

# Industrial Managed Gigabit Ethernet Media Converter

## *Distance Extension with High Performance and Steady Network Communicating*

The PLANET Industrial Managed Gigabit Media Converter – IGT-90x series extends communication distance with highly Gigabit performance via fiber optical wire, in which the extension distance could be up to 10km by applying IGT-902S and IGT-905A (vary on SFP module) or up to 550m by IGT-902. The IGT-90x series is specifically designed with durable components and strong housing case to operate reliably in electrically harsh and climatically demanding environments. The industrial level Gigabit media converter provides a high level of immunity to electromagnetic interference and heavy electrical surges which are usually found on plant floors or traffic control cabinets in sidewalk. Being able to operate under the temperature range from -10 to 60 Degree C allow the IGT-90x series can be placed in almost any difficult environment.



## *Robust Converter Performance*

The PLANET IGT-90x series Industrial Managed Media Converter efficiently converts data between 10/100/1000Base-T and 1000Base-SX / LX network, and offers remote management and monitoring capabilities. The IGT-90x series provides the flexibility with all kinds of 10/100/1000Mbps Ethernet Media on RJ-45 port and performs highly stable Gigabit fiber performance. It also delivers the dynamic status report and real-time alarm messages that helps the network administrator to easily monitor and manage the entire industrial networks.

## *User-Friendly Centralized Web Management Interface*

For efficient management, the IGT-90x series Industrial Managed Gigabit Ethernet Media Converter is equipped with remote Web / SNMP (Simple Network Management Protocol) interface. By the built-in Web-based management interface, the IGT-90x series acts as an easy-to-use, platform-independent management and configuration facility. It also can be managed via any standard-based management software by supporting standard SNMP. Moreover, the IGT-90x series can manage the remote client devices by the TS-1000/802.3ah OAM protocol (operations, administration, and maintenance).

## *Enhanced Management Features*

The IGT-90x series can be programmed for advanced management functions such as IP address configuration, DHCP Client function, port configuration, converter configuration, 802.1Q Tag VLAN, Q-in-Q VLAN, QoS, OAM control, Layer 2 protocol filter, broadcast storm control and Ingress/Egress bandwidth control to enhance bandwidth utilization. The enhanced management features offered by the IGT-90x makes it ideally suited for mission-critical and real-time control applications in the Industrial Ethernet networks.

## KEY FEATURES

### *INTERFACE*

- 1-Port 10/100/1000Base-T RJ-45 with Auto-negotiation and Auto-MDI/MDI-X function
- 1 Port 1000Base-SX SC interface, provide long distance up to 220/550m on IGT-902
- 1 Port 1000Base-LX SC interface, provides long distance for 10km on IGT-902S
- 1 Mini-GBIC slot, provides multi choice of SFP modules on IGT-905A

### *INDUSTRIAL CONFORMANCE*

- 12V to 48V DC, redundant power
- -10 to 60 Degree C operation temperature
- IP-30 metal case
- Relay alarm for power breakdown
- Supports 6KV DC Ethernet ESD protection
- Free fall, Shock and Vibration Stability
- DIN-Rail and Wall-mountable hardware design

**LAYER 2 FEATURES**

- Store-and-Forward mechanism
- Prevents packet loss with back pressure (Half-Duplex) and IEEE 802.3x PAUSE frame flow control (Full-Duplex)
- Maximum frame size to 9216 Bytes
- Loop detection / Broadcast / Multicast / Unicast storm control
- Supports VLANs
  - IEEE 802.1Q Tagged based VLAN
  - Up to 16 VLANs groups, out of 4K VLAN IDs
  - Management VLAN

**QUALITY OF SERVICE**

- Ingress/Egress Bandwidth control on TP / Fiber port
- 4 priority queues, strict priority and Weighted Round Robin (WRR)
- Traffic classification by:
  - IEEE 802.1p Class of Service
  - IP DSCP priority
  - IP Address priority

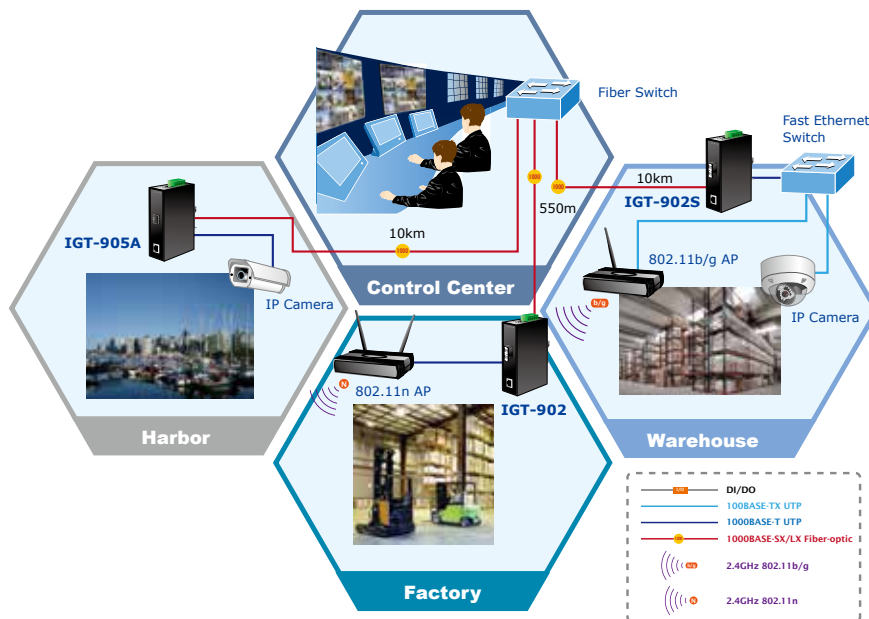
**MANAGEMENT**

- Built-in IP-based Web interface for remote management
- SNMP v1 / v2c and 4 RMON groups, Event trap and SNMP trap support
- Manual IP address setting / DHCP client for IP address assignment
- TS-1000 OAM / IEEE 802.3ah OAM / Loopback Test
- 16 TCP / UDP Filter groups
- Password setting, IP setting and devices description setting through Planet Smart Discovery utility
- Firmware upgrade via remote Web interface
- Reset Button at the front panel for the factory default reset

**APPLICATIONS**

**Transportation Networking**

PLANET's managed industrial Gigabit media converter, IGT-90x series, offers high reliability and security to make sure the continuous industrial operation in harsh environments such as control cabinet of transportation, factory floors or the extremely low or high temperatures environments. In the industrial networking environments, each networked device is required to keep running continuously in the hazardous status. If industrial equipment fails to connect to the network, it might influence the entire operation of industrial systems and thus cause incredible financial loss. By adopting the IGT-90x managed industrial Gigabit media converter which complies with all the requirements of industrial applications, customers may enjoy high reliability, fast recovery capability, and safe Ethernet network operation.



*Fiber-Optic Networking for ISP, Enterprise, and Home*

With high performance of data transmission and easy installation, the IGT-90x series Industrial Managed Gigabit Ethernet Media Converter can build an ISP network solution of FTTH (Fiber to the Home), FTTC (Fiber to the Curb) for ISPs, or FTTB (Fiber to the Building) for small office network environment in the enterprises. The Web Management interface of the IGT-90x series enables network administrators to easily monitor and setup the converter, the transmission speed and duplex through web browsers.

**SPECIFICATION**

Product		Industrial Managed Gigabit Ethernet Media Converter		
Model		IGT-902	IGT-902S	IGT-905A
<b>Hardware Specification</b>				
Copper Interface		1 x 10/100/1000Base-T RJ-45 Auto-MDI/MDI-X port		
Optical Mode		Multi-mode	Single-mode	Vary on module
Optic Wavelength		850nm	1310nm	-
Launch Power(dBm)	Max.	-4 dBm	-3 dBm	-
	Min.	-9.5 dBm	-9.5 dBm	-
Receive Sensitivity		-13.5 dBm	-14.4 dBm	-
Maximum Input power		-18 dBm	-20 dBm	-
Speed	Twisted-pair	10/20Mbps for Half / Full-Duplex		
		100/200Mbps for Half / Full-Duplex 2000Mbps for Full-Duplex		
	Fiber-optic	2000Mbps for Full-Duplex		
Cable	Twisted-pair	10Base-T: 2-pair UTP Cat. 3,4,5, up to 100m		
		100Base-TX: 2-pair UTP Cat. 5, up to 100m		
		1000Base-T: 4-pair STP Cat 5,6 up to 100m		
	Fiber-optic Cable	50/125µm or 62.5/125µm multi-mode fiber cable, up to 220/550m. 9/125µm single-mode cable, provides long distance for 10/15/20/30/40/50/60/70/120km (very on fiber transceiver or SFP module)		
LED indicator		Power: P1, P2, Fault TP: LNK/ACT, 1000 Fiber: LNK/ACT		
Power Input		DC 12V to 48V Redundant power with polarity reverse protection function		
Power Consumption		7.9 Watts / 27 BTU (maximum)		
Operating Environment		Temperature: -10~60 Degree C Humidity: 5~90% non-condensing		
Storage Environment		Temperature: -20~75 Degree C Humidity: 5~90% non-condensing		
Dimension (W x D x H)		135 x 85 x 32 mm		
Weight		423g		
Installation		DIN rail kit and wall mount ear		
<b>Management and Layer 2 Features</b>				
Management Interface		WEB / SNMP v1, v2c Port disable/enable		
Port Configuration		Auto-negotiation 10/100/1000Mbps Full and Half duplex mode selection. Flow Control disable / enable. Bandwidth control on each port.		
VLAN		IEEE 802.1q Tagged Based VLAN , 4K VLAN ID, up to 16 VLAN groups Q-in-Q VLAN		
QoS		Traffic classification based on : • 802.1p priority • IP DSCP field in IP Packet • IP Address		
Bandwidth Control		Ingress / Egress bandwidth control • Rate range: 512kbps to 500Mbps Storm control • Broadcast / Multicast / Unknown Unicast packet		

#### Standard Conformance

<b>Emissions</b>	FCC Class A, CE Class A
<b>Standard</b>	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX / 100BASE-FX IEEE 802.3z 100BASE-SX / LX IEEE 802.3ab Gigabit 1000BASE-T IEEE 802.3x Flow Control and Back pressure IEEE 802.1p Class of service IEEE 802.1Q VLAN Tagging IEEE 802.3ah OAM
<b>Stability</b>	IEC60068-2-32 (Free fall) IEC60068-2-27 (Shock) IEC60068-2-6 (Vibration)

### ORDERING INFORMATION

<b>IGT-902</b>	10/100/1000Base-T to 1000Base-SX Industrial Managed Media Converter (SC,MM)-220/550m
<b>IGT-902S</b>	10/100/1000Base-T to 1000Base-LX Industrial Managed Media Converter (SC,SM)-10km
<b>IGT-905A</b>	10/100/1000Base-T to mini-GBIC Industrial Managed Media Converter (LC,MM/SM)-distance depend on SFP module

### AVAILABLE MINI-GBIC MODULES FOR IGT-905A

<b>MGB-GT</b>	SFP-Port 1000Base-T mini-GBIC module
<b>MGB-SX</b>	SFP-Port 1000Base-SX mini-GBIC module
<b>MGB-LX</b>	SFP-Port 1000Base-LX mini-GBIC module
<b>MGB-L30</b>	SFP-Port 1000Base-LX mini-GBIC module 30KM
<b>MGB-L50</b>	SFP-Port 1000Base-LX mini-GBIC module 50KM
<b>MGB-L70</b>	SFP-Port 1000Base-LX mini-GBIC module 70KM
<b>MGB-L120</b>	SFP-Port 1000Base-LX mini-GBIC module 120KM
<b>MGB-LA10</b>	SFP-Port 1000Base-LX mini-GBIC module LC WDM(TX:1310nm), SM,10km
<b>MGB-LB10</b>	SFP-Port 1000Base-LX mini-GBIC module LC WDM(TX:1550nm), SM,10km
<b>MGB-LA20</b>	SFP-Port 1000Base-LX mini-GBIC module LC WDM(TX:1310nm), SM, 20km
<b>MGB-LB20</b>	SFP-Port 1000Base-LX mini-GBIC module LC WDM(TX:1550nm), SM, 20km
<b>MGB-LA40</b>	SFP-Port 1000Base-LX mini-GBIC module LC WDM(TX:1310nm), SM, 40km
<b>MGB-LB40</b>	SFP-Port 1000Base-LX mini-GBIC module LC WDM(TX:1550nm), SM, 40km