ifs

Enterprise-class 24-port Gigabit Backbone Network Switches

GE-DSSG-244-PoE
Full PoE-af (14 ports)

GE-DSG-244
Non-PoE

GE-DSSG-244
Optical Fiber (SFP)

NS3601-24P/4S
Full PoE-af (24 ports)

OVERVIEW

These enterprise-class switches are engineered to meet a variety of high-performance applications such as PoE distribution, optical network architectures, and high-density performance through reliable stacking technology and advance Layer 2 networking features.

Robust Layer 2 Features

For efficient switch management, via a simple, yet powerful set of built-in Web Services, the IFS 24-port Gigabit Managed Switch Series can easily be programmed for all switch management 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. These switches also 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 IP Video Performance

This switch series is designed with a high-performance switch architecture that is capable of providing a non-blocking switch fabric with throughput as high as 68Gbps. To ensure optimum quality of service, the IFS 24-port Gigabit 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.

Additionally, the switch includes advanced features such as Multicasting with IGMP snooping and query, QoS (Quality of Service), broadcast storm and bandwidth control to assure effective bandwidth utilization of larger IP video files. All these integrated features combined provide maximum allocation of limited network resources and guarantees best performance for real-time applications, including VoIP, IP surveillance video, streaming audio and other multicast applications.

STACKABLE GigE SWITCHES

Full Power Isolated per Port PoE (GE-DSSG-244-PoE or NS3601-24P/4S Only)

The IFS 24-port Gigabit Stackable PoE Managed Switch features IEEE 802.3af Power over Ethernet (PoE) providing optimized deployment and power management of PoE edge devices such as IP Surveillance cameras. access control panels, wireless access points (WAP) and Voice over IP (VoIP). In addition, PoE port circuit protection isolates and prevents power interference between ports.

Full Optical Network Capabilities (GE-DSSG-244 Only)

For large-scale optical network deployment applications, the IFS 24-port Gigabit Stackable Managed Fiber Switch provides 24 100/1000Mbps dual-speed SFP slots with eight shared Gigabit TP ports. This allows for deploying either a Fast or GigE optical communication network to the edge.

Both the Stackable PoE and Stackable Fiber GigE Managed Switches are engineered with a 68Gbps switch fabric, dedicated high-speed stacking ring capabilities and link aggregation. This switch can provide for a highly-efficient backbone topology design that can handle an extremely large amount of IP video and data linking to high-capacity network servers or NVRs.

STANDALONE GigE SWITCH

Standard GigE Switch (GE-DSG-244 Only)

The IFS 24-port Gigabit Managed Switch is also a high-performance switch for Gigabit network deployment that does not require PoE or stacking capabilities at the core layer. Engineered with a 48Gbps switch fabric and supporting many of the same Layer 2 features of our stackable GigE switch products, this product is a cost-effective solution for Gigabit Ethernet network deployment.

STANDARD FEATURES

Physical Ports

24-port Gigabit Stackable PoE Managed Switch (GE-DSSG-PoE and NS3601-24P/4S)

- 24-ports 10/100/1000Base-T Gigabit Ethernet RJ-45 with IEEE 802.3af PoE
- 4 SFP/mini-GBIC slots shared with Ports 21 to 24 - compatible with 1000Base-SX/LX/BX and 100Base-FX SFP transceivers
- 2 HDMI-like 10Gbps (full-duplex) stacking ports
- RS-232 DB9 console interface for basic switch management and setup

24-port Gigabit Stackable Managed Fiber Switch (GE-DSSG-244)

- 24 SFP/mini-GBIC slots - compatible with 1000Base-SX/LX/BX and 100Base-FX SFP transceivers
- 8-ports 10/100/1000Base-T RJ-45 copper, shared with ports 1 to 8
- 2 HDMI-like 10Gbps (full-duplex) stacking ports
- RS-232 DB9 console interface for basic switch management and setup

24-port Gigabit Non-stackable Managed Switch (GE-DSG-244)

- 24-ports 10/100/1000Base-T Gigabit Ethernet RJ-45
- 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 68Gbps 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

Power over Ethernet

(GE-DSSG-244-PoE and NS3601-24P/4S only)

- Complies with IEEE 802.3af Standard
- 220 Watt Power Budget (GE-DSSG-244-POE) 380 Watt Power Budget (NS3601-24P/4S)
- Auto-detects PoE powered devices (PD)
- Provides full-power (15.4W) PoE up to 14 ports (GE-DSSG-244-POE); up to 24 ports (NS3601-24P/4S)
- 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)
  - Per port scheduling
  - PD classification detection
  - Power Supply Over temperature Protection

Link Aggregation

- IEEE 802.3ad LACP (Link Aggregation Control Protocol)
- Up to 12 Trunk groups
- Up to 16 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 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

Reliable and Redundant Stacking Technology (GE-DSSG-244, GE-DSSG-244-POE and NS3601-24P/4S only)

- Hardware stack of up to 16 units
- Up to 384 Gigabit ports
- Single IP address stack management
- Port mirroring across the stack
- Link Aggregation groups that can span multiple switches in a stack
- Hardware learning with MAC table synchronization across stack
- Plug-and-Play connectivity
- 10Gbps (full-duplex) stacking ring bandwidth
- Chain, Ring, and back-to-back mode
- High fault-tolerant redundant design
- Redundant master controller fail-safe design
- Hot-swappable with automatic reconfiguration of replaced unit in the stack

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
- Reset button for system management

Warranty

- 3-year Limited Warranty

ADDITIONAL 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

Power over Ethernet Management
- System PoE Enable/Disable
- PoE Power Budget Control
- PoE Threshold and Event
- Temperature Threshold and Event
- PD Root Schedule Control

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.
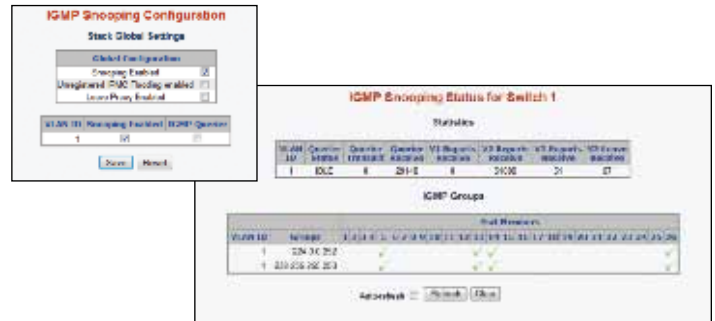
Robust PoE Management

IFS switches provides full 15.4W PoE power (IEEE 802.3af) per assigned port – No port sharing. This assures continuous operation for IP video cameras and other PoE edge devices that require full power. In addition, IFS switches incorporate PoE port circuit protection preventing power interference between ports.

PoE port management, such as enable/disable, priority and power limits port scheduling, total power budget control and over temperature monitoring can be easily programmed and monitored through the built-in Web Services.

High-Reliability and Redundancy Stacking Management

The IFS GigE Stackable Managed Switch Series provides the ability to stack up to 16 switches (for a capacity of up to 384 GigE ports) allowing for a custom built configuration of switch ports in multiples of 24 port increments. The advantage of stackable technology is that it allows management of the stacked group with a single IP address. This helps network managers reduce the number of IP addresses on their network and provides for easier installation instead of connecting and configuring each switch one by one.

Through its high-bandwidth tunneling and stacking technology, these stackable switches give enterprise IT, security integrators, service providers and telecoms flexible control over port density, uplinks and switch stack performance. Stack intelligence and redundancy is also built-in and ensures that the switch stack configuration and data integrity is retained even if one switch or even the master switch in the stack fails. You can even hot-swap switches without disrupting the network. The system will automatically recognize the new switch and automatically reconfigure the new switch in the stack saving a tremendous amount of time for reprogramming.
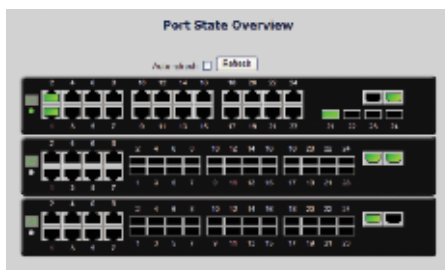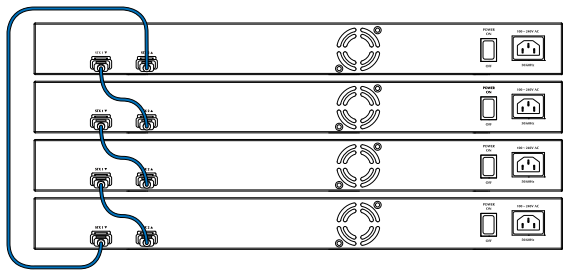
Built-in Diagnostics

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

IFS switches even allow you to test the path between switches within a network assuring the path can handle large video type files. Using ICMP, simply enter the destination IP address and file size and click start.
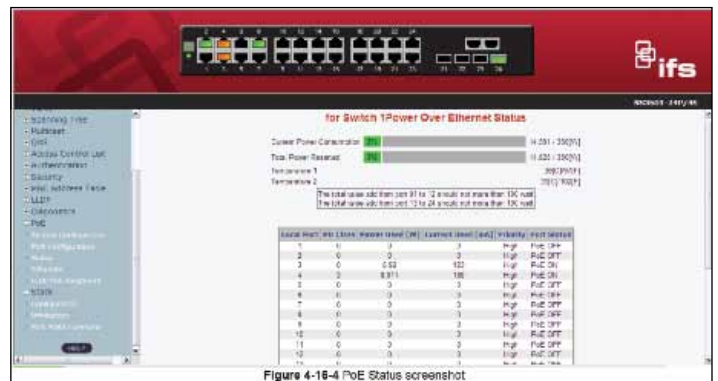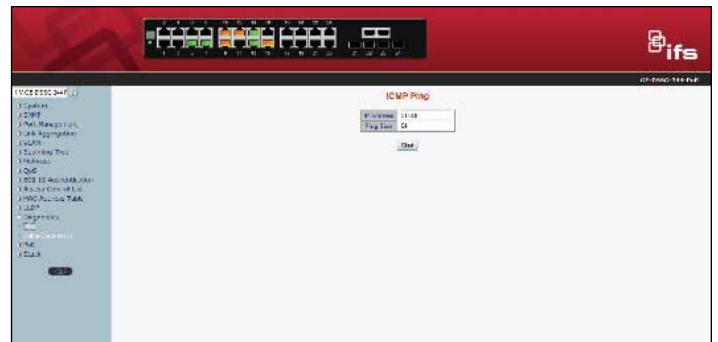
Figure 4-16-4 PoE Status screenshot

24-port Gigabit Backbone Network Switch Specifications

		Standalone	Stackable		
	Part No.	**GE-DSG-244**	**GE-DSSG-244-PoE**	**NS3601-24P/4S**	**GE-DSSG-244**
	Description				
Physical Ports	**10/100/1000Base-T (X) Ports**	RJ-45 (24)	RJ-45 (24) with IEEE 802.3af PoE	RJ-45 (24) with IEEE 802.3af PoE	RJ-45 (8) shared with SFP slots 1 to 8
	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	SFP/Mini-GBIC Slots (4) - Shared with RJ-45 Ports-21 to 24; 1000Base-SX/LX/BX and 100Base-FX SFP transceiver compatible	SFP/Mini-GBIC Slots (4) - Shared with RJ-45 Ports-21 to 24; 1000Base-SX/LX/BX and 100Base-FX SFP transceiver compatible	SFP/Mini-GBIC Slots (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	Store-and-Forward	Store-and-Forward	Store-and-Forward
	Switch Fabric	48Gbps non-blocking	68Gbps non-blocking	68Gbps non-blocking	68Gbps non-blocking
	Switch Throughput	35.7Mbpps@64Bytes	50.595Mpss@64Bytes	50.595Mpss@64Bytes	50.595Mpss@64Bytes
	Mac Address Table	8K entries	8K entries	8K entries	8K entries
	Share Data Buffer	1392 kilobytes	1392 kilobytes	1392 kilobytes	1392 kilobytes
	Jumbo Frame Size	10Kbytes	10Kbytes	10Kbytes	10Kbytes
	Flow Control	IEEE 802.3x Pause Frame for Full-Duplex Back pressure for Half-Duplex	IEEE 802.3x Pause Frame for Full-Duplex Back pressure for Half-Duplex	IEEE 802.3x Pause Frame for Full-Duplex Back pressure for Half-Duplex	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	IGMP (v1/v2/v3) Snooping, up to 255 multicast Groups; IGMP Querier mode support	IGMP (v1/v2/v3) Snooping, up to 255 multicast Groups; IGMP Querier mode support	IGMP (v1/v2/v3) 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 Power over Ethernet–MIB			

24-port Backbone Network Switch Specifications (continued)

		Standalone	Stackable		
	Part No.	**GE-DSG-244**	**GE-DSSG-244-PoE**	**NS3601-24P/4S**	**GE-DSSG-244**
	Description				
Stacking	**Maximum Stack**		16 Switches	16 Switches	16 Switches
	Stacking Interface		HDMI-Like interface (2)	HDMI-Like interface (2)	HDMI-Like interface (2)
	Stacking Bandwidth		10Gbps (Full-Duplex)	10Gbps (Full-Duplex)	10Gbps (Full-Duplex)
	Stacking Topology		Ring / Chain / Back-to-Back stack	Ring / Chain / Back-to-Back stack	Ring / Chain / Back-to-Back stack
Power over Ethernet	**PoE Standard**		IEEE 802.3af	IEEE 802.3af	
	PoE Power Supply Type		End-Span (PSE)	End-Span (PSE)	
	PoE Power Budget		220 Watts	380 Watts	
	Max. number of PD @ 15.4 Watts		14	24	
	Max. number of PD @ 7 Watts		24	24	
	PoE Power Output Per Port		48VDC, 350mA.; 15.4 watts max.	48VDC, 350mA.; 15.4 watts max.	
	Power Pin Assignment		1/2(+), 3/6(-)	1/2(+), 3/6(-)	
LED Indicators & Switch	**Power**	On/Green			
	Stack Master		On/Green	On/Green	On/Green
	Stacking ID Display		7-Segment LED Display (1~9, A~F,0)	7-Segment LED Display (1~9, A~F,0)	7-Segment LED Display (1~9, A~F,0)
	10/100/1000Base-TX Ports	10/100 LNK/ACT - Green	10/100 LNK/ACT - Green; PoE in Use - Amber	10/100 LNK/ACT - Green; PoE in Use - Amber	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	**AC Power Input Voltage**	100 ~ 240VAC, 50 / 60Hz, Auto-sensing			
	Power Consumption (System On)	110V (22.2 Watts); 220V (23 Watts)	110V (29.3 Watts); 220V (30.2 Watts)	110V (29.3 Watts); 220V (30.2 Watts)	110V (15.5 Watts); 220V (16 Watts)
	Power Consumption (Full Load without PoE)	110V (29.3 Watts); 220V (30.2 Watts)	110V (39 Watts); 220V (40 Watts)	110V (39 Watts); 220V (40 Watts)	110V (46 Watts); 220V (45.5 Watts)
	Dimensions (WxDxH); in/cm	17.32 x 7.87 x 1.75 in. (42.99 x 19.99 x 4.45 cm)	17.32 x 11.81 x 1.75 in. (42.99 x 29.99 x 4.45 cm)	17.32 x 11.81 x 1.75 in. (42.99 x 29.99 x 4.45 cm)	17.32 x 7.87 x 1.75 in. (42.99 x 19.99 x 4.45 cm)
	Weight; lbs/kgs	5.93 lbs, 2.69 kgs	9.92 lbs, 4.49 kgs	9.92 lbs, 4.49 kgs	6.61 lbs, 2.99 kgs
Environmental	**Operating Temperature**	0° ~ 50ºC			
	Storage Temperature	-20° ~ 70ºC			
	Relative Humidity	0% to 95% (non-condensing)			
Standards Compliance	**Regulatory Standards**	FCC Part 15 Class A, CE, UL, cUL			
	IEEE Standards	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX/100BASE-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T 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 802.1p Class of service IEEE 802.1Q VLAN Tagging IEEE 802.1x Port Authentication Network Control IEEE 802.1ab LLDP IEEE 802.3af Power over Ethernet (GE-DSSG-244-POE and NS3601-24P/4S)			

Enterprise-class 24-port Gigabit Backbone Network Switches

Ordering Information

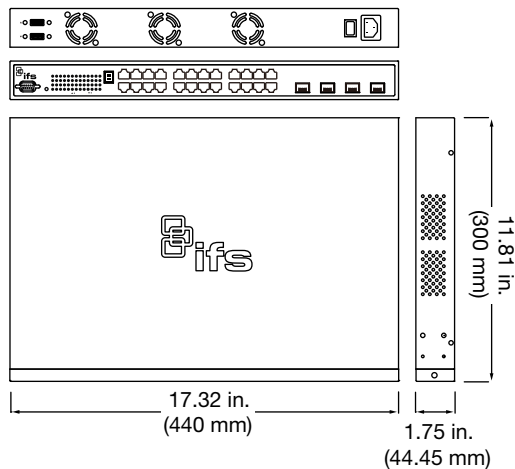|	
NS3601-24P/4S	24-Port Gigabit Stackable Managed Full PoE Switch
GE-DSSG-244-POE	24-Port Gigabit Stackable Managed PoE Switch
GE-DSSG-244	24-Port Gigabit Stackable Managed Fiber Switch
GE-DSG-244	24-Port Gigabit Standalone Managed Switch
Included Accessories	User's Manual CD, Quick Installation Guide, Power Cord, RS-232 Cable, 50cm Stacking Cable (stackable switches only), 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. IFS S20 or S30 series SFPs are recommended. Gigabit SFPs (S30) are recommended for best uplink bandwidth performance.
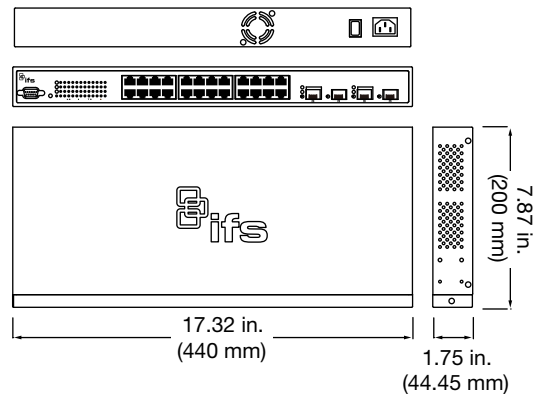
Accessories

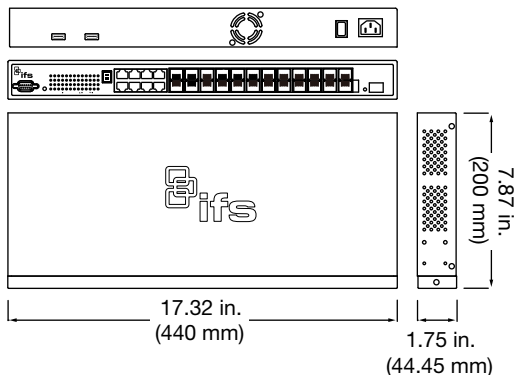|	
SFP	S30 Series
SFP	S20 Series
NS-CBL-50	Switch Stacking Cable - .5 meters (50cm)
NS-CBL-200	Switch Stacking Cable - 2 meters (200cm)

Dimensional Diagram

GE-DSSG-244-PoE
NS3601-24P/4S

11.81 in. (300 mm)

17.32 in. (440 mm)

1.75 in. (44.45 mm)

GE-DSG-244

7.87 in. (200 mm)

17.32 in. (440 mm)

1.75 in. (44.45 mm)

GE-DSSG-244

7.87 in. (200 mm)

17.32 in. (440 mm)

1.75 in. (44.45 mm)

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Specifications subject to change without notice.