

# 24-port Fast Ethernet Layer 2 PoE Managed Switches

## OVERVIEW

Designed to provide fast and efficient connectivity from the network edge to a backbone switch or server, the IFS 24-port Fast Ethernet PoE Managed Switch series features 24 10/100Mbps Ethernet ports with full power isolated PoE ports. The 2 Gigabit TP/SFP combo ports can be either 10/100/1000Mbps (RJ45) or Gigabit only (1000Base-SX/LX/BX) through an SFP (Small Form-factor Pluggable) GBIC interface.

### Robust Layer 2 Features

For efficient switch management, the IFS 24-port Fast Ethernet PoE Managed Switch series is easily programmable, via a simple, yet powerful Web interface. This switch can be managed for functions such as Port Speed Configuration, Port Link Aggregation, IEEE 802.1Q VLAN and Q-in-Q VLAN, Port Mirroring, Rapid Spanning Tree and ACL security. The switch also includes advanced features such as Multicasting with IGMP snooping and query, QoS (Quality of Service), broadcast storm and bandwidth control to enhance bandwidth utilization.

These switches support standard Simple Network Management Protocol (SNMP) and include an advanced 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.

### Engineered for Real-time Performance

This switch series is designed with a high-performance switch architecture capable of providing a non-blocking switch fabric with wire-speed throughput as high as 8.8 Gbps. To ensure optimum quality of service, the IFS 24-port Fast Ethernet PoE Managed Switch Series classifies and prioritizes Layer 2 802.1p or Layer 3 IP TOS/DSCP traffic into four hardware queues that support strict or Weighted Round Robin (WRR) queuing algorithms. This functionality provides maximum allocation of limited network resources and guarantees best performance for real-time applications.



**GE-DS-242-PoE**  
24-Port 10/100Mbps PoE-af (15.4w) Managed Switch with 2 Gigabit SFP Combo Uplink Ports



**NS2503-24P/2C**  
24-Port 10/100Mbps PoE-af/at (30w) Managed Switch with 2 Gigabit SFP Combo Uplink Ports

### Full Power Isolated per Port PoE

The GE-DS-242-POE and NS2503-24P/2C models provide optimized deployment and safe power management of PoE edge devices such as IP Surveillance cameras, access control panels, wireless access points (WAP) and Voice over IP (VoIP). Full power PoE-af (15.4w) is provided to all 24 ports with no power sharing, and added port circuit protection isolates and prevents power interference between ports. In addition to standard IEEE 802.3af (15.4w), the NS2503-24P/2C provides support for up to 12 ports of IEEE 802.3at (30w) PoE.

### Advanced Security

This switch series also offers comprehensive Layer 3 and Layer 4 Access Control List (ACL) to filter out unwanted traffic. Its protection mechanisms are comprised of RADIUS and Port-Based 802.1x user and device authentication. In addition, the switches provide MAC filter, Static MAC, IP/MAC binding and Port Security for enforcing security policies to the edge. With IFS enterprise-class switches, a network administrator can now construct a highly secure network with considerably less time and effort.

## STANDARD FEATURES

### Physical Ports

- 24-Port 10/100Base-TX RJ-45 with PoE
- 2-Uplink Gigabit TP/SFP combo ports
- 1 RS-232 male DB9 console port
- Auto-MDI/MDI-X detection
- Auto-negotiation
- Supports full-duplex/half-duplex modes

### 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
- 8.8 Gbps non-blocking switch fabric
- 9K bytes Jumbo frame support
- 8K MAC address table, automatic source address learning and aging

### Full Multicast Support for IP Video

- IGMP Snooping v1 and v2 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 (4041 for NS2503-24T/2C) VLAN IDs
- Port-Based VLAN
- Q-in-Q tunneling (Double Tag VLAN)

### Spanning Tree Protocol

- STP, IEEE 802.1D (Spanning Tree Protocol GE-DS-242-PoE)
- RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol GE-DS-242-PoE)
- MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol NS2503-24T/2C)

### 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

### Power over Ethernet (PoE)

- GE-DS-242-POE complies with IEEE 802.3af (15.4w) Standard
- NS2503-24P/2C complies with IEEE.802.3af (15.4w) and IEEE802.3at (30w) Standards
- Up to 380 Watt power budget
- Auto-detects PoE powered devices (PD)
- Provides full-power PoE on each port - no port sharing
- Circuit protection isolates and prevents power interference between ports
- End-Span (PSE) configuration supplies power up to 100m
- PoE Management features:
  - Total power budget control
  - Per port control (enable/disable, priority, power limit)
  - PD classification detection
  - Power Supply Over temperature Protection

### Link Aggregation

- Circuit protection isolates and prevents power interference
- IEEE 802.3ad LACP (Link Aggregation Control Protocol)
- Up to 13 Trunk groups
- Up to 8 ports per Trunk group with 1.6Gbps bandwidth (Full Duplex mode)
- Supports Cisco ether-Channel (Static Trunk)

### Advanced Security

- IEEE 802.1x Port-based authentication
- RADIUS 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 (GE-DS-242-POE)
- SNMP v1, v2c, v3 (NS2503-24P/2C)
- 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
- Configuration upload/download via TFTP or HTTP
- Firmware upgrade via TFTP or HTTP
- Supports Ping function
- Reset button for system management

### Warranty

- 3-year Limited Warranty

## ADDITIONAL FIRMWARE 1.5 FEATURES

### Management

- 6 Levels of User Privilege Access Control • Improved Multicast Control • Configuration Backup Expect IP • Event Log/Alarms
- Remote IP Ping by Port • MAC Table Query by Port

### Power over Ethernet (PoE) Management

- System PoE Enable/Disable • PoE Threshold and Event • Temperature Threshold and Event

# Specifications

Physical Ports	GE-DS-242-POE	NS2503-24P/2C	
10/100Base-T(x) Ports	RJ-45 (24)		
GigE Combo Uplink Ports	RJ-45 (Ports 25 and 26)	10/100/1000Mbps; SFP/Mini-GBIC Slots (Shared with Ports 25 and 26) 1000Base-SX/LX/BX (Gigabit SFPs only)	
Port Configuration	Auto MDI/MDI-X		
Port Speed	Auto-negotiate		
<b>Switch Performance</b>			
Switch Architecture	Store-and-Forward		
Switch Fabric	8.8Gbps (non-blocking)		
Switch Throughput	6.547Mpps @ 64Bytes		
MAC Address Table	8K entries		
Share Data Buffer	512Kbytes		
Maximum Frame Size	9K Bytes		
Flow Control	Back pressure for Half-Duplex; IEEE 802.3x Pause Frame for Full-Duplex		
<b>Layer 2 Functions</b>			
Management Interface	Console, telnet, Web browser, SSL, SNMPv1, V2	Console, telnet, Web browser, SSL, SNMP v1, v2c, and v3	
Port Configuration	Port enable/disable; Auto-negotiation; 10/100Mbps full-and-half duplex mode selection; Flow control enable/disable		
Port Status	Display each port's speed duplex mode, link status and 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, out of 4041 VLAN IDs		
Link Aggregation	Supports 13 groups of 8-port trunk, IEEE 802.3ad LACP		
Quality of Service (QoS)	Traffic classification based on: - Port priority - 802.1p priority - TOS/DSCP field in IP Packet		
Multicasting/IGMP	IGMP (v1/v2) Snooping; IGMP Query; Up to 256 multicast groups		
Access Control List	IP-based Layer 3/Layer 4 ACL; Up to 220 ACL rule entries (200 for NS2503-24T/2C)		
SNMP MIBs	RFC-1213 MIB-II; RFC-2863 Interface MIB; RFC-2665 EtherLike MIB; RFC-1493 Bridge MIB; RFC-2819 RMON MIB (Group 1, 2, 3,9); RFC-2737 Entity MIB; POWER-ETHERNET-MIB		
<b>Power over Ethernet</b>			
PoE Standard	IEEE 802.3af	IEEE 802.3af / IEEE 802.3at	
PoE Power Supply Type	End-Span (PSE)	End-Span (PSE)	
PoE Power Budget	380 Watts	360 Watts	
Max. number of Class 2 PD	24	24	
Max. number of Class 3 PD	24	24	
Max. number of Class 4 PD		12	
PoE Power Output Per Port	48VDC, 350 mA; 15.4 watts max.	48VDC, 350mA. Max. 15.4 watts (IEEE 802.3af); 52VDC, 590mA. Max 30 watts (IEEE 802.3at)	
Power Pin Assignment	1/2(+), 3/6(-)	1/2(+), 3/6(-)	
<b>LED Indicators &amp; Switch</b>			
Power	On/Green		
10/100Base-TX/PoE Ports (24)	10/100 LNK/ACT - Green; PoE in Use - Amber		
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.		
<b>Electrical and Mechanical</b>			
AC Power Input Voltage	100~240VAC, 50/60Hz, Auto-sensing		
Power Consumption (System on)	110V: (17.5 Watts); 220V: (17 Watts)	110V: (32 Watts); 220V: (31 Watts)	
Power Consumption (Full PoE load)	110V: (419 Watts max), 220V: (420 Watts max.)	110V: (425 Watts); 220V: (425 Watts)	
Dimensions (W x D x H)	17.32 x 11.81 x 1.75 in., (440 x 300 x 44.5mm)		
Weight	9.48 lbs., 4.3kg	10.14 lbs., 4.6kg	
<b>Environmental</b>			
Operating Temperature	0 to +50°C		
Storage Temperature	-20 to +70°C		
Relative Humidity	0% to 95% (non-condensing)		
<b>Standards Compliance</b>			
Regulatory Standards	FCC Part 15 Class A; CE, UL, cUL		
IEEE Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3ab IEEE 802.3z IEEE 802.3x IEEE 802.3ad IEEE 802.1d IEEE 802.1s IEEE 802.1p IEEE 802.1Q IEEE 802.1x IEEE 802.3af	10Base-T 100Base-TX 1000Base-T 1000Base-SX/LX Flow Control and Back pressure Port trunk with LACP Spanning Tree Protocol Rapid Spanning Tree Protocol Class of service VLAN Tagging Port Authentication Network Control Power over Ethernet	10Base-T 100Base-TX 1000Base-T 1000Base-SX/LX Flow Control and Back pressure Port trunk with LACP Spanning Tree Protocol Rapid Spanning Tree Protocol Class of service VLAN Tagging Port Authentication Network Control Power over Ethernet Power over Ethernet

# 24-port Fast Ethernet Layer 2 PoE Managed Switches

North America  
T 855-286-8889

Asia  
T 852-2907-8108

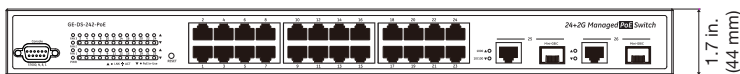
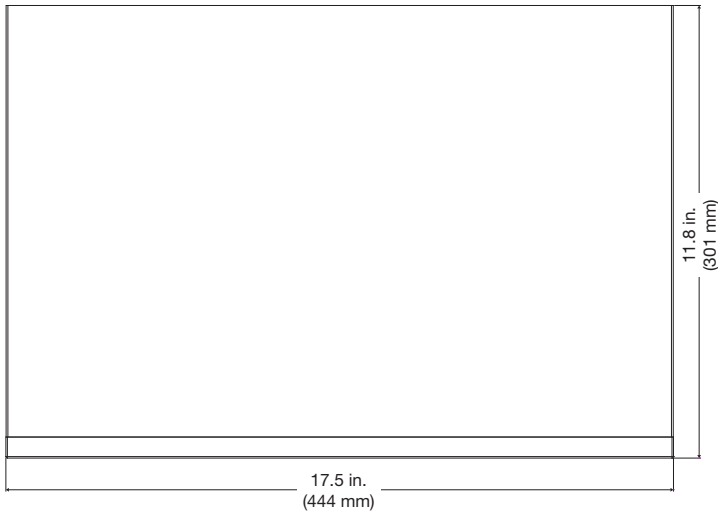
Australia  
T 61-3-9239-1200

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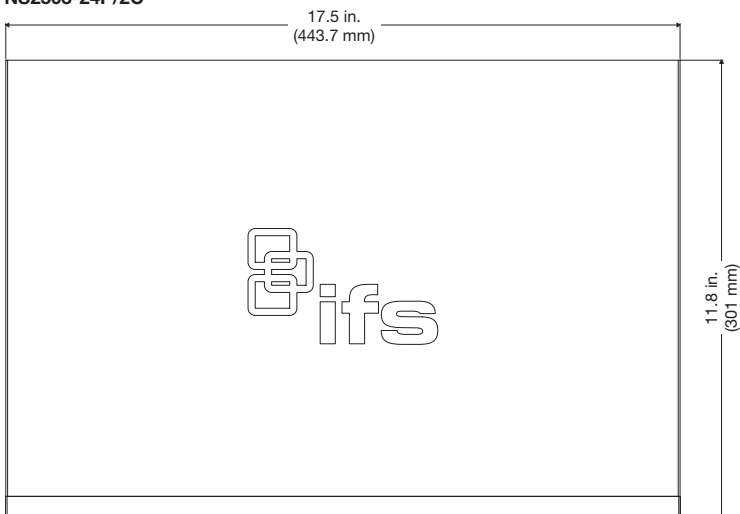
Latin America  
T 561-998-6114

## Dimensional Diagrams

GE-DS-242-PoE



NS2503-24P/2C



## Ordering Information

GE-DS-242-PoE	24-port Fast Ethernet Layer 2 PoE-af Managed Switch
NS2503-24P/2C	24-port Fast Ethernet Layer 2 PoE-af/at Managed Switch
Included Accessories	User's Manual CD, Quick Installation Guide, Power Cord, RS-232 Cable, Rubber Feet, Rack Ears with Screws

Note: These switches require a Small Form-factor Pluggable (SFP) for optical uplink use. IFS SFPs are available for multi-mode, single mode, and 1 or 2 fibers for various transmission distances over optical fiber. Please refer to the IFS SFP data sheet to select the appropriate SFP for your particular application needs. The mini-GBIC ports on these units accept Gigabit SFPs only. IFS S30 Series SFPs are recommended.

## Accessories

SFP	S30 Series
SFP	S35 Series (wide-temp)



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Specifications subject to change without notice.

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