Product Specifications

Industrial 16-Port 10/100TX + 2-Port Gigabit TP/SFP Combo Ethernet Switch

IFGS-1822TF

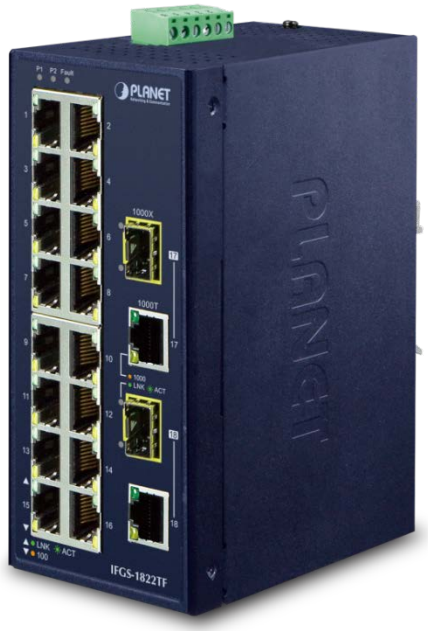
Version 1.0

Change History:

Revision:	Date:	Author:	Change List
Version 1.0	2019/5/10	Marc Liao	Initial Release

Author:	Marc Liao	**Editor:**	Marc Liao
Reviewed By:		**Approved By:**	Kent Kang

1. PRODUCT DESCRIPTION



Robust Features for Industrial Ethernet Networks with Plug and Play Configuration

Designed for heavy industrial demanding environments, PLANET's new IFGS-1822TF comes with high-density **16 10/100BASE-TX ports**, **2 additional Gigabit copper/SFP combo interfaces** and **redundant power system**. 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.

Two Gigabit Uplink Ports

The IFGS-1822TF provides two extra Gigabit TP/SFP combo interfaces that enable the network administrators to increase their network bandwidth to relieve traffic congestion when the two 10/100/1000BASE-T uplink ports are used to connect devices, such as NVR, video streaming server, NAS and more. With the combo design, the administrators can easily connect network devices no matter how large the network expansion is.

Flexibility and Long-distance Extension Solution

Through the two shared **Gigabit-speed fiber SFP slots**, it can also connect with the **1000BASE-SX/LX SFP** (Small Form-factor Pluggable) fiber transceiver to uplink to backbone switch and monitoring center in long distance. The distance can be extended from 550 meters (multi-mode fiber) to 120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the industrial data centers and distributions.

Environmentally Hardened Design

The IFGS-1822TF possesses an integrated power supply source with a wide range of voltages (**12 to 48V DC or 24V AC**) for worldwide high availability applications requiring dual or backup power inputs. It also provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in the curbside traffic control cabinets.

Robust Protection

The IFGS-1822TF 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 IFGS-1822TF, integrated with advanced green networking technologies and **IEEE 802.3az Energy Efficient Ethernet (EEE)** protocol based power saving, 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 IFGS-1822TF 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 IFGS-1822TF is connected with Ethernet cable shorter than 20m, a device can obtain maximum power savings because the IFGS-1822TF 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 .

2. PRODUCT FEATURES

Physical Port

- 16-port 10/100BASE-TX RJ45 with auto MDI/MDI-X function
- 2-port 10/100/1000BASE-T and 1000BASE-X combo interface

Layer 2 Features

- Complies with IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX Ethernet standard
- Supports auto-negotiation and 10/100Mbps 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 16K 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

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC:	IC Plus IP1829AI	x 1
Gigabit TP/SFP Combo PHY	Atheros AR8033	x 2
EEPROM:	AT24C16C	x 1
LED Controller:	IP403	x 1

3.2 FUNCTION SPECIFICATIONS

Product	**IFGS-1822TF**
Hardware Specifications	
Fast Ethernet Copper Ports	16 10/100BASE-TX RJ45 auto-MDI/MDI-X ports
Gigabit Ethernet Copper Ports	Two 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports (shared with Port-17 and Port-18)
SFP Slots	Two 1000BASE-SX/LX/BX SFP interfaces (shared with Port-17 and Port-18)
Switch Architecture	Store-and-Forward
Switch Fabric	7.2Gbps (non-blocking)
Throughput (packet per second)	5.36Mpps@ 64 bytes
Address Table	16K entries, automatic source address learning and aging
Shared Data Buffer	4Mbits
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
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
Power Requirements	Dual 12~48V DC or one 24V AC
Power Consumption	Max. 6.3 watts/21.4BTU (Ethernet full loading)
Standards Conformance	
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab Gigabit 1000T IEEE 802.3z Gigabit 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)

3.3 PHYSICAL SPECIFICATIONS:

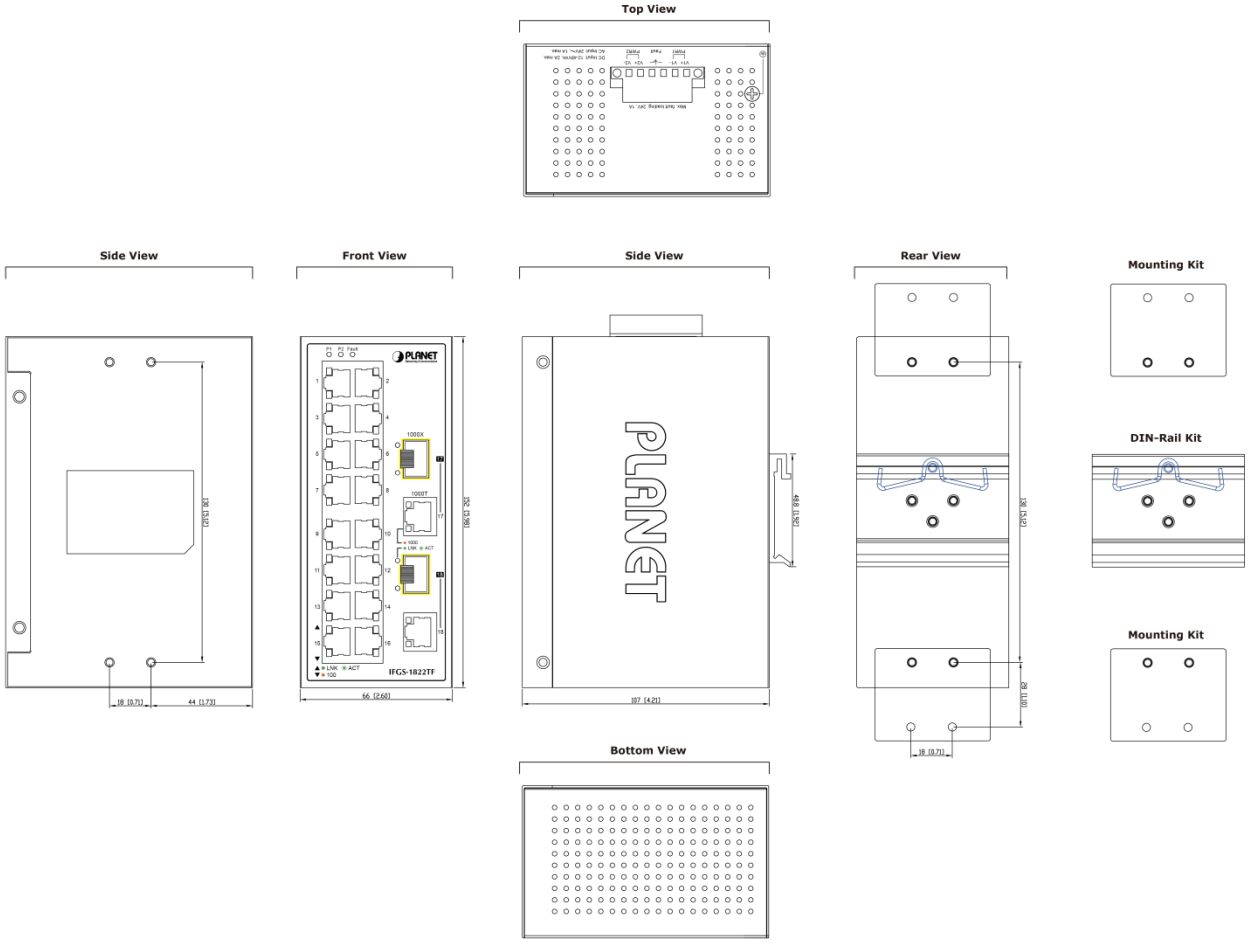
- **Dimensions:**

  66 x 107x 152 mm (W x D x H)

- **Weight:**

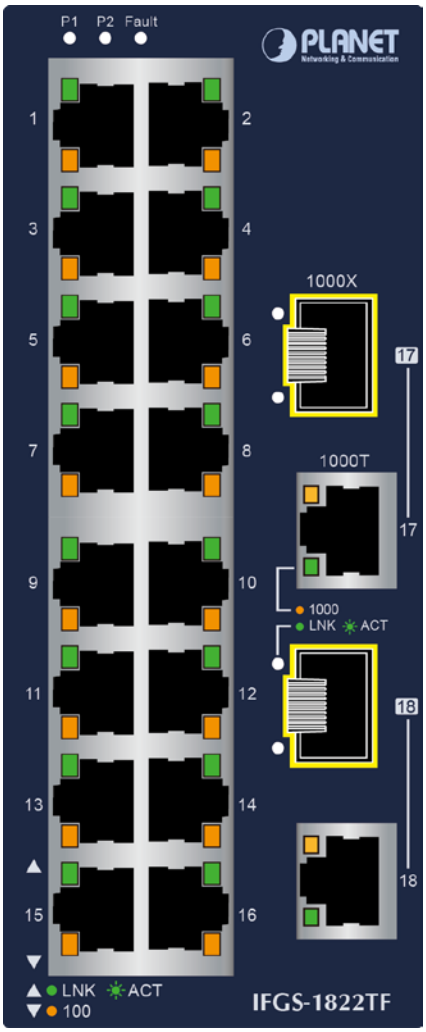
  300g

- **Diagram**



Unit: mm

Front Panel:



LED Definition

System

LED	Color	Function
DC1	Green	Lights to indicate DC power input 1 has power.
DC2	Green	Lights to indicate DC power input 2 has power.
Fault	Red	Lights to indicate that AC or DC power has failed.

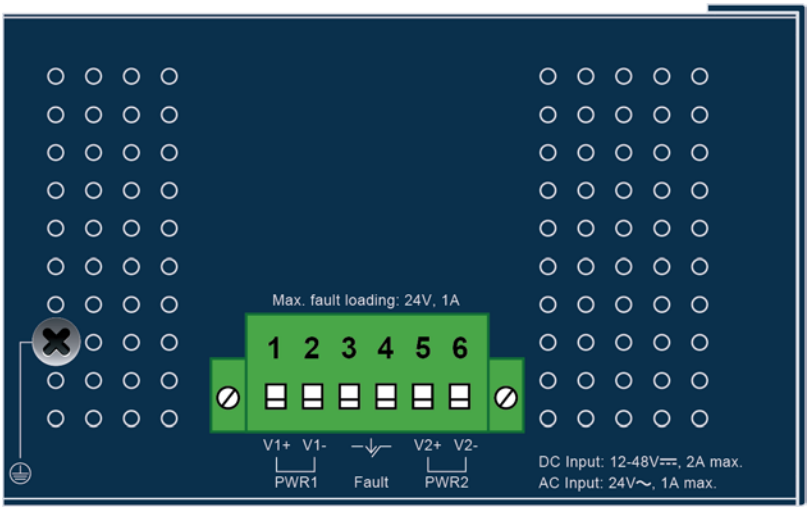
Per 10/100BASE-TX Port

LED	Color	Function
LNK/ACT	Green	Lights to indicate the link through that port is successfully established.
		Blinking to indicate that the switch is actively sending or receiving data over that port.
		Off to indicate that the port is linked down.
100 Speed	Amber	Lights to indicate that the port is operating at **100Mbps**.
		Off to indicate that the port is operating at **10Mbps**.
		Off to indicate that the port is linked down.

▶ **Per Gigabit RJ45/SFP Combo Interface**

LED	Color	Function
LNK/ACT	**Green**	Lights to indicate the link through that port is successfully established.
		Blinking to indicate that the switch is actively sending or receiving data over that port.
		Off to indicate that the port is linked down.
1000 Speed	**Amber**	Lights to indicate that the port is operating at **1000Mbps**.
		Off to indicate that the port is operating at **10/100Mbps**.
		Off to indicate that the port is linked down.

■ **Top View**



3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: -40°C ~ 75 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

Storage:

Temperature: -40°C ~ 85 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATION

LOADING / INPUT	System on without any devices attached	Port-1~Port-18 Link Up with Full Loading (Port 17/18 Gigabit Fiber)	Port-1~Port-18 Link Up with Full Loading (Port 17/18 Gigabit TP)
DC 12V	**1.32** watts/4.5BTU	**4.08** watts/13.9BTU	**3.84** watts/13.1BTU
DC 24V	**1.2** watts/4BTU	**3.84** watts/13.1BTU	**3.84** watts/13.1BTU
DC 48V	**1.92** watts/6.55BTU	**3.84** watts/13.1BTU	**3.84** watts/13.1BTU
DC 56V	**1.68** watts/5.7BTU	**3.9** watts/13.3BTU	**3.92** watts/13.3BTU
AC 24V	**3.5** watts/11.9BTU	**6.3** watts/21.4BTU	**6.3** watts/21.4BTU

3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

Stability Testing:

- IEC60068-2-32 (Free Fall)
- IEC60068-2-27 (Shock)
- IEC60068-2-6 (Vibration)

3.7 RELIABILITY

MTBF > 100,000Hrs @ 25 degrees C

3.8 BASIC PACKAGING

☑ The IFGS-1822TF	x 1
☑ User's Manual	x 1
☑ DIN-rail Kit	x 1
☑ Wall Mounting Kit	x 1
☑ SFP Dust Cap	x 2
☑ RJ45 Dust Cap	x 16

3.9 PACKING INFORMATION

Box Dimensions (W x D x H)	300 x 170 x 90 mm
Weight	TBD
Carton Dimensions (W x D x H)	385 x 340 x 490 mm
Carton Weight	TBD
Quantity	10pcs in one carton