

## Product Specification

Industrial 8 100/1000X SFP + 2-Port 10/100/1000T Managed Switch  
(-40~75 Degree C)

### IGS-10080MFT

Version 1.0

This document contains confidential proprietary information and is property of PLANET. The contents of this document should not be disclosed to unauthorized persons without the written consent of PLANET.

#### Change History:

Revision	Date	Author	Change List
Version 1.0	2013/01/03	Norman Tsai	Initial release

<b>Author</b>	Norman Tsai	<b>Editor:</b>	Norman Tsai
<b>Reviewed by:</b>	Kent Kang	<b>Approved by:</b>	Tom Shih

## 1. PRODUCT DESCRIPTION



The PLANET IGS-10080MFT is an Industrial 10-Port Full Gigabit Managed Ethernet Switch specially designed to build a full Gigabit backbone to transmit reliable, high speed data in heavy industrial demanding environments and also can forward data to remote network through fiber optic. It provides **8-Port 100/1000Base-SX/LX SFP mini-GBIC slot interface** and **2 extra 10/100/1000Base-T copper port** delivered in an IP30 rugged strong aluminum case with redundant DC power input system, being able to operate under the temperature range from **-40 to 75 Degree C**, the IGS-10080MFT can be placed in almost any difficult environment.

### **IPv6 / IPv4 Full-functioned Secure Automation Networking**

The IGS-10080MFT is the ideal solution to fulfill the demand of IPv6 management Gigabit Ethernet Switch, especially in the Industrial hardened environment. It supports both IPv4 and IPv6 management functions and can work with original network structure. The IGS-10080MFT provides advanced Layer 2 to Layer 4 data switching and redundancy, Quality of Service traffic control, network access control and authentication, and Secure Management features to protect customer's industrial and automation network connectivity

### **Fast Recovery to a Redundant Ethernet Network**

The IGS-10080MFT features strong and self-recovery capability to prevent interruptions and outside intrusions. It incorporates **Rapid Spanning Protocol (RSTP)**, **Multiple Spanning Tree (MSTP)**, dynamic port **Link**

**Aggregation** and **Redundant Power System** into customers' industrial automation network to enhance system reliability and uptime in the harsh factory environments. It also protects customer's industrial network connectivity with switching recovery capability that is used for implementing fault tolerant ring and mesh network architectures.

### **Environmentally Hardened Design**

With IP30 aluminum industrial case protection, the IGS-10080MFT provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb side traffic control cabinets. It also possesses an integrated power supply source with wide range of voltages (**12 to 48V DC** or **24V AC**) for worldwide high availability applications requiring dual or backup power inputs. Being able to operate under the temperature range from -40 to 75 Degree C, the IGS-10080MFT can be placed in almost any difficult environment

## Flexibility and Extension Solution

The 8 mini-GBIC slots built in the IGS-10080MFT support Dual-Speed, **100Base-FX** and **1000Base-SX/LX** SFP (Small Form-factor Pluggable) fiber-optic modules, that means, 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.

## 2. PRODUCT FEATURES

### ➤ **Physical Port**

- 8 100/1000Base-SX/LX mini-GBIC SFP slots
- 2 10/100/1000Base-T Ethernet interface

### ➤ **Industrial Case / Installation**

- IP30 Aluminum case protection
- DIN-Rail and Wall Mount Design
- Redundant Power Design
  - 12 to 48V DC, redundant power with polarity reverse protect function
  - AC 24V power adapter acceptable
- Supports EFT protection 6000 VDC for power line
- Supports 6000 VDC Ethernet ESD protection
- -40 to 75 Degree C operation temperature

### ➤ **Layer 2 Features**

- Prevents packet loss with back pressure (Half-Duplex) and IEEE 802.3x PAUSE frame flow control (Full-Duplex)
- High performance of Store-and-Forward architecture and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Storm Control support:
  - Multicast / Unknown-Unicast
- Support **VLAN**
  - IEEE 802.1Q Tagged VLAN
  - Up to 255 VLANs groups, out of 4095 VLAN IDs
  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - Private VLAN
  - Protocol-based VLAN
  - MAC-based VLAN
  - Voice VLAN
- Support **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, spanning tree by VLAN
  - BPDU Guard
- Support **Link Aggregation**
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (Static Trunk)
  - Maximum 5 trunk groups, up to 10 ports per trunk group

- Up to 20Gbps bandwidth(Duplex Mode)

- Provide Port Mirror (many-to-1)
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port
- Support E.R.P.S. (**Note : Future function**)

➤ **Quality of Service**

- Ingress Shaper and Egress Rate Limit per port bandwidth control
- 8 priority queues on all switch ports
- Traffic classification:
  - IEEE 802.1p CoS
  - IP TOS / DSCP / IP Precedence
  - IP TCP/UDP port number
  - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port
- Traffic-policing policies on the switch port
- DSCP remarking

➤ **Multicast**

- Supports IGMP Snooping v1, v2 and v3
- Support MLD Snooping v1 and v2
- Querier mode support
- IGMP Snooping port filtering
- MLD Snooping port filtering
- MVR (Multicast VLAN Registration)

➤ **Security**

- IEEE 802.1x Port-Based / MAC-Based network access authentication
- Build-in RADIUS client to co-operate with the RADIUS servers
- TACACS+ login users access authentication
- RADIUS / TACACS+ users access authentication
- IP-Based Access Control List (ACL)
- MAC-Based Access Control List
- Source MAC / IP address binding
- **DHCP Snooping** to filter un-trusted DHCP messages
- **Dynamic ARP Inspection** discards ARP packets with invalid MAC address to IP address binding
- **IP Source Guard** prevents IP spoofing attacks
- **Loop Protection**
- IP address access management to prevent unauthorized intruder

➤ **Management**

- Switch Management Interfaces
  - Web switch management
  - Remote Telnet management
  - SNMP v1, v2c, and v3 switch management
  - SSH / SSL secure access

- Four RMON groups (history, statistics, alarms, and events)
- IPv6 IP Address / NTP / DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- Firmware upload/download via HTTP / TFTP
- DHCP Relay
- DHCP Option82
- User Privilege levels control
- NTP (Network Time Protocol)
- PTP (Precision Time Protocol)
- Link Layer Discovery Protocol (LLDP) Protocol
- Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues
- Reset button for system reboot or reset to factory default
- PLANET Smart Discovery Utility for deploy management
- 

### 3. PRODUCT SPECIFICATION

#### 3.1 MAIN COMPONENT

Switch ASIC: Vitesse VSC7428 X1

#### 3.2 FUNCTION SPECIFICATION

<b>Model Name</b>	<b>IGS-10080MFT</b>
<b>Hardware Specification</b>	
<b>SFP/mini-GBIC Slots</b>	8 100/1000Base-SX/LX mini-GBIC SFP slots
<b>Copper Ports</b>	2 10/100/1000Base-T Ethernet interface
<b>Switch Architecture</b>	Store-and-Forward
<b>Switch Fabric</b>	20Gbps / non-blocking
<b>Throughput (packet per second)</b>	14.8Mpps
<b>Address Table</b>	8K entries, automatic source address learning and ageing
<b>Flow Control</b>	IEEE 802.3x Pause Frame for Full-Duplex. Back pressure for Half-Duplex
<b>Jumbo Frame</b>	9Kbytes
<b>Reset Button</b>	< 5 sec: System reboot > 5 sec: Factory Default
<b>ESD Protection</b>	6KV DC
<b>EFT Protection</b>	6KV DC
<b>Enclosure</b>	IP30 Aluminum Metal Case
<b>Installation</b>	DIN Rail Kit and Wall Mount Kit
<b>Alarm</b>	One relay output for power fail. Alarm Relay current carry ability: 1A @ DC 24V
<b>LED Indicator</b>	<b>System:</b> Power 1 (Green) Power 2 (Green) Fault Alarm (Green) Ring (Green) <b>**Note</b> R.O. (Green) <b>**Note</b> <b>Per 10/100/1000T RJ-45 Ports:</b> 1000 (Green) 10/100, LNK/ACT (Orange)

	Per SFP Interface: 1000 LNK/ACT (Green) 100 LNK/ACT (Orange)
<b>Dimension (W x D x H)</b>	152 x 107x 72mm
<b>Weight</b>	1036g
<b>Power Requirement</b>	DC 12 to 48V, AC 24V Power Adapter
<b>Power Consumption</b>	13.92 Watts / 47.76BTU (Full loading)
<b>Layer 2 function</b>	
<b>Basic Management Interfaces</b>	Web Browser, Remote Telnet, SNMPv1, v2c
<b>Secure Management Interface</b>	SSH, SSL, SNMP v3
<b>Port configuration</b>	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Auto-detection / Forced 100/1000Mbps SFP Fiber transceiver speed. Flow Control disable / enable Power saving mode control
<b>Port Status</b>	Display each port's speed duplex mode, link status, Flow control status. Auto negotiation status, trunk status.
<b>Port Mirroring</b>	TX / RX / Both Many to 1 monitor
<b>E.R.P.S. Ring (**Note)</b>	Recovery time <20ms
<b>VLAN</b>	802.1Q Tagged Based VLAN ,up to 255 VLAN groups Q-in-Q tunneling Private VLAN MAC-based VLAN Protocol-based VLAN Voice VLAN MVR (Multicast VLAN Registration) Up to 255 VLAN groups, out of 4095 VLAN IDs
<b>Link Aggregation</b>	IEEE 802.3ad LACP / Static Trunk Support 5 groups of 10-Port trunk support
<b>QoS</b>	Traffic classification based, Strict priority and WRR 8-level priority for switching - Port Number - 802.1p priority - 802.1Q VLAN tag - DSCP field in IP Packet
<b>IGMP Snooping</b>	IGMP (v1/v2/V3) Snooping, up to 255 multicast Groups IGMP Querier mode support
<b>MLD Snooping</b>	MLD (v1/v2) Snooping, up to 255 multicast Groups MLD Querier mode support
<b>Access Control List</b>	IP-Based ACL / MAC-Based ACL Up to 256 entries
<b>Bandwidth Control</b>	Per port bandwidth control Ingress: 500Kb~1000Mbps Egress: 500Kb~1000Mbps
<b>SNMP MIBs</b>	RFC-1213 MIB-II RFC-2236 IGMPv2 RFC-2710 MLDv1 RFC-3376 IGMPv3 RFC-2879 RMON 1, 2, 3, 9 RFC-1493 Bridge MIB RFC-1643 Ethernet MIB RFC-2863 Interface MIB RFC-2665 Ether-Like MIB RFC-2819 RMON MIB (Group 1, 2, 3 and 9) RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB RFC3411 SNMP-Frameworks-MIB IEEE 802.1X PAE IF-MIB LLDP

	MAU-MIB
<b>Standards Conformance</b>	
<b>Regulation Compliance</b>	FCC Part 15 Class A, CE
<b>Stability Testing</b>	IEC60068-2-32 (Free fall) IEC60068-2-27 (Shock) IEC60068-2-6 (Vibration)
<b>Standards Compliance</b>	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 802.1s Multiple 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
<b>Environment</b>	
<b>Operating</b>	Temperature: -40 ~ 75 Degree C Relative Humidity: 5 ~ 95% (Non-condensing)
<b>Storage</b>	Temperature: -40 ~ 75 Degree C Relative Humidity: 5 ~ 95% (Non-condensing)

**\*\*Note:** It is the future function.

**3.3 PHYSICAL SPECIFICATIONS:**

**Dimensions:**

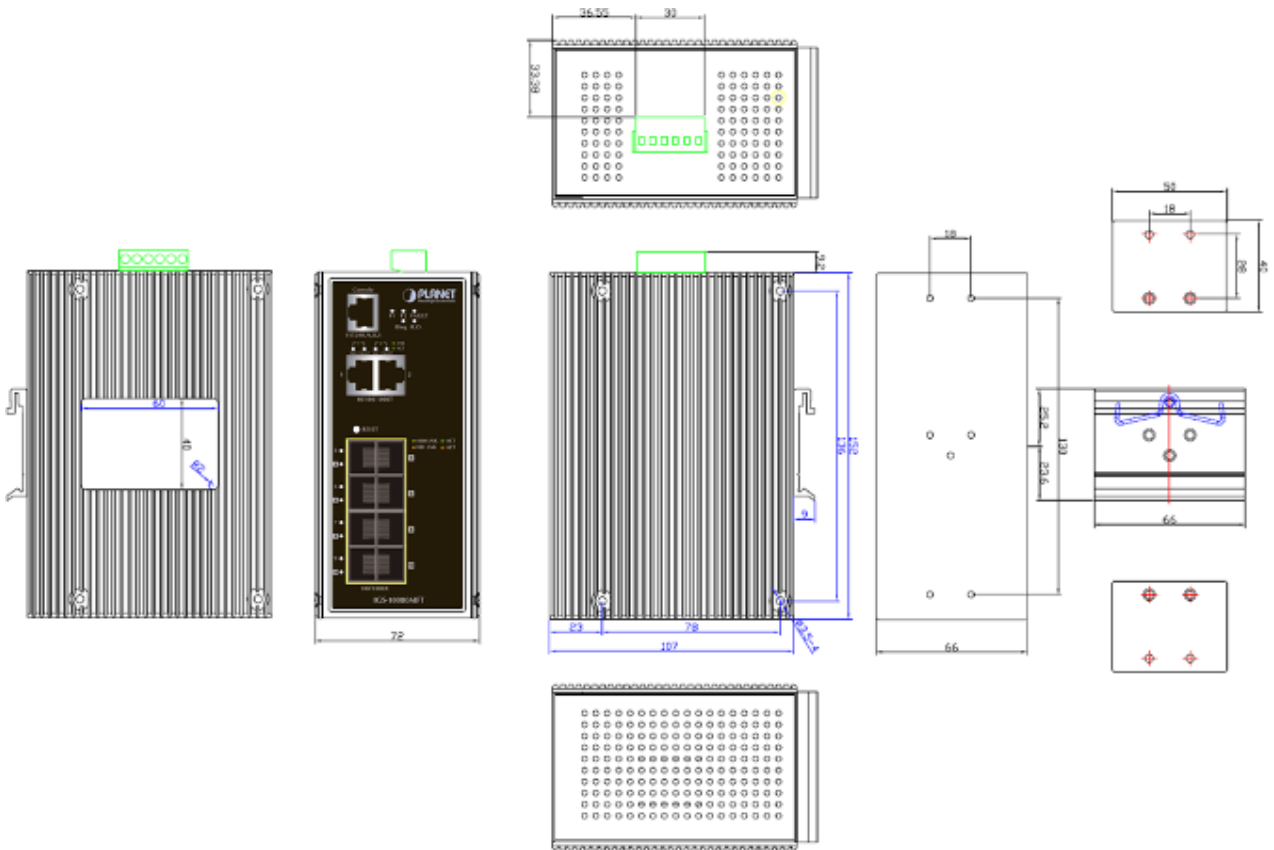
72 x 107 x 152 mm (W x D x H)

**Weight:**

1036g

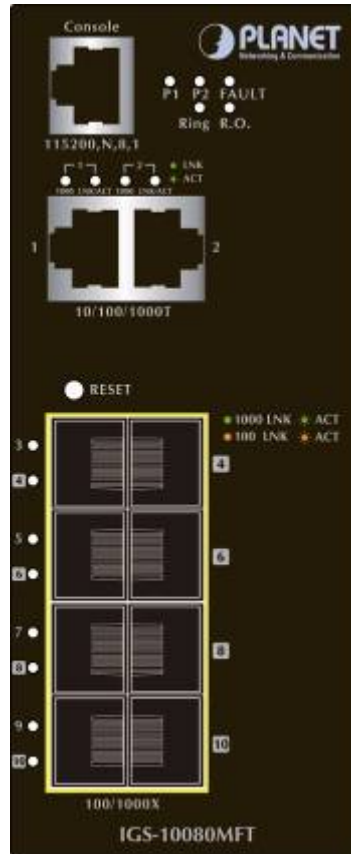
**Diagram:**

**Unit: mm**





Front view



**LED Definition:**

■ **System**

LED	Color	Function
P1	Green	Indicate the power 1 has power.
P2	Green	Indicate the power 2 has power.
Fault	Green	Indicate the either power 1 or power 2 has no power.
Ring	On	Indicate the ERPS Ring has been created successfully. <b>**Note</b>
	Off	Indicate the ERPS Ring hasn't been created. <b>**Note</b>
R.O.	Green	Indicate the Switch has been enabled Ring Owner. <b>**Note</b>
	Off	Indicate the Ring Owner hasn't be enabled. <b>**Note</b>

**\*\*Note:** It is means future function.

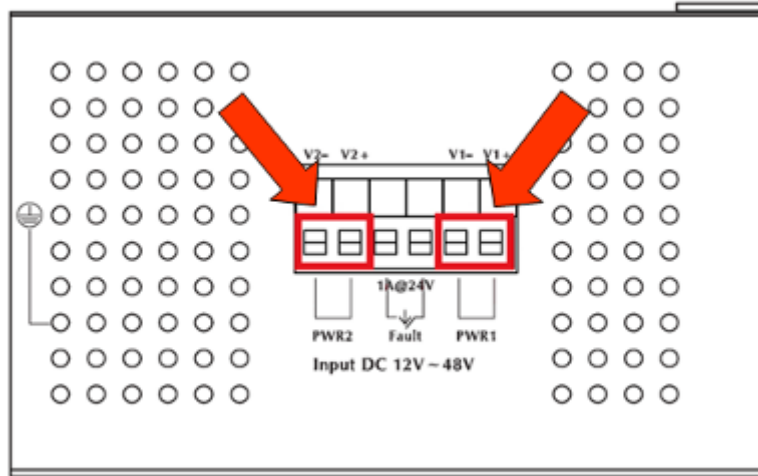
■ **Per 10/100/1000Base-T Port**

LED	Color	Function	
LNK / ACT	Green	Light	Indicate the link through that port is successfully established.
		Blink	Indicate that the Switch is actively sending or receiving data over that port.
1000	Green	Light	Indicate that the port is successfully connecting to the network at 1000Mbps.
		Off	Indicate that the port is successfully connecting to the network at 10 / 100Mbps.

■ **Per SFP Interface**

LED	Color	Function	
1000 LNK / ACT	Green	Light	Indicate the link through that port is successfully established.
		Blink	Indicate that the Switch is actively sending or receiving data over that port.
100 LNK / ACT	Orange	Light	Indicate that the port is successfully connecting to the network at 100Mbps.
		Blink	Indicate that the Switch is actively sending or receiving data over that port.

**Upper Panel:**



**3.4 ENVIRONMENTAL SPECIFICATION**

**Operating:**

- Temperature: -40°C ~75 Degree C
- Relative Humidity: 5% ~ 95% (non-condensing)

**Storage:**

- Temperature: -40°C ~75 Degree C
- Relative Humidity: 5% ~ 95% (non-condensing)

**3.5 ELECTRICAL SPECIFICATION**

**Power Requirement:** 12 to 48V DC, redundant power with polarity reverse protection

AC 24V Power Adapter

**Power Consumption:**

Operation Mode	Input Voltage (V)	Current (A)	Watts (W)
<b>System on</b>	12V DC	0.30A	3.7W
	24V DC	0.16A	3.84W
	36V DC	0.12A	4.32W
	48V DC	0.09A	4.32W
<b>Ethernet Full Load</b>	12V DC	1.2A	14.4W
	24V DC	0.53A	12.72W
	36V DC	0.37A	13.32W
	48V DC	0.29A	13.92W

### 3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

**EMI:**

EN 55022 CLASS A:2006

EN61000-3-2:2006

EN61000-3-3: 1995+1A:2001+A2:2005

**EMS:**

EN 55024:1998+A1:2001+A2:2003

IEC 61000-4-2:2001

IEC 61000-4-3:2008

IEC 61000-4-4:2004

IEC 61000-4-5:2005

IEC 61000-4-6:2008

IEC 61000-4-8:2001

IEC 61000-4-11:2004

**Stability Testing:**

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

### 3.7 REALIABILITY

MTBF > 100,000Hrs

### 3.8 BASIC PACKAGING

- |                                                                          |     |
|--------------------------------------------------------------------------|-----|
| <input checked="" type="checkbox"/> <b>The Industrial Managed Switch</b> | x1  |
| <input checked="" type="checkbox"/> <b>Quick Installation Guide</b>      | x1  |
| <input checked="" type="checkbox"/> <b>User's Manual CD</b>              | x1  |
| <input checked="" type="checkbox"/> <b>DIN Rail Kit</b>                  | x1  |
| <input checked="" type="checkbox"/> <b>Wall Mounting Kit</b>             | X1  |
| <input checked="" type="checkbox"/> <b>Dust Cap</b>                      | X11 |

### 3.9 PACKING DIMENSION

**Dimension:** 31.2 x 17 x 9 cm

**Weight:** 1.4kg (Gross Weight)  
15pcs in one carton