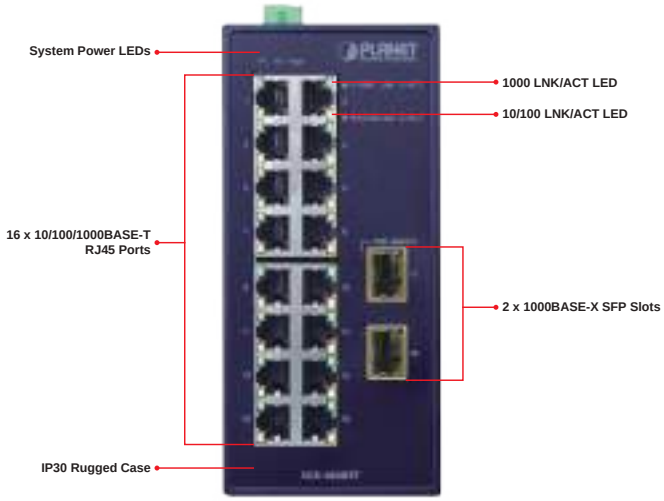
Industrial 16-Port 10/100/1000T + 2-Port 1000X SFP Ethernet Switch

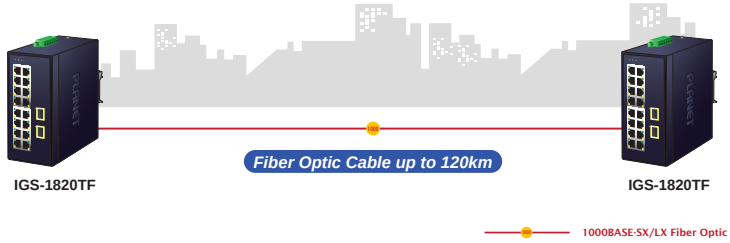
Reliable Industrial Ethernet Networks with Plug and Play Configuration

PLANET's new IGS-1820TF comes with high-density **16 10/100/1000BASE-T ports, 2 1000BASE-X SFP interfaces and redundant power system**, it's designed for heavy industrial demanding environments. Though it includes robust features designed for industrial Ethernet networks, its Plug and Play makes configuration easy. With the IP30-rated rugged but compact-sized case, it can operate stably under the temperature range from -40 to 75 degrees C and can be installed in any difficult environment without space limitation.



Long-distance Fiber Uplink for Extension the Environment

The two additional SFP slots built in the IGS-1820TF support 1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber transceivers to uplink to backbone switch in long distance. The distance can be extended from 550 meters to 2 kilometers (multi-mode fiber) and up to 120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.



Physical Port

- 16 10/100/1000BASE-T RJ45 ports with auto MDI/MDI-X function
- 2 SFP interfaces, supporting 1000BASE-X SFP transceiver

Layer 2 Features

- Supports auto-negotiation and 10/100/1000Mbps half/full duplex mode
- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- Complies with IEEE 802.3az Energy Efficient Ethernet (EEE)
- IEEE 802.1p CoS
- Supports 8K MAC address
- Automatic address learning and address aging

Industrial Case and Installation

- IP30 metal case
- DIN-rail and wall-mount designs
- 12 to 48V DC, redundant power with reverse polarity protection
- 24V AC power input
- Supports 6000 VDC Ethernet ESD protection
- -40 to 75 degrees C operating temperature
- Free fall, shock-proof and vibration-proof for industries

Environmentally Hardened Design

With the IP30-rated rugged metal case, PLANET IGS-1820TF provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curbside traffic control cabinets. Being able to operate under the temperature range from **-40 to 75 degrees C**, the IGS-1820TF can be placed in almost any difficult environment. The IGS-1820TF also allows either DIN-rail or wall mounting for efficient use of cabinet space.

Robust Protection

The IGS-1820TF provides a contact discharge of ±6KV DC and air discharge of ±6KV DC for Ethernet ESD protection. It also supports ±6KV surge immunity to improve product stability and protects users' networks from devastating ESD attacks, making sure the flow of operation does not fluctuate.

Energy Savings

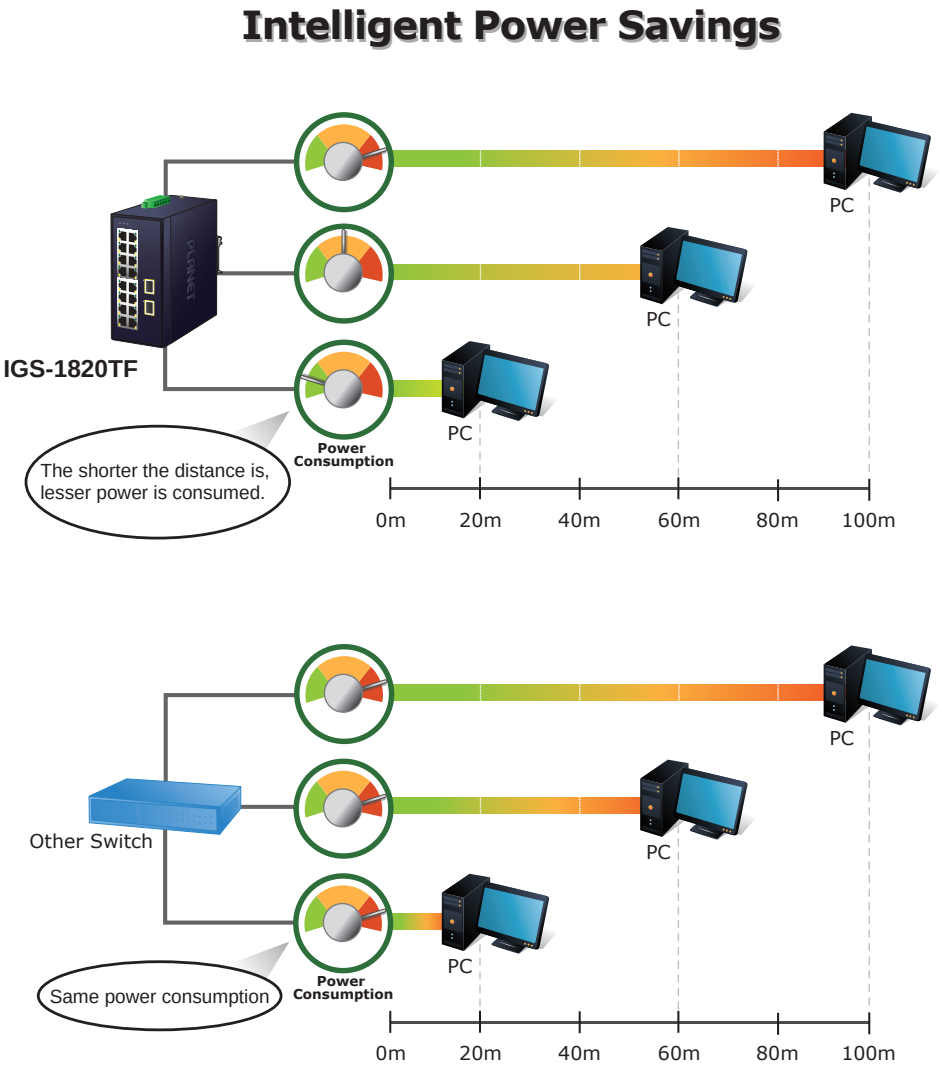
The IGS-1820TF, integrated with advanced green networking technologies and IEEE 802.3az Energy Efficient Ethernet (EEE) protocol based power savings, is able to provide power savings of up to 50% but maintain high performance efficiently.

■ Link Down power savings

The Link Down power savings goes beyond IEEE specifications to automatically lower power consumption for a given port when it is not linked. With the Link Down power saving technology, the IGS-1820TF will automatically adjust power usage of the ports that are shut down or not connected to network device.

■ Intelligent power scale based on cable length

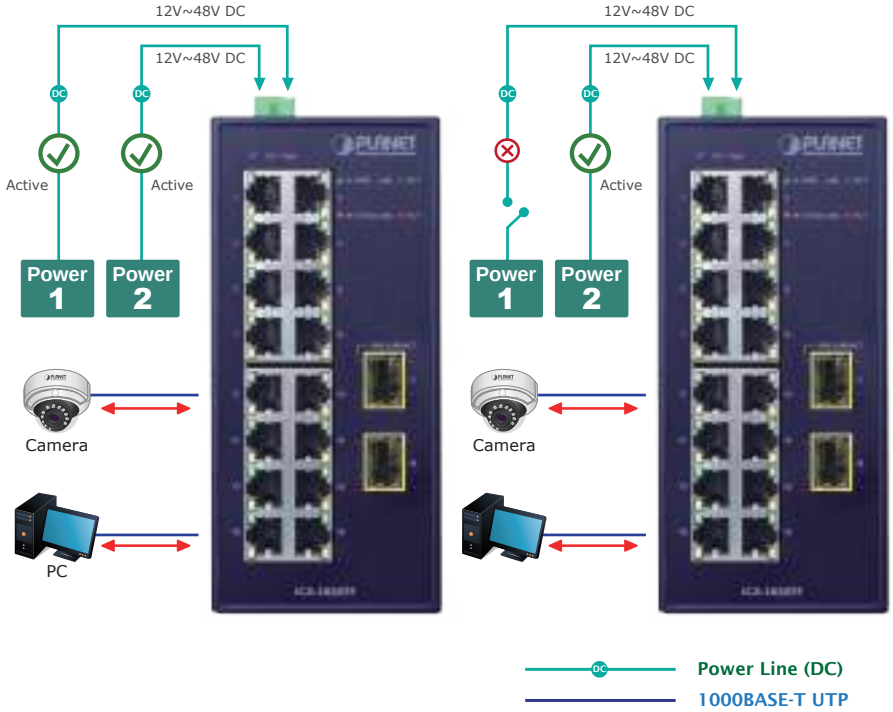
Intelligent power scale is an intelligent algorithm that actively determines the appropriate power level based on cable length. When the IGS-1820TF is connected with Ethernet cable shorter than 20m, a device can obtain maximum power savings because the IGS-1820TF would automatically detect the Ethernet cable length and diminish power usage. The connected device can substantially reduce the overall power consumption, which makes a significant contribution to energy savings.



Dual Power Input for High Availability Network System

The IGS-1820TF features a strong dual power input system with wide-ranging voltages (12V~48V DC or 24V AC) incorporated into customer's automation network to enhance system reliability and uptime. In the example below, when power supply 1 fails to work, the hardware failover function will be activated automatically to keep powering the IGS-1820TF via power supply 2 alternatively without any loss of operation.

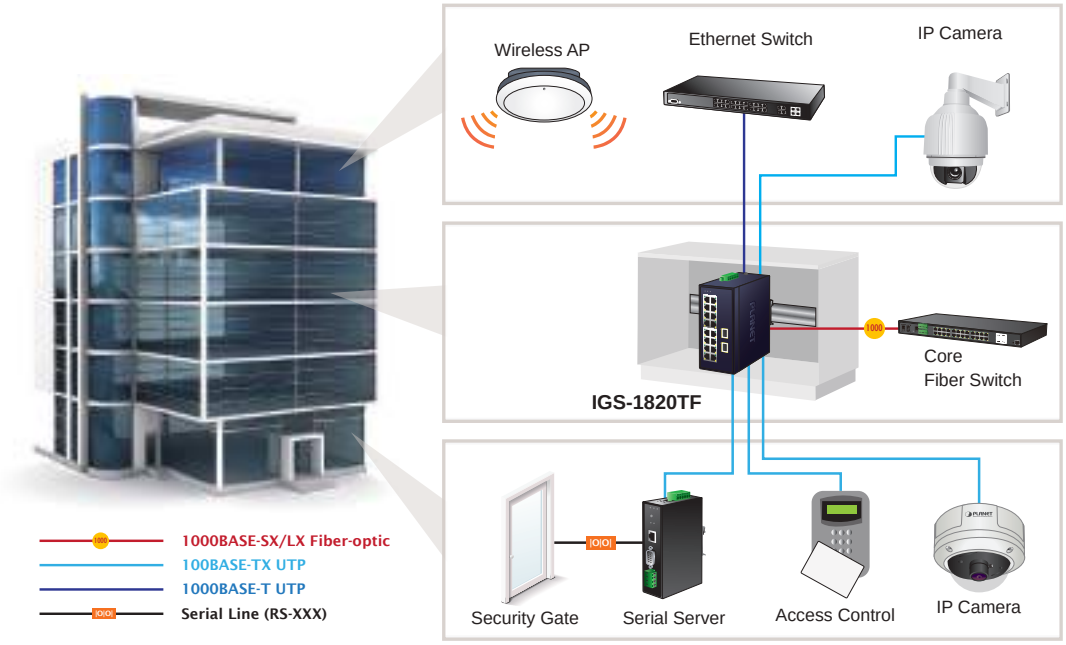
Non-stop Ethernet Service
Dual Power Input with Auto Failover



Applications

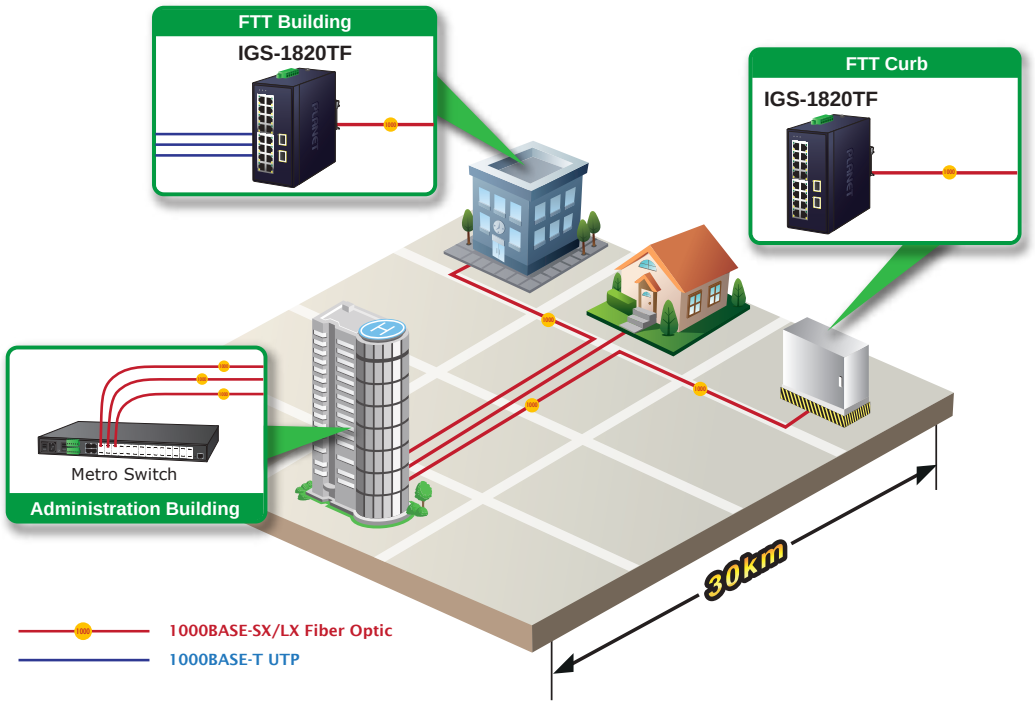
Industrial-grade Switch for Building Automation and Security

The IGS-1820TF's IP30-rated metal case is particularly designed for heavy industries, such as factories, harbors, warehouses, and more. Suitable for buildings where security is strictly enforced, the IGS-1820TF, with sixteen Gigabit Ethernet interfaces, can easily build an IP phone system, IP surveillance system, security control system and wireless AP group in the harsh Industrial environment.



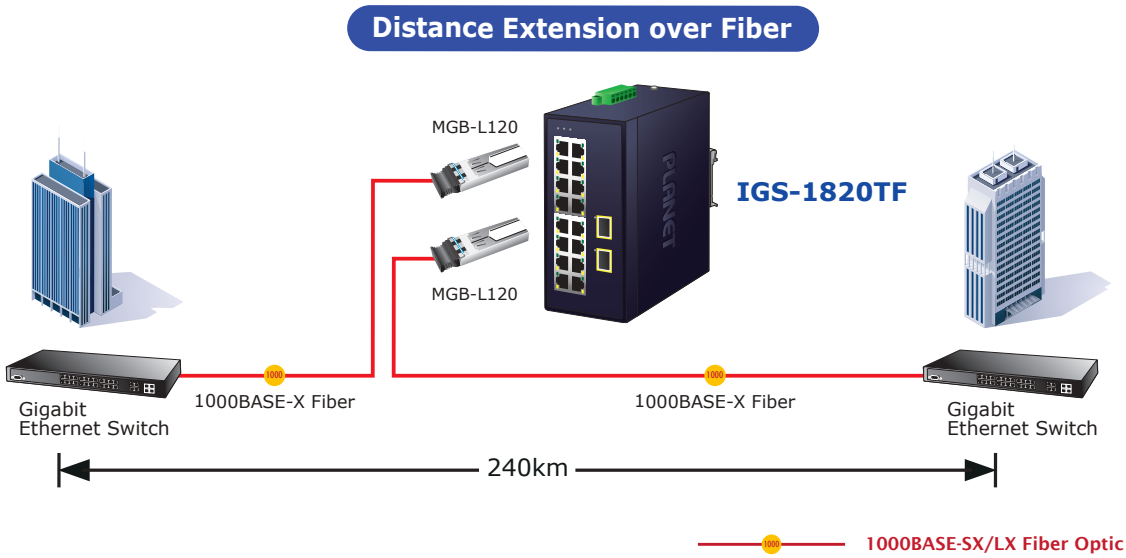
FTTX Solutions for MAN Application

To build a network solution of **FTTH** (Fiber to the Home) or **FTTC** (Fiber to the Curb) for ISPs and **FTTB** (Fiber to the Building) for enterprises, the various distances of SFP and Bidi (WDM) transceivers are optional for customers. With two Gigabit-speed SFP slots built in, the deployment distance of the IGS-1820TF can be extended up to 120 kilometers (single-mode fiber), which provides a high-performance edge service for FTTx solutions. The IGS-1820TF is the ideal solution for service providers such as ISPs and telecoms to build Metropolitan Area Network (MAN) based on the fiber technology.

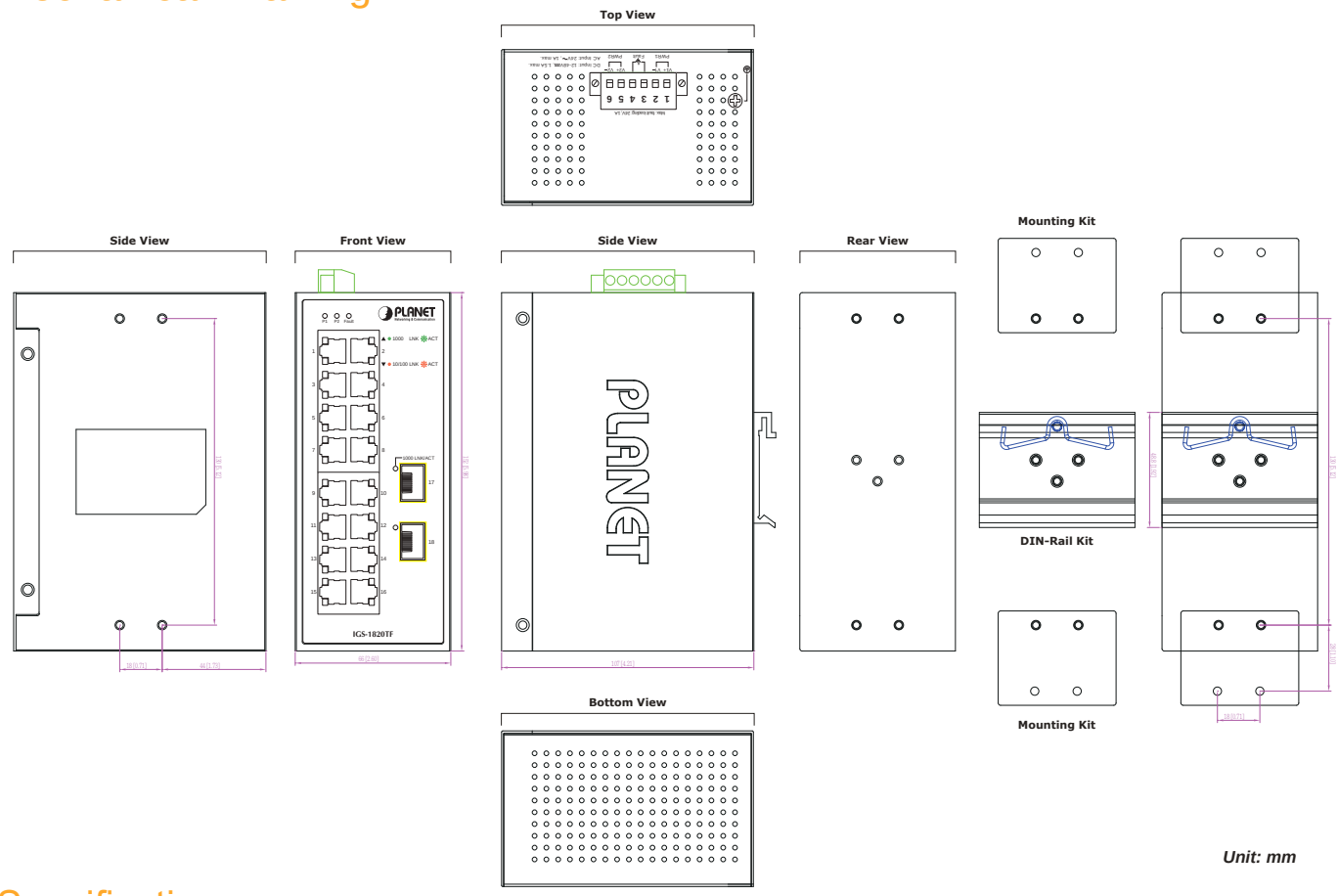


Fiber-Optic Link Capability Enables Extension of Network Deployment

With its additional 2-port 1000BASE-SX/LX SFP fiber optic Ethernet link capability, the administrator now can flexibly choose the suitable SFP transceiver according to the transmission distance or the transmission speed required to extend the network efficiently. They are well suited for applications to uplink to backbone switch and monitoring center in long distance.



Mechanical Drawing



Unit: mm

Specifications

Product	IGS-1820TF
Hardware Specifications	
Gigabit Ethernet Copper Ports	16 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
Gigabit SFP Slots	2 1000BASE-SX/LX/BX SFP interfaces
Switch Architecture	Store-and-Forward
Switch Fabric	36Gbps (non-blocking)
Throughput (packet per second)	26.79Mpps@ 64 bytes
Address Table	8K entries, automatic source address learning and aging
Shared Data Buffer	4.1Mbits
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
Jumbo Frame	10Kbytes
ESD Protection	6KV DC
Enclosure	IP30 metal case
Installation	DIN-rail kit and wall-mount kit
Connector	Removable 6-pin terminal block for power input - Pin 1/2 for Power 1 - Pin 3/4 for fault alarm - Pin 5/6 for Power 2
Alarm	One relay output for power failure. Alarm relay current carry ability: 1A @ 24V DC
Dimensions (W x D x H)	66 x 107 x 152 mm
Weight	745g
Power Requirements	Dual 12~48V DC 24V AC
Power Consumption	DC input: Max. 3.4 watts/11.6BTU (System on) Max. 11.1watts/37.9BTU (Full loading)
	AC input: Max. 6 watts/20.5BTU (System on) Max. 15 watts/51.2BTU (Full loading)

Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC60068-2-32 (free fall) IEC60068-2-27 (shock) IEC60068-2-6 (vibration)
Regulatory Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab 1000BASE-T IEEE 802.3z 1000BASE-SX/LX IEEE 802.3x flow control and back pressure IEEE 802.1p Class of Service IEEE 802.3az Energy Efficient Ethernet (EEE)
Environment	
Operating Temperature	-40 ~ 75 degrees C
Storage Temperature	-40 ~ 85 degrees C
Humidity	5 ~ 95% (non-condensing)

Ordering Information

IGS-1820TF	Industrial 16-Port 10/100/1000T + 2-Port 1000X SFP Ethernet Switch (-40~75 degrees C)

Related Products

IGS-1600T	Industrial 16-Port 10/100/1000T Ethernet Switch (-40~75 degrees C)
IGS-4215-16T2S	Industrial L2/L4 16-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch (-40~75 degrees C)
IGS-20040MT	Industrial L2+ 16-Port 10/100/1000T + 4-Port 100/1000X SFP Managed Switch (-40~75 degrees C)

Available 1000Mbps Modules forIGS-1820TF

MGB-GT	SFP-Port 1000BASE-T Module
MGB-SX	SFP-Port 1000BASE-SX mini-GBIC module - 550m
MGB-SX2	SFP-Port 1000BASE-SX mini-GBIC module - 2km
MGB-LX	SFP-Port 1000BASE-LX mini-GBIC module - 20km
MGB-L30	SFP-Port 1000BASE-LX mini-GBIC module - 30km
MGB-L50	SFP-Port 1000BASE-LX mini-GBIC module - 50km
MGB-L70	SFP-Port 1000BASE-LX mini-GBIC module - 70km
MGB-L120	SFP-Port 1000BASE-LX mini-GBIC module - 120km
MGB-LA10	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 10km
MGB-LB10	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 10km
MGB-LA20	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 20km
MGB-LB20	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 20km
MGB-LA40	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 40km
MGB-LB40	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 40km
MGB-TSX	SFP-Port 1000BASE-SX mini-GBIC module - 550m (-40 ~ 75 degrees C)
MGB-SX2	SFP-Port 1000BASE-SX mini-GBIC module - 2km (-40 ~ 75 degrees C)
MGB-TLX	SFP-Port 1000BASE-LX mini-GBIC module - 20km (-40 ~ 75 degrees C)
MGB-TL30	SFP-Port 1000BASE-LX mini-GBIC module - 30km (-40 ~ 75 degrees C)
MGB-TL70	SFP-Port 1000BASE-LX mini-GBIC module - 70km (-40 ~ 75 degrees C)

PLANET Technology Corporation

11F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)
Tel: 886-2-2219-9518 Fax: 886-2-2219-9528
Email: sales@planet.com.tw www.planet.com.tw