUS Client MIB; RFC-2933 IGMP-STD-MIB; RFC3411 SNMP-Frameworks-MIB; IEEE802.1X PAE; LLDP; MAU-MIB

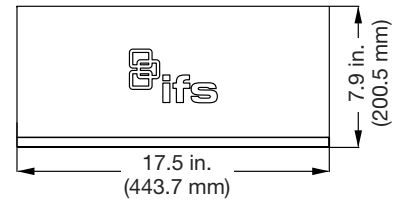
LED Indicators & Switch	
Power	On/Green
10/100/1000Base-TX/PoE Ports	10/100 LNK/ACT - Green
10/100/1000Base-T/SFP Ports	100 LNK/ACT - Green; 1000 LNK/ACT - Green
FAN(s)	Alarm/Green
Reset Button	System reboot: push and hold < 5 sec.; Factory Default: push and hold > 5 sec.

Electrical & Mechanical	
Power	36~72VDC dual redundant external power with reverse polarity protection
Power Consumption (@ 48VDC)	System On: 22.08 Watts / 75.75 BTU; Full Load: 32.28 Watts / 110.75 BTU
Dimensions (WxDxH); in/cm	17.32 x 7.87 x 1.75 in. (44 x 20 x 44.5 cm)
Weight; lbs/kgs	6.13lbs / 2.78kg

Environmental	
Operating Temperature	-40°C ~ 75°C
Storage Temperature	-40°C ~ 85°C
Relative Humidity	0% to 95% (non-condensing)

Standards Compliance	
Regulatory Standards	FCC Part 15 Class A, CE
IEEE Standards	IEEE 802.3 10Base-T; IEEE 802.3u 100Base-TX/100Base-FX; IEEE 802.3z Gigabit SX/LX; IEEE 802.3ab Gigabit 100T; IEEE 802.3x Flow Control and Back pressure; IEEE 802.3ad Port trunk with LACP; IEEE 802.1d Spanning tree protocol; IEEE 802.1w Rapid spanning tree protocol; IEEE 802.1s Multiple spanning tree protocol; IEEE 802.1p Class of service; IEEE 802.1Q VLAN Tagging IEEE 802.1x Port Authentication Network Control; IEEE 802.1ab LLDP

Dimensional Diagrams



Ordering Information

NS3550-24T/4S	24-Port Gigabit Industrial Managed Switch
Included Accessories	Quick Installation Guide, User Manual CD, 19" Rack mount accessory kit, rubber feet, RS-232 DB9 male console cable

Note: External power supply must be ordered separately.

Accessories

SFP (100Mbps)	S25 Series (wide-temp)
SFP (1000Mbps)	S35 Series (wide-temp)
HLG-240-48	48VDC (240W) Hardened Industrial Power Supply
PS48VDC100W-DIN	48VDC @ 2A (100W) Hardened DIN-Rail Mount Power Supply (100~240VAC)



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Specifications subject to change without notice.

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210-3573 2012/10 (71654J)