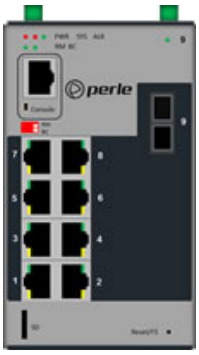
IDS-409G Managed Industrial Ethernet Switch with Gigabit Fiber

perle.com/products/switches/ids-409g-industrial-managed-gigabit-switch.shtml

9 port Compact DIN Rail Switch



- 10/100/1000Base-T (RJ45) ports for Gigabit and Fast Ethernet devices
- 1000Base-X SC/ST fiber ports
- IP Manageability, VLAN and resiliency management
- Digital inputs for generation of alerts
- Compact, corrosion resistant case attaches to a standard DIN Rail
- Redundant dual power input 12/24/48 VDC, 24 VAC
- Out-of-band management via RJ45 or USB serial ports
- Programmable Controller safety and Hazardous Location Certification
- -40 to 75C industrial operating temperature (XT Models)

The **IDS-409G** is a **9 port Managed Ethernet Switch** that can operate in **industrial environments** providing advanced performance and enabling **real-time deterministic network operation**. Choose any combination of **10/100/1000-Base-T Ethernet copper ports** and **1000Base-X fiber ports** to meet the needs of your environment.

- 8 copper, 1 fixed SC/ST fiber port
- 7 copper, 2 fixed SC/ST fiber ports
- 6 copper, 3 fixed SC/ST fiber ports

Utilizing fiber is critical in environments, like industrial plants, where **high levels of electromagnetic interference (EMI)** is a common phenomenon. This interference can cause data corruption over copper-based Ethernet links. However, data transmitted over fiber optic cable is completely immune to this type of noise ensuring optimal data transmission across the plant floor.

With over 82 models, the Perle IDS-409G offers a choice of connectors, fiber types, temperature support and operating distances.

Perle **Industrial-grade Ethernet Switches** are designed to stand up to **extreme temperatures, surges, vibrations**, and **shocks** found in **industrial automation, government, military, oil and gas, mining** and **outdoor applications**.

Simple **Plug and Play** installation to get your Ethernet devices networked immediately is available with Perle's **Fast Setup feature**. The familiar **Command Line Interface (CLI),** via in-band Telnet or the out-band serial console port, will be appreciated by **CCNA** (Cisco Certified Network Associate) and **CCNP** (Cisco Certified Network Professional) trained engineers.

P-Ring, **management VLAN**, **QoS**, **RMON**, **N:1 port mirroring** and **local alert log**, are only a few of the comprehensive management functions supported in the **IDS-409G**. In addition, the switch can be **managed with an IPv6 address**.

These **rugged fan-less switches** that are hardened to provide superior reliability **in -10 to 60°C.** In addition, **every component** on every **industrial (XT) model** has been **designed and tested** to handle operating temperatures between **-40 and 75C**.

All Perle Industrial Ethernet Switches only use **high-end components** from the **leading chip manufacturers** to ensure the highest level of **durability and reliability**. In addition, all units have a corrosion resistance aluminum case and dual redundant power input with reverse polarity and overload protection.

For **over 35 years** Perle has been **designing industrial hardware.** This expertise was used to design the **toughest Ethernet switches on the market** that will keep your system running for years to come.

IDS-409G Industrial Managed DIN Rail Switch Features

Simple deployment	Zero-touch discovery using Dynamic Host Control Protocol (DHCP), Perle's "Fast Setup" for first time installation, provides simple deployment in Ethernet environments

Resiliency	• STP and RSTP protocols for fast recovery. • Perle's P-Ring protocol for fast convergence in ring topologies • Link Standby is a link recovery feature for two links that provides a simple alternative to spanning tree protocols for link redundancy
Manageability	• Web Device Manager, Telnet, SNMP and Perle's PerleView NMS for centralized management • In-band management via RJ45 or USB serial ports • Use an IPv4 or IPv6 address • Removable MicroSD flash for configuration files and firmware backup and restoration
Rugged design for harsh environments	• Corrosion resistant case • Programmable Controller Safety certified • Certified for hazardous locations • Extended industrial temperature models

Reliable operation	• Fan-less, no moving parts
	• Dual power input. Connect to separate power sources for redundancy.
	  ◦ Reverse polarity protection
	  ◦ Overload current protection
	• Handles vibration and shock conditions found in industrial environments

Real-time Ethernet performance	• Fast wire-speed , store and forward switching • Auto-sensing for speed and duplex • Auto-mdi/mdix-crossover works with straight and crossover cables

Performance Features

Port Auto-sensing	Auto-sensing of port speed and auto-negotiation of duplex on all switch ports for optimizing bandwidth
Auto MDI/MDIX	Medium-dependent interface crossover (Auto-MDIX) capability on 10/100 and 10/100/1000 mbps interfaces that enables the interface to automatically detect the required cable type (straight thru or crossover) and to configure the connection appropriately
802.3x flow control	IEEE 802.3x flow control on all ports. (The switch does not initiate pause frames)
Storm Control	Storm control prevents traffic on a LAN from being disrupted by a broadcast, multicast, or unicast storm on one of the physical interfaces. A LAN storm occurs when packets flood the LAN, creating excessive traffic and degrading network performance. Storm Control enables limits to be placed on broadcast, multicast and unicast traffic
Static MAC Addressing	This feature enables the manual configuration of the MAC addresses on a per port basis. Flooding is prevented by retaining MAC entries across a reboot of the switch.
Port Blocking	Port Blocking provides the ability to block the flooding of unknown layer 2 unicast and multicast traffic on an Interface

IPV4 IGMP Snooping	Internet Group Management Protocol (IGMP) constrains the flooding of multicast traffic by dynamically configuring Layer 2 interfaces so that multicast traffic is forwarded to only those interfaces associated with IP multicast devices. IGMPv1, v2, v3, IGMP snooping querier mode, IGMP report suppression, topology change notification and robustness variable features are supported
Port Quick Disconnect	In some network environments, it is desirable to move an Ethernet from one switch port to another and have the device come on-line quickly. The Port Quick Disconnect feature if enabled, provides an immediate age-out of the MAC addresses learned on the port when the port status changes from a link-up to a link-down state
Manageability Features	
Web Device Manager	The Perle Web Device Manager is an embedded Web based application that provides an easy to use browser interface for managing the switch. Unlike competitive products, Java applet technology is not required or used
Command Line Interface (CLI)	A familiar text-based Command Line Interface that is based on accepted industry standard syntax and structure. Ideal for CCNA and CCNP trained engineers, this interface is available via in-band Telnet or the out-band serial console port
SNMP	Manage the switch with an snmp compatible management station that is running platforms such as HP Openview or Perle's PerleVIEW NMS. SNMP V1 and V2C
PerleVIEW	PerleVIEW is Perle's SNMP-based network management system that provides a view of the network with a large scale of Perle networking devices.
IPv6	Manage with an IPv4 or IPV6 address
DHCP Client Auto-Configuration	Automates configuration of switch information such as IP address, default gateway, hostname and Domain Name System (DNS) as well as TFTP server names. Firmware and configuration file locations are provided through options 54, 66, 67, 125 and 150
DHCP Relay	DHCP Relay is used for forwarding requests from DHCP clients when they are not on the same physical subnet. As a DHCP relay agent the switch operates as a Layer 3 device that forwards DHCP packets between clients and servers.
DHCP Option 82 Insertion	Normally used in metro or large enterprise deployments DHCP Option 82 insertion is used to provide additional information on "physical attachment" of the client. As per RFC 3046, option 82 enables additional pre-defined information to be inserted into the DHCP request packet (for DHCP Servers that support this option)
LLDP	LLDP-Link Layer Discovery Protocol as per IEEE 802.1AB is a neighbor discovery protocol that is used for network devices to advertise information about themselves to other devices on the network. This protocol runs over the data-link layer, which allows two systems running different network layer protocols to learn about each other (via TLVs – Type-Length-Value)
File Download	Firmware can be transferred via TFTP, HTTP or via insertion of a microSD card. Text-based files that can be created or edited by common text editors.
Availability and Redundancy Features	
Spanning Tree Protocol (STP)	IEEE 802.1D now incorporated in IEEE 802.1Q-2014, STP prevents bridge loops and the broadcast radiation that results from them.
Rapid Spanning Tree Protocol (RSTP)	Interoperable with STP, RSTP (IEEE 802.1w) takes advantage of point-to-point wiring and provides rapid convergence of the spanning tree. Reconfiguration of the spanning tree can occur in less than 1 second
P-Ring	Perle's Ring Protocol provides resilient operation of a network made up of managed switches in a ring topology. The implementation prevents a switch loop scenario and also enables communication within the ring if a failure occurs somewhere in the ring.

Link Standby	A link recovery feature using a primary and backup link. Provides a simple alternative to spanning tree protocols for link redundancy
VLAN Features	
VLAN Range	Up to 256 VLANS across a VLAN ID range of 1 to 4000
VLAN Interfaces	Perle switches provide the ability to configure management VLAN interfaces. This enables network administrators to access the switch's management interface from separate VLAN networks
Quality of Service (QoS) and Class of Service (CoS) Features	
Classification	IP ToS/DSCP and IEEE 802.1p CoS
Congestion Avoidance	Weighted Fair Queuing or Strict Queuing
Egress Queues and scheduling	• 4 traffic class queues per port • output queue mapping • DSCP to output queue mapping
Monitoring Features	
Port Mirroring	N:1 Port Mirroring is a method of monitoring network traffic. With port mirroring enabled, the switch sends a copy of one or more ports to a predefined destination port. Selection of Transmit, Receive frames or both can be made
RMON	RMON statistics provided for statistics, history, alarms and events for network monitoring and traffic analysis
Syslog	Facility for logging systems messages to an external SYSLOG server
Alert Log	Facility for logging systems messages locally
Traceroute	Layer 2 traceroute to identify the path that a frame takes from source to destination
Power Supply Monitoring	Provides the status of power supplies of the switch
Alarm Processing	The switch can monitor global switch conditions as well as individual ports. These alarms can be configured to send messages to ; • an internal log file • external Syslog server • SNMP trap server • An external alarm device such as a bell, light or other signaling device via the switch's built-in dry contact alarm relay Global Status Monitoring Alarms • Dual power supply alarm Port Status Monitoring Alarms • Link Fault Alarm (IE loss of signal) • Port not forwarding alarm • Port not operating alarm (failure upon start up tests) • FCS Bit error rate alarm

Alarm Relay	When enabled, energizes the built-alarm relay triggering an external alarm circuit such as a bell, light or other signaling device according to alarm conditions set

Management and Standards

IEEE Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-T(X) and 100Base-X IEEE 802.3ab for 1000Base-T EEE 802.3z for 1000BaseX IEEE 802.3x for Flow Control IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1w for Rapid STP IEEE 802.1Q for VLAN Tagging IEEE 802.1p for Class of Service IEEE 802.3ad for Port Trunk with LACP IEEE 802.1AB LLDP
SNMP MIB Objects	IEEE8021-PAE-MIB NTPv4-MIB IEEE8021-SPANNING-TREE-MIB SYSAPPL-MIB LLDP-EXT-MED-MIB SNMP-COMMUNITY-MIB LLDP-EXT-MED-MIB IGMP-STD-MIB IEEE8021-MSTP-MIB Q-BRIDGE-MIB LLDP-EXT-DOT3-MIB IF-MIB RSTP-MIB DIFFSERV-DSCP-TC LLDP-EXT-DOT1-MIB IEEE8021-TC-MIB LLDP-MIB RMON2-MIB ENTITY-MIB P-BRIDGE-MIB PERLE-LOGIN-MIB PERLE-ALERT-MIB PERLE-IP-SSH-MIB PERLE-IP-PROTOCOLS-MIB PERLE-USER-MIB PERLE-SMI PERLE-MAC-NOTIFICATION-MIB PERLE-SYSINFO-MIB PERLE-LINKSTANDBY-MIB PERLE-AAA-MIB perle-AAA.MIB PERLE-IPV6-MIB PERLE-LOGGING-MIB PERLE-VLAN-MIB PERLE-IF-MIB PERLE-ENTITY-VENDORTYPE-OID-MIB PERLE-ERR-DISABLE-MIB PERLE-SWITCH-PLATFORM-MIB PERLE-ENVMON-MIB PERLE-TIME-MIB PERLE-PTP-MIB PERLE-P-RING-MIB PERLE-SNMP-MIB PERLE-FILE-TRANSFER-MIB PERLE-SWITCH-GLOBAL-MIB PERLE-BOOT-MIB PERLE-PRODUCTS-MIB PERLE-BANDWIDTH-CONTROL-MIB PERLE-IP-TELNET-MIB PERLE-GVRP-MIB PERLE-PORT-SECURITY-MIB PERLE-DHCP-SERVER-MIB

PERLE-GARP-MIB
PERLE-ARCHIVE-MIB
PERLE-NTP-MIB
PERLE-SSL-MIB
PERLE-IGMP-MIB
PERLE-ACL-MIB
PERLE-POE-MIB
PERLE-RELOAD-MIB
PERLE-ENTITY-ALARM-MIB
PERLE-IPV6-NEIGHBOR-MIB
PERLE-DOT1X-AUTH-MIB
PERLE-TC
PERLE-DHCP-CLIENT-MIB
PERLE-LINE-MIB
PERLE-ARP-MIB
PERLE-GMRP-MIB
PERLE-MLD-MIB
PERLE-IP-HTTP-MIB
PERLE-PORT-MONITOR-MIB
PERLE-SpTreeExtensions-MIB
PERLE-IP-MIB

Hardware Features & Technical Specifications: IDS-409G Industrial Managed DIN Rail Switch

	Power
Dual Power Input	Both inputs draw power simultaneously. If one power source fails, the other live source can, acting as a backup, supply enough power to meet the operational needs of the switch. 12/24/48 VDC Nominal. (9.6 to 60 VDC) 24 VAC Nominal (18 to 30 VAC)
Power Connector	4-Pin Removable Terminal Block. Grounding screw on metal chassis
Maximum Current Consumption @24 vDC	1 Fiber port = 0.73 amps 2 Fiber ports = 0.69 amps 3 Fiber ports = 0.66 amps
Maximum Power Consumption @24 vDC	1 Fiber port = 17.5 watts 2 Fiber ports = 16.6 watts 3 Fiber ports = 15.7 watts
Overload Current Protection	Fused overload current protection
Reverse polarity protection	The positive and negative inputs can be reversed providing safe and simple power connectivity.
	Access Ports
RJ45	6,7 or 8 shielded RJ45 ports for 10/100/1000Base-T up to 100 meters (328 ft) Auto-negotiation Auto-MDI/MDIX-crossover for use with either crossover over straight-through cable types Ethernet isolation 1500 V
RJ45 Serial Console port	RJ45 DTE Optional rolled and straight thru RJ45 cables and DB adapters are available
USB Serial Console port	MicroUSB Type B female port for serial console management. Used as an alternative port for out of band management connections

Digital Inputs	Two Digital Inputs are provided that can be used for generation of alarms (SNMP trap, energizing of on-board Alarm Relay,etc)
Gigabit Fiber port	1, 2 or 3 1000Base-x fiber port models Duplex SC or ST connector • Multimode 50/125 or 62.5/125 micron fiber cable • Single mode 9/125 micron fiber cable Simplex (BIDI, single strand) SC connector • Multimode 50/125 or 62.5/125 micron fiber cable • Single mode 9/125 micron fiber cable PC and UPC type patch cords supported.

Fiber Port Specs

Fiber Type	Transmit (dBm)		Receive (dBm)		Power Budget (dB)	Wavelength (nm)	IEEE	Core Size (um)	Modal Bandwidth (MHz* Km)	Maximum Operating Distance
	Min	Max	Min	Max						
MMF (Duplex SC/ST)	-9.5	-4.0	-17.0	-3.0	7.5	850	1000Base-SX	62.5	160	220 m (722 ft)
								62.5	200	275 m (902 ft)
								50	400	500 m (1,640 ft)
								50	500	550 m (1,804 ft)
								50	2000	1000 m (3281 ft)
MMF (Duplex SC/ST)	-6.0	0.0	-17.0	0.0	11.0	1310	1000Base-LX	62.5	160	2 km (1.2 mi)
								50	500	1 km (3280ft)
MMF (simplex SC)	-10.0	-4.0	-17.0	-3.0	7.0	1310 / 1550 1550 / 1310	1000Base-BX-U 1000Base-BX-D	62.5 50	500	500 m (1,640 ft)
SMF (Duplex SC/ST)	-9.5	-3.0	-20.0	-3.0	10.5	1310	1000Base-LX/LH	9	**	10 km (6.2 mi)
SMF (Simplex SC)	-9.0	-3.0	-20.0	-3.0	11.0	1310 / 1490 1490 / 1310	1000Base-BX-U 1000Base-BX-D	9	**	10 km (6.2 mi)
SMF (Simplex SC)	-8.0	-3.0	-22.0	-3.0	14.0	1310 / 1490 1490 / 1310	1000Base-BX-U 1000Base-BX-D	9	**	20 km (12.4 mi)

SMF (Duplex SC/ST)	-2.0	2.0	-23.0	-3.0	21.0	1310	1000Base-EX	9	**	40 km (24.9 mi)
SMF (Simplex SC)	-3.0	2.0	-23.0	-3.0	20.0	1310 / 1490 1490 / 1310	1000Base-BX-U 1000Base-BX-D	9	**	40 km (24.9 mi)
SMF (Duplex SC/ST)	-2.0	5.0	-23.0	-3.0	21.0	1550	1000Base-ZX	9	**	70 km (43 mi)
SMF (Simplex SC)	-2.0	3.0	-26.0	-3.0	24.0	1510 / 1590 1590 / 1510	1000Base-BX-U 1000Base-BX-D	9	**	80 km (50 mi)
SMF (Duplex SC/ST)	0.0	5.0	-32.0	-9.0	32.0	1550	1000Base-ZX	9	**	120 km (74.6 mi)
SMF (Simplex SC)	-3.0	2.0	-34.0	-9.0	31.0	1510 / 1590 1590 / 1510	1000Base-BX-U 1000Base-BX-D	9	**	120 km (74.6 mi)
SMF (Duplex SC/ST)	2.0	5.0	-34.0	-9.0	36.0	1550	1000Base-ZX	9	**	160 km (100 mi)

* 1db/km multimode fiber cable
** as per ITU-T G.652 SMF specifications

Alarms

Alarm Relay	• NC (Normally Closed) or NO (Normally Open) dry contact. • 1A @ 24V

Switch Properties

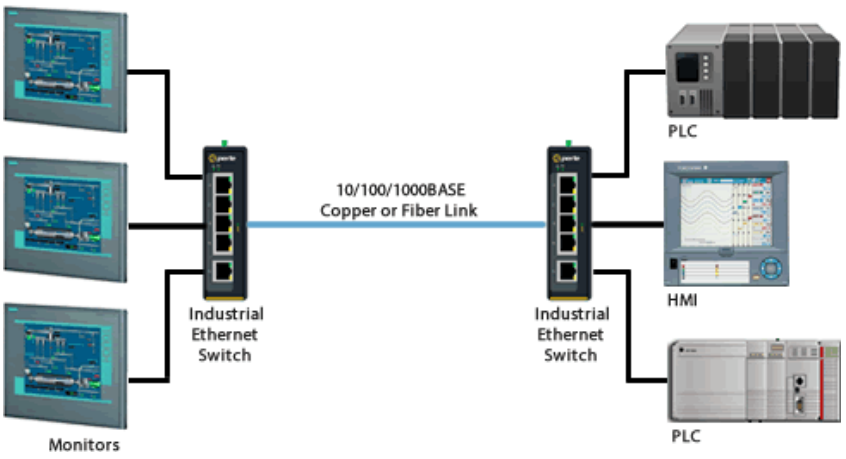
Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.3z 1000BASE-X IEEE 802.3x for Flow Control
Processing Type	Store and Forward
MAC Address Table Size	8K
VLAN ID range	1 to 4000
IGMP groups	1024
Packet Buffer Memory	1 Mbit

Indicators	
Power	This LED is turned on when the appropriate level of voltage is applied to one or both of the power inputs
System	Indicates whether the switch O/S is operating normally
RJ45 Ethernet	These integrated colored LEDs indicate link, activity and speed for each port.
Fiber Link	Fiber link LED indicates Link and Data Activity
Alarm	The alarm LED (Red) will be turned on under alarm conditions
P-Ring Master LED	Status of the P-Ring Master
Backup Network Coupling	Indicates whether or not the “Backup Network Coupling” feature is enabled (Redundant links connecting two P-Ring networks)
External Configuration DIP Switches	
S2	When enabled, designates this switch as the Ring Master
S1	Activate Backup Coupling between 2 ring networks
Environmental Specifications	
MTBF	*Calculation model based on MIL-HDBK-217-FN2 @ 30 °C*
Operating Temperature Ranges	Standard temperature models (Std): -10° C to 60° C (14° F to 140° F). XT Industrial extended temperature models (Ind) : -40° C to 75° C (-40 F to 167° F)
Storage Temperature Range	Minimum range of -25° C to 70° C (-13° F to 158° F). -40 C to 85 C (-40 F to 185 F) for industrial extended temperature models
Operating Humidity Range	5% to 90% non-condensing
Storage Humidity Range	5% to 95% non-condensing
Maximum Heat Output	1 Fiber port = 59.7 Btu/hr 2 Fiber ports = 56.7 Btu/hr 3 Fiber ports = 53.7 Btu/hr
Operating Altitude	Up to 3,048 meters (10,000 feet)
Chassis	Metal with an IP20 ingress protection rating
Din Rail Mountable	DIN Rail attachment included. Mounts to standard 35 mm DIN rail in accordance with DIN EN 60175. Removable to accommodate optional Panel/Wall mount kit
Product Weight and Dimensions	
Weight	1.5 kg
Dimensions	75 x 130 x 121mm
Packaging	
Shipping Weight	2.0 kg
Shipping Dimensions	170 x 260 x 70 mm

Standards and Certifications	
Safety	UL 60950-1 IEC 60950-1:2005+A1:2009 and EN 60950-1:2006+A11:2009+A1:2010+A12:2011 CE Mark UL 61010-1 and UL 61010-2-201 (Standard for Safety for Programmable Controllers)
Emissions	FCC 47 Part 15 Class A CISPR 22:2008/EN55022:2010 (Class A) CISPR 24:2010/EN 55024:2010
EMC and Immunity	• CISPR 24:2010/EN 55024:2010 • IEC/EN 61000-4-2 (ESD) : Contact discharge +/- 4kv, Air discharge +/- 8kv • IEC/EN 61000-4-3 (RS) : 80mhz to 1Ghz ; 10v/m, 1.4Gkz to 2.0ghz ; 5 v/m, 2.0ghz to 2.7 ghz ; 5 v/m • IEC/EN 61000-4-4 (EFT) : DC power line +/- 2kv, data line +/- 1kv • IEC/EN 61000-4-5 (Surge) : DC power line, Line/Line +/- 1kv, Line/Earth +/- 2kv, data line /earth +/- 2kv • IEC/EN 61000-4-6 (CS) :150khz-80Mhz 10vrms • IEC/EN 61000-4-8 (Magnetic Field) :30 A/M • IEC/EN 61000-6-2 (General Immunity in Industrial Environments)
Industrial Safety	UL 61010-1 and UL 61010-2-201 (Standard for Safety for Programmable Controllers). Formerly known as UL508 (Safety standard for Industrial Control Equipment)
Hazardous Locations (Hazloc)	ANSI/ISA 12.12.01, Class 1 Division 2 Groups A-D (formerly known as UL 1604) * ATEX Class 1 Zone 2 *
Environmental	Reach, RoHS and WEEE Compliant
Other	ECCN: 5A991
	HTSUS Number: 8517.62.0050
	5 year Warranty
Contents Shipped	• Industrial Ethernet Switch with DIN Rail attachment • Terminal block • Installation guide

* *pending*

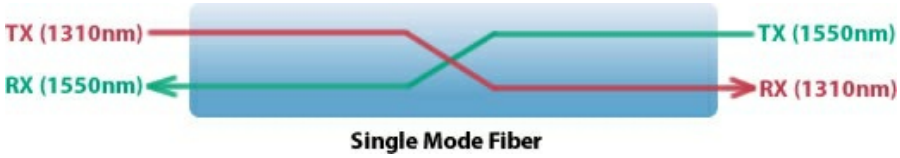
IDS-409G Industrial Managed DIN Rail Switch



Single Mode / Single Strand (WDM) Fiber

Connecting devices over a single fiber strand (also referred to as "Bi-Directional" BiDi or Simplex)

To reduce costs, or where there are limits on available fiber, Wavelength-Division Multiplexing (WDM) technology may be utilized. WDM uses separate transmit and receive frequencies to communicate on a single fiber strand. WDM technology relies on the fact that optical fibers can carry many wavelengths of light simultaneously without interaction between each wavelength. Thus, a single fiber can carry many separate wavelength signals or channels simultaneously. WDM systems are divided into different wavelength patterns, conventional/coarse (CWDM) and dense (DWDM).



When Single Strand fiber is used, you will need an **"Up"** side and a **"Down"** side when interconnecting fiber devices.

Perle offers a wide variety of Single Fiber ("Up/Down") Ethernet Switches and Media Converters for use with single strand of fiber.

Select a Model to obtain a Part Number – IDS-409G

Std = Standard Temperature models: -10° C to 60° C (14° F to 140° F).
Ind = Industrial Extended Temperature Models: -40° C to 75° C (-40 F to 167° F)

			Duplex Fiber								
				Transmit (dBm)		Receive (dBm)					
Model	Temp	10/100/1000Base-T RJ45	Fiber Connectors	Min	Max	Min	Max	Power Budget (dB)	Wavelength (nm)	Fiber Type	Operating Distance
IDS-409G-CMD05	Std	8	1 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
IDS-409G-CMD05-XT	Ind	8	1 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)

IDS-409G-TMD05	Std	8	1 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
IDS-409G-TMD05-XT	Ind	8	1 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
IDS-409G-CMD2	Std	8	1 x Duplex SC	-6.0	0.0	-17.0	0.0	11.0	1310	MMF	2 km (1.2 mi)
IDS-409G-TMD2	Std	8	1 x Duplex ST	-6.0	0.0	-17.0	0.0	11.0	1310	MMF	2 km (1.2 mi)
IDS-409G-CSD10	Std	8	1 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G-CSD10-XT	Ind	8	1 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G-TSD10	Std	8	1 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G-TSD10-XT	Ind	8	1 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G-CSD40	Std	8	1 x Duplex SC	-2.0	2.0	-23.0	-3.0	21.0	1310	SMF	40 km (24.9 mi)
IDS-409G-TSD40	Std	8	1 x Duplex ST	-2.0	2.0	-23.0	-3.0	21.0	1310	SMF	40 km (24.9 mi)
IDS-409G-CSD70	Std	8	1 x Duplex SC	-2.0	5.0	-23.0	-3.0	21.0	1550	SMF	70 km (43 mi)
IDS-409G-TSD70	Std	8	1 x Duplex ST	-2.0	5.0	-23.0	-3.0	21.0	1550	SMF	70 km (43 mi)
IDS-409G-CSD120	Std	8	1 x Duplex SC	0.0	5.0	-32.0	-9.0	32.0	1550	SMF	120 km (74.6 mi)
IDS-409G-TSD120	Std	8	1 x Duplex ST	0.0	5.0	-32.0	-9.0	32.0	1550	SMF	120 km (74.6 mi)
IDS-409G-CSD160	Std	8	1 x Duplex SC	2.0	5.0	-34.0	-9.0	36.0	1550	SMF	160 km (100 mi)

IDS-409G-TSD160	Std	8	1 x Duplex ST	2.0	5.0	-34.0	-9.0	36.0	1550	SMF	160 km (100 mi)
IDS-409G2-C2MD05	Std	7	2 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
IDS-409G2-C2MD05-XT	Ind	7	2 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
IDS-409G2-T2MD05	Std	7	2 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
IDS-409G2-T2MD05-XT	Ind	7	2 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
IDS-409G2-C2MD2	Std	7	2 x Duplex SC	-6.0	0.0	-17.0	0.0	11.0	1310	MMF	2 km (1.2 mi)
IDS-409G2-T2MD2	Std	7	2 x Duplex ST	-6.0	0.0	-17.0	0.0	11.0	1310	MMF	2 km (1.2 mi)
IDS-409G2-C2SD10	Std	7	2 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G2-C2SD10-XT	Ind	7	2 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G2-T2SD10	Std	7	2 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G2-T2SD10-XT	Ind	7	2 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G3-C2MD05-SD10	Std	6	2 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			1 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G3-C2MD05-SD10-XT	Ind	6	2 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			1 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G3-T2MD05-SD10	Std	6	2 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			1 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)

IDS-409G3-T2MD05-SD10-XT	Ind	6	2 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			1 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G3-C2MD05-SD40	Std	6	2 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			1 x Duplex SC	-2.0	2.0	-23.0	-3.0	21.0	1310	SMF	40 km (24.9 mi)
IDS-409G3-T2MD05-SD40	Std	6	2 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			1 x Duplex ST	-2.0	2.0	-23.0	-3.0	21.0	1310	SMF	40 km (24.9 mi)
IDS-409G3-C2MD05-SD70	Std	6	2 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			1 x Duplex SC	-2.0	5.0	-23.0	-3.0	21.0	1550	SMF	70 km (43 mi)
IDS-409G3-T2MD05-SD70	Std	6	2 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			1 x Duplex ST	-2.0	5.0	-23.0	-3.0	21.0	1550	SMF	70 km (43 mi)
IDS-409G3-C2MD05-SD120	Std	6	2 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			1 x Duplex SC	0.0	5.0	-32.0	-9.0	32.0	1550	SMF	120 km (74.6 mi)
IDS-409G3-T2MD05-SD120	Std	6	2 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			1 x Duplex ST	0.0	5.0	-32.0	-9.0	32.0	1550	SMF	120 km (74.6 mi)
IDS-409G3-C2MD05-SD160	Std	6	2 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			1 x Duplex SC	2.0	5.0	-34.0	-9.0	36.0	1550	SMF	160 km (100 mi)
IDS-409G3-T2MD05-SD160	Std	6	2 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			1 x Duplex ST	2.0	5.0	-34.0	-9.0	36.0	1550	SMF	160 km (100 mi)
IDS-409G3-C2SD10-MD05	Std	6	1 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			2 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)

IDS-409G3-C2SD10-MD05-XT	Ind	6	1 x Duplex SC	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			2 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G3-T2SD10-MD05	Std	6	1 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			2 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G3-T2SD10-MD05-XT	Ind	6	1 x Duplex ST	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	550 m (1,804 ft)
			2 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G3-C2SD10-SD40	Std	6	2 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
			1 x Duplex SC	-2.0	2.0	-23.0	-3.0	21.0	1310	SMF	40 km (24.9 mi)
IDS-409G3-T2SD10-SD40	Std	6	2 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
			1 x Duplex ST	-2.0	2.0	-23.0	-3.0	21.0	1310	SMF	40 km (24.9 mi)
IDS-409G3-C2SD10-SD70	Std	6	2 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
			1 x Duplex SC	-2.0	5.0	-23.0	-3.0	21.0	1550	SMF	70 km (43 mi)
IDS-409G3-T2SD10-SD70	Std	6	2 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
			1 x Duplex ST	-2.0	5.0	-23.0	-3.0	21.0	1550	SMF	70 km (43 mi)
IDS-409G3-C2SD10-SD120	Std	6	2 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
			1 x Duplex SC	0.0	5.0	-32.0	-9.0	32.0	1550	SMF	120 km (74.6 mi)
IDS-409G3-T2SD10-SD120	Std	6	2 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
			1 x Duplex ST	0.0	5.0	-32.0	-9.0	32.0	1550	SMF	120 km (74.6 mi)
IDS-409G3-C2SD10-SD160	Std	6	2 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
IDS-409G3-C2SD10-SD160	Std	6	2 x Duplex SC	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)

			1 x Duplex SC	2.0	5.0	-34.0	-9.0	36.0	1550	SMF	160 km (100 mi)
IDS-409G3-T2SD10-SD160	Std	6	2 x Duplex ST	-9.5	-3.0	-20.0	-3.0	10.5	1310	SMF	10 km (6.2 mi)
			1 x Duplex ST	2.0	5.0	-34.0	-9.0	36.0	1550	SMF	160 km (100 mi)

Single Fiber (Simplex / BiDi) Models (Recommended use in pairs)

			Simplex (BiDi) Fiber							
				Transmit (dBm)		Receive (dBm)				
Model	Temp	10/100/1000Base-T RJ45	Fiber Connector	Min	Max	Min	Max	Power Budget (dB)	Wavelength (nm) TX / RX	Fiber Type	Operating Distance
IDS-409G-CMS05U	Std	8	1 x Simplex SC	-10.0	-4.0	-17.0	-3.0	7.0	1550 / 1310	MMF	500 m (1,640 ft)
IDS-409G-CMS05D	Std	8	1 x Simplex SC	-9.5	-4.0	-17.0	-3.0	7.5	1550 / 1310	MMF	500 m (1,640 ft)
IDS-409G-CSS10U	Std	8	1 x Simplex SC	-9.0	-3.0	-20.0	-3.0	11.0	1310 / 1490	SMF	10 km (6.2 mi)
IDS-409G-CSS10D	Std	8	1 x Simplex SC	-9.0	-3.0	-20.0	-3.0	11.0	1490 / 1310	SMF	10 km (6.2 mi)
IDS-409G-CSS10U-XT	Ind	8	1 x Simplex SC	-9.0	-3.0	-20.0	-3.0	11.0	1310 / 1490	SMF	10 km (6.2 mi)
IDS-409G-CSS10D-XT	Ind	8	1 x Simplex SC	-9.0	-3.0	-20.0	-3.0	11.0	1490 / 1310	SMF	10 km (6.2 mi)
IDS-409G-CSS20U	Std	8	1 x Simplex SC	-8.0	-3.0	-22.0	-3.0	14.0	1310 / 1490	SMF	20 km (12.4 mi)
IDS-409G-CSS20D	Std	8	1 x Simplex SC	-8.0	-3.0	-22.0	-3.0	14.0	1490 / 1310	SMF	20 km (12.4 mi)
IDS-409G-CSS40U	Std	8	1 x Simplex SC	-3.0	2.0	-23.0	-3.0	20.0	1310 / 1490	SMF	40 km (24.9 mi)
IDS-409G-CSS40D	Std	8	1 x Simplex SC	-3.0	2.0	-23.0	-3.0	20.0	1490 / 1310	SMF	40 km (24.9 mi)

IDS-409G-CSS80U	Std	8	1 x Simplex SC	-2.0	3.0	-26.0	-3.0	24.0	1510 / 1590	SMF	80 km (50 mi)
IDS-409G-CSS80D	Std	8	1 x Simplex SC	-2.0	3.0	-26.0	-3.0	24.0	1590 / 1510	SMF	80 km (50 mi)
IDS-409G-CSS120U	Std	8	1 x Simplex SC	-3.0	2.0	-34.0	-9.0	31.0	1510 / 1590	SMF	120 km (74.6 mi)
IDS-409G-CSS120D	Std	8	1 x Simplex SC	-3.0	2.0	-34.0	-9.0	31.0	1590 / 1510	SMF	120 km (74.6 mi)

Industrial Ethernet Switch Accessories

Panel Mount kit PM3	Brackets for attaching 30 to 75 mm wide Perle IDS industrial switches inside a control panel or to a wall for wall.
Rack Mount Kit RM4U	Bracket for mounting Perle DIN Rail switches in a standard 19” rack. Occupies “4U” of vertical rack space. 275 mm (10 inches) deep
DIN Rail 24V Power Supply	IDPS-24-40-XT - DIN-Rail 24 VDC, 40Watt power supply with universal 85 to 264 VAC or 120-370 VDC input, -20 to 70°C extended operating temperature. Power Supply Specifications.
DBA0020C	RJ-45F to DB-9F crossover (DTE) adapter for Perle serial console ports with Sun/Cisco pinout. #1100300-10