

Product Specifications

Industrial Compact 4-Port 10/100/1000T + 1-Port 100/1000X SFP Gigabit Ethernet Switch

IGS-510TF

Version 1.0

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Change History:

Revision:	Date:	Author:	Change List
Version 1.0	2019/8/13	Marc Liao	Initial Release

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

1. PRODUCT DESCRIPTION



Compact Size for More Practicability and Convenience

PLANET IGS-510TF is an industrial-grade Gigabit Ethernet Switch, featuring **four 10/100/1000BASE-T** copper ports and **one 100/1000BASE-X SFP fiber port** and packed in an IP30-rated rugged but compact-size case. Being able to operate under the temperature ranging from **-40 to 75 degrees C** and a wide-ranging redundant power system (**9~48V DC or 24V AC**), the IGS-510TF provides reliable, stable and continuous long-range data transmission and can be installed in any harsh environment without taking space into consideration.

Fiber-optic Link Capability Extends the Range of Network Deployment

The maximum distance between two IP devices via Ethernet UTP cable is 100 meters. To flexibly extend the deployment range of IP devices, the IGS-510TF's SFP slot supporting **100BASE-FX/1000BASE-X**, SFP modules, and more can reach a transmission distance of up to 120km.

Thus, building a network solution of FTTH (Fiber to the Home), FTTC (Fiber to the Curb) for ISPs or FTTB (Fiber to the Building) for enterprises becomes so easy to users when long-distance deployment is employed. The IGS-510TF can handle extremely large amounts of data in a secure topology linking to a metro switch, backbone or high-capacity server.

Small but Tough

The IGS-510TF is specifically designed with durable components and strong housing to operate reliably in electrically harsh and climatically demanding environments like plant floors or curbside traffic control cabinets. With wide operating temperature range of **-40 to 75 degrees C**, the IGS-510TF is ideal for service providers, campuses and public areas to deploy outdoor wireless access points, outdoor IP cameras or IP phones in any places easily and efficiently.

Dual Power Input for High Availability Network System

The IGS-510TF features a strong dual power input system with wide-ranging voltages (9V~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-510TF via power supply 2 alternatively without any loss of operation.

Low Power Consumption for Green Networking

The IGS-510TF, adopting the advanced green networking technology, provides cable length power saving, and link-up and link-down power saving. These features make the IGS-510TF consume very low power in full load operation mode, which helps conserve energy effectively but maintains high performance efficiently.

With the **Auto Power Saving** and **IEEE 802.3az Energy Efficient Ethernet (EEE)** Protocol, the IGS-510TF can automatically detect cable link status and network traffic, and thus is able to adjust power consumption accordingly. It enables the switch to consume less power when it is less active.

Robust Protection

The IGS-510TF provides contact discharge of $\pm 6\text{KV}$ DC and air discharge of $\pm 8\text{KV}$ DC for Ethernet ESD protection. It also supports $\pm 6\text{KV}$ surge immunity to improve product stability and protects users' networks from devastating ESD attacks, making sure the flow of operation does not fluctuate.

Flexible and Easy Installation with Limited Space

The compact-sized IGS-510TF is specially designed to be installed in a narrow environment, such as wall enclosure. It can be installed by fixed wall mounting or DIN rail, thereby making its usability more flexibly and easily in any space-limited location.



DIN-rail Mounting



Wall Mounting



**Side Wall Mounting
(Space saving)**

2. PRODUCT FEATURES

Interface

- Four 10/100/1000BASE-T Gigabit Ethernet RJ45 copper ports with auto-MDI/MDI-X function
- One SFP slot, supporting 1000BASE-X and 100BASE-FX transceiver in dual modes

Layer 2 Switching

- Complies with IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX, IEEE 802.3ab 1000BASE-T Ethernet standard
- Supports auto-negotiation and 10/100Mbps half/full duplex and 1000Mbps full duplex
- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High-performance Store and Forward architecture, broadcast storm control and runt/CRC filtering eliminate erroneous packets to optimize the network bandwidth
- Backplane (switching fabric): 10Gbps
- Integrated address look-up engine, supporting 4K absolute MAC addresses
- 9K jumbo packet size
- Automatic address learning and address aging
- CSMA/CD Protocol

Industrial Case and Installation

- IP30 metal case
- DIN-rail, wall-mount or side wall-mount design
- 9 to 48V DC and 24V AC power support, redundant power with reverse polarity protection
- Removable terminal block for master and slave power
- Supports 6KV DC 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 COMPONENT

Switch ASIC: Realtek RTL8370MBI x 1

3.2 FUNCTION SPECIFICATIONS

Model	IGS-510TF	
Hardware Specifications		
Copper Ports	4-port 10/100/1000BASE-T RJ45 TP auto-MDI/MDI-X, auto negotiation	
SFP Slots	1 1000BASE-SX/LX/BX SFP interface Compatible with 100BASE-FX SFP	
Connector	Removable 4-pin terminal block Pin 1/2 for Power 1; Pin 3/4 for Power 2	
LED	2 x LED for system and power: <ul style="list-style-type: none"> ■ Green: DC Power 1 ■ Green: DC Power 2 2 x LED for each copper port <ul style="list-style-type: none"> ■ Green: 1000Mbps LNK/ACT ■ Orange: 10/100Mbps LNK/ACT 1 x LED for SFP fiber slot <ul style="list-style-type: none"> ■ Green: LNK/ACT 	
ESD Protection	6KV	
Power Requirements	9~48V DC, redundant power with reverse polarity protection, 24V AC power support	
Power Consumption / Dissipation	Max. 2.8 watts/9.5BTU (Ethernet Full Loading)	
Installation	DIN-rail kit and wall-mount ear	
Enclosure	IP30 metal case	
Switch Specifications		
Switch Processing Scheme	Store-and-Forward	
Address Table	4K entries	
Buffer Memory	1M bits on-chip buffer memory	
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex	
Switch Fabric	10Gbps	
Throughput (packet per second)	7.4Mpps@64bytes	
Jumbo Frame	9K	
Network Cables	Twisted-pair	10BASE-T: 2-pair UTP Cat3,4,5, up to 100 meters 100BASE-TX: 2-pair UTP Cat 5, 5e up to 100 meters 1000BASE-T: 4-pair UTP Cat 5e,6 up to 100 meters
	Fiber-Optic Cable	1000BASE-SX: 50/125µm or 62.5/125µm multi-mode fiber cable, from 220 and 550 meters to 2km. 1000BASE-LX: 9/125µm single-mode cable, with distance for 10/20/40/80/120km (vary on SFP module) 100BASE-FX:

	50/125µm or 62.5/125µm multi-mode fiber cable, up to 2km (vary on SFP module) 9/125µm single-mode cable, with distance for 20/40/60m (vary on SFP module)
Standards Conformance	
Standards Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3ab Gigabit Ethernet IEEE 802.3az Gigabit SX/LX IEEE 802.3x Full-Duplex Flow Control IEEE 802.3az Energy Efficient Ethernet IEEE 802.1p Class of Service

3.3 PHYSICAL SPECIFICATIONS:

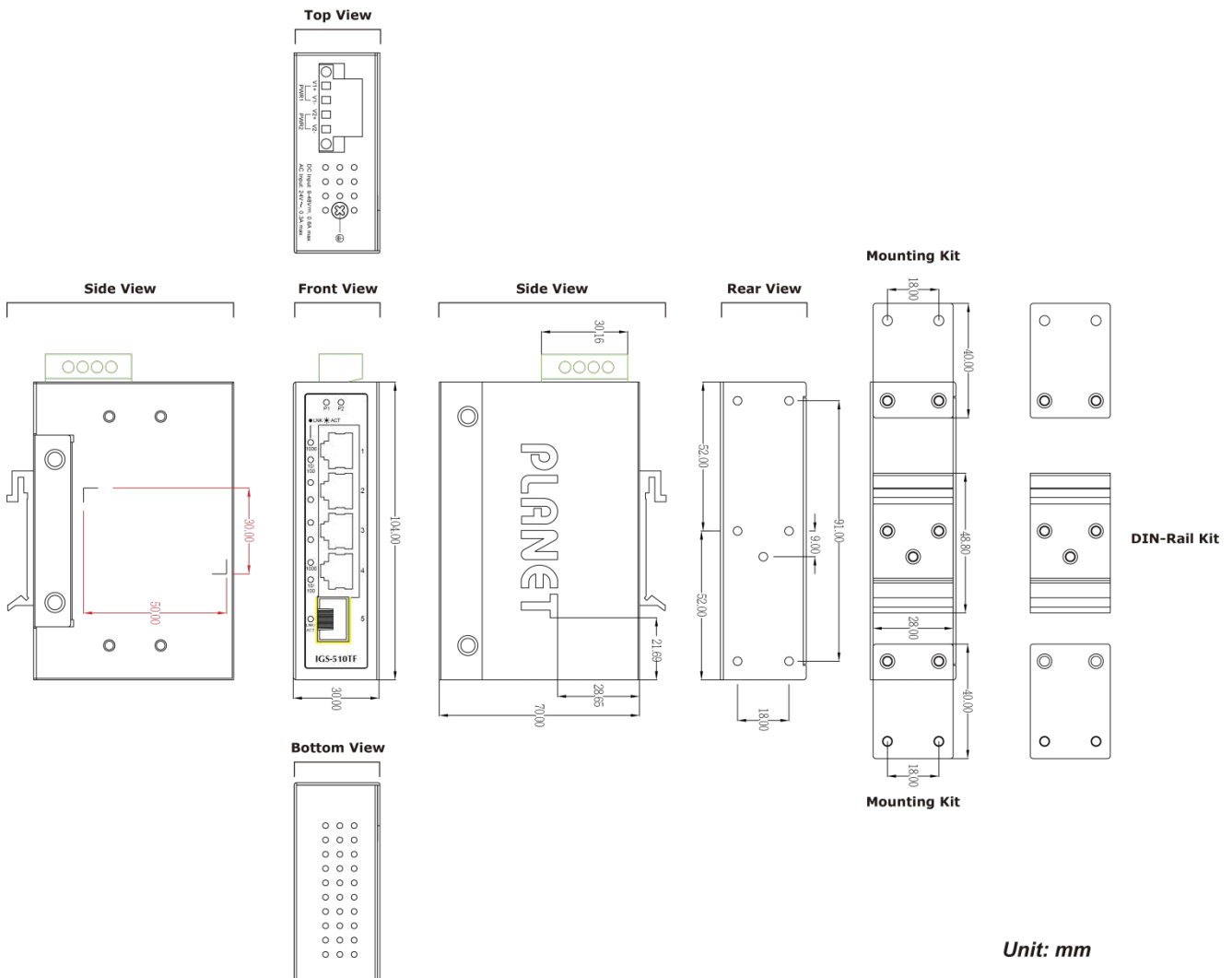
■ **Dimensions:**

30 x 70 x 104 mm (W x D x H)

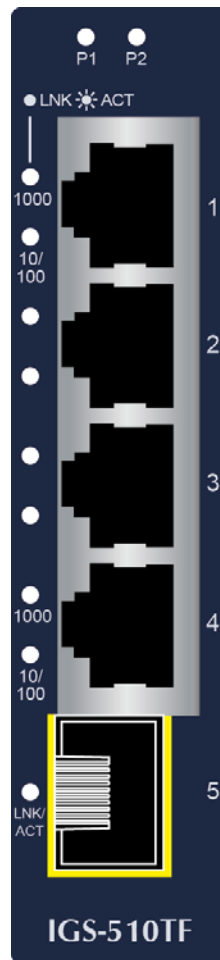
■ **Weight:**

270g

■ **Diagram**



■ Front Panel:



■ LED Definition

► System

LED	Color	Function
P1	Green	Lights to indicate power 1 has power.
P2	Green	Lights to indicate power 2 has power.

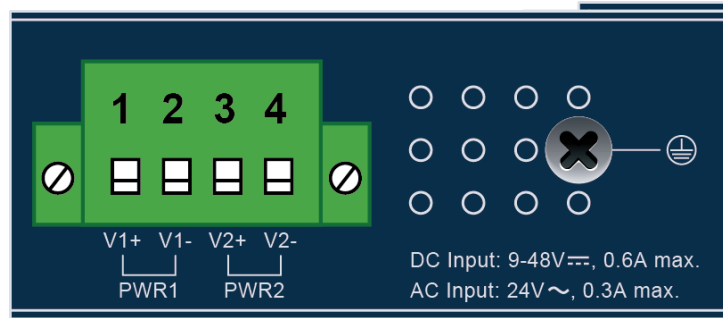
► Per 10/100/1000BASE-T Interface (Port 1 to Port 4)

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

► Per 100/1000BASE-X SFP Slot (Port 5)

LED	Color	Function
100/1000 LNK/ACT	Green	Lights to indicate the port is successfully established at 100Mbps or 1000Mbps. Blinks to indicate that the Switch is actively sending or receiving data over that port.

■ 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-5 Link Up with Data Full Loading
DC 9V	0.81watts/2.7BTU	2.7 watts/9.2BTU
DC 24V	0.72watts/2.4BTU	2.6 watts/8.8BTU
DC 48V	0.96watts/3.2BTU	2.8 watts/9.5BTU

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

<input checked="" type="checkbox"/> The IGS-510TF	x 1
<input checked="" type="checkbox"/> User's Manual	x 1
<input checked="" type="checkbox"/> DIN-rail Kit	x 1
<input checked="" type="checkbox"/> Wall Mounting Kit	x 1
<input checked="" type="checkbox"/> RJ45 Dust Cap	x 4
<input checked="" type="checkbox"/> SFP Dust Cap	x1

3.9 PACKING INFORMATION

Box Dimensions (W x D x H)	205 x 144 x 46 mm
Weight	376g
Carton Dimensions (W x D x H)	435 x 325 x 280 mm
Carton Weight	7.8kg
Quantity	20pcs in one carton