

# Industrial Managed Gigabit Ethernet Media Converter with Wide Operating Temperature (-30~75 degrees C)



## Distance Extension and High Performance

PLANET IGT-905A Industrial Managed Gigabit Media Converter extends communication distance with highly Gigabit performance via fiber optical wire, in which the distance could be extended up to 120km. The IGT-905A is specifically designed with durable components and strong housing to operate reliably in electrically harsh and climatically demanding environments. The IGT-905A 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 **-30 to 75 degrees C**, the IGT-905A can be placed in almost any difficult environment.

## Robust Switching Performance

PLANET IGT-905A Industrial Managed Media Converter efficiently supports conversion between 10/100/1000BASE-T and 100/1000BASE-X Ethernet, and offers remote management and monitoring capabilities. The IGT-905A provides the flexibility of operation made possible with all kinds of 10/100/1000Mbps Ethernet media on RJ45 port and offers highly-stable Gigabit SFP fiber performance. It also delivers the dynamic status report and real-time alarm messages that help the network administrator to easily monitor and manage the entire industrial networks.

## User-friendly Centralized Web Management Interface

For efficient management, the IGT-905A is equipped with remote Web/SNMP (simple network management protocol) interface. With the built-in Web-based management interface, the IGT-905A 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 the SNMP. Moreover, the IGT-905A can manage the remote client devices by the TS-1000/802.3ah OAM (operation, administration, and maintenance) protocol.

## Interface

- 1-port 10/100/1000BASE-T RJ45 with auto negotiation and auto-MDI/MDI-X function
- 1 100/1000X SFP slot

## Industrial Conformance

- 12V to 48V DC, redundant power
- -30 to 75 degrees C operating temperature
- IP-30 metal case
- Relay alarm for port breakdown
- Supports 6KV DC Ethernet ESD protection
- Free fall, shock-proof and vibration-proof
- DIN-rail and wall mounting

## 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 of 9216 bytes
- Loop detection, and broadcast, multicast and unicast storm control
- Supports VLANs
  - IEEE 802.1Q tag-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

**Enhanced Management Features**

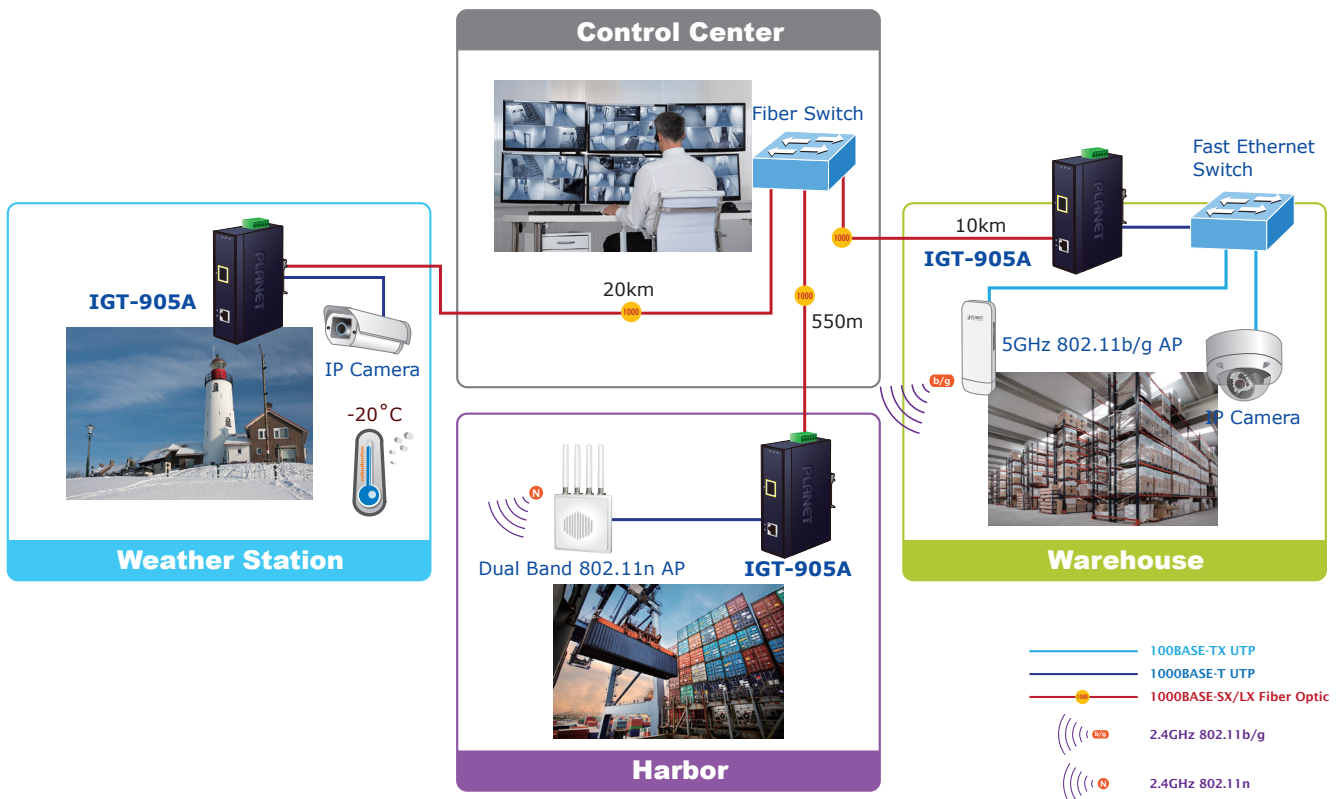
The IGT-905A can be programmed for advanced management functions such as IP address configuration, DHCP client function, port configuration, converter configuration, 802.1Q tag VLAN, Q-in-Q VLAN, QoS, OAM control, Layer 2 protocol filter, broadcast storm control and Ingress/Egress bandwidth control to enhance bandwidth utilization. The enhanced management features offered by the IGT-905A make it ideally suited for mission-critical and real-time control applications in the Industrial Ethernet networks.

- TS-1000 OAM/IEEE 802.3ah OAM/Loop Back Test
- 16 TCP/UDP filter groups
- Password setting, IP setting and device status via Planet Smart Discovery utility
- Firmware upgrade via remote Web interface
- Reset button for the factory default reset
- Display of current operating temperature

**Applications**

**Transportation Networking**

The IGT-905A offers high reliability and security to make sure the industrial operation in harsh environments such as **traffic control cabinet areas, factory floors** and establishments with **extremely low or high temperatures** can operate stably. 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, thus causing incredible financial losses. With the IGT-905A, which complies with all the requirements of industrial applications, customers can expect high reliability, fast recovery capability, and safe Ethernet network operation..



**Fiber-optic Networking for ISPs and Enterprises**

With high-speed data transmission and easy installation, the IGT-905A can build FTTH (Fiber to the Home) and FTTC (Fiber to the Curb) for ISPs, and FTTB (Fiber to the Building) for enterprises. The IGT-905A enables network administrators to easily monitor operations via the Web management interface.

## Specifications

|  |                   |  |
|--|-------------------|--|
| Product                                |                   | IGT-905A   |
| <b>Hardware Specifications</b>         |                   |  |
| Copper Interface                       |                   | 1 x 10/100/1000BASE-T RJ45 Auto-MDI/MDI-X ports  |
| Optic Interface                        |                   | SFP  |
| Optical Mode                           |                   | Vary on module   |
| Speed                                  | Twisted-pair      | 10/20Mbps for half/full duplex<br>100/200Mbps for half/full duplex<br>2000Mbps for full duplex   |
|  | Fiber-optic       | 200/2000Mbps for full duplex   |
| Cable                                  | Twisted-pair      | 10BASE-T: 2-pair UTP Cat. 3,4,5, up to 100 m<br>100BASE-TX: 2-pair UTP Cat. 5, up to 100 m<br>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.<br>• 9/125µm single-mode cable, extending long distance to 10/20/40/60/80/120km (vary on fiber transceiver or SFP module)   |
| LED indicator                          |                   | • Power: P1, P2, Fault<br>• TP: LNK/ACT, 1000<br>• Fiber: LNK/ACT  |
| Power Input                            |                   | DC 12V to 48V<br>Redundant power with reverse polarity protection  |
| Power Consumption                      |                   | 7.9 watts/27BTU (maximum )   |
| Operating Environment                  |                   | Temperature: -30~75 degrees C<br>Humidity: 5~90% non-condensing  |
| Storage Environment                    |                   | Temperature: -40~85 degrees C<br>Humidity: 5~90% non-condensing  |
| Dimensions (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 Configuration                     |                   | Port disable/enable<br>Auto negotiation 10/100/1000Mbps full and half duplex mode selection.<br>Flow control disable/enable. Bandwidth control on each port.   |
| VLAN                                   |                   | IEEE 802.1q tag-based VLAN , 4K VLAN ID, up to 16 VLAN groups<br>Q-in-Q VLAN   |
| QoS                                    |                   | Traffic classification based on :<br>• 802.1p priority<br>• IP DSCP field in IP Packet<br>• IP Address   |
| Bandwidth Control                      |                   | Ingress/Egress bandwidth control<br>• Rate range: 512kbps to 500Mbps<br>Storm control<br>• Broadcast/Multicast/Unknown Unicast packet  |
| <b>Standard Conformance</b>            |                   |  |
| Emissions                              |                   | FCC Class A, CE Class A  |
| Standard                               |                   | IEEE 802.3 10BASE-T<br>IEEE 802.3u 100BASE-TX/100BASE-FX<br>IEEE 802.3z Gigabit SX/LX<br>IEEE 802.3ab Gigabit 1000BASE-T<br>IEEE 802.3x Flow Control and Back pressure<br>IEEE 802.1p Class of service<br>IEEE 802.1Q VLAN Tagging<br>IEEE 802.3ah OAM |
| Stability                              |                   | IEC60068-2-32 (Free fall)<br>IEC60068-2-27 (Shock-proof)<br>IEC60068-2-6 (Vibration-proof)   |

## Ordering Information

|          |  |
|----------|--|
| IGT-905A | 10/100/1000BASE-T to 100/1000BASE-X Industrial Managed Media Converter |
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## Available 1000Mbps Modules for IGT-905A

Gigabit Ethernet Transceiver (1000BASE-X SFP)

| Model        | DDM | Speed (Mbps) | Connector Interface | Fiber Mode  | Distance | Wavelength (nm) | Operating Temp.    |
|--------------|-----|--------------|---------------------|-------------|----------|-----------------|--------------------|
| MGB-GT       | --  | 1000         | Copper              | --          | 100m     | --              | 0 ~ 60 degrees C   |
| MGB-SX(V2)   | YES | 1000         | LC                  | Multi Mode  | 550m     | 850nm           | 0 ~ 60 degrees C   |
| MGB-SX2(V2)  | YES | 1000         | LC                  | Multi Mode  | 2km      | 1310nm          | 0 ~ 60 degrees C   |
| MGB-LX(V2)   | YES | 1000         | LC                  | Single Mode | 20km     | 1310nm          | 0 ~ 60 degrees C   |
| MGB-L40      | YES | 1000         | LC                  | Single Mode | 40km     | 1310nm          | 0 ~ 60 degrees C   |
| MGB-L80      | YES | 1000         | LC                  | Single Mode | 80km     | 1550nm          | 0 ~ 60 degrees C   |
| MGB-L120(V2) | YES | 1000         | LC                  | Single Mode | 120km    | 1550nm          | 0 ~ 60 degrees C   |
| MGB-TGT      | --  | 1000         | Copper              | --          | 100m     | --              | -40 ~ 75 degrees C |
| MGB-TSX      | YES | 1000         | LC                  | Multi Mode  | 550m     | 850nm           | -40 ~ 75 degrees C |
| MGB-TSX2     | YES | 1000         | LC                  | Multi Mode  | 2km      | 1310nm          | -40 ~ 75 degrees C |
| MGB-TLX(V2)  | YES | 1000         | LC                  | Single Mode | 20km     | 1310nm          | -40 ~ 75 degrees C |
| MGB-TL40     | YES | 1000         | LC                  | Single Mode | 40km     | 1310nm          | -40 ~ 75 degrees C |
| MGB-TL80     | YES | 1000         | LC                  | Single Mode | 80km     | 1550nm          | -40 ~ 75 degrees C |

Gigabit Ethernet Transceiver (1000BASE-BX, Single Fiber Bi-directional SFP)

| Model         | DDM | Speed (Mbps) | Connector Interface | Fiber Mode  | Distance | Wavelength (TX) | Wavelength (RX) | Operating Temp.     |
|---------------|-----|--------------|---------------------|-------------|----------|-----------------|-----------------|---------------------|
| MGB-LA10(V2)  | YES | 1000         | WDM(LC)             | Single Mode | 10km     | 1310nm          | 1550nm          | 0 ~ 60 degrees C    |
| MGB-LB10(V2)  |     | 1000         | WDM(LC)             | Single Mode | 10km     | 1550nm          | 1310nm          | 0 ~ 60 degrees C    |
| MGB-LA20(V2)  | YES | 1000         | WDM(LC)             | Single Mode | 20km     | 1310nm          | 1550nm          | 0 ~ 60 degrees C    |
| MGB-LB20(V2)  |     | 1000         | WDM(LC)             | Single Mode | 20km     | 1550nm          | 1310nm          | 0 ~ 60 degrees C    |
| MGB-LA40(V2)  | YES | 1000         | WDM(LC)             | Single Mode | 40km     | 1310nm          | 1550nm          | 0 ~ 60 degrees C    |
| MGB-LB40(V2)  |     | 1000         | WDM(LC)             | Single Mode | 40km     | 1550nm          | 1310nm          | 0 ~ 60 degrees C    |
| MGB-LA80      | YES | 1000         | WDM(LC)             | Single Mode | 80km     | 1490nm          | 1550nm          | 0 ~ 60 degrees C    |
| MGB-LB80      |     | 1000         | WDM(LC)             | Single Mode | 80km     | 1550nm          | 1490nm          | 0 ~ 60 degrees C    |
| MGB-TLA10(V2) | YES | 1000         | WDM(LC)             | Single Mode | 10km     | 1310nm          | 1550nm          | -40 ~ 75 degrees C  |
| MGB-TLB10(V2) |     | 1000         | WDM(LC)             | Single Mode | 10km     | 1550nm          | 1310nm          | -40 ~ 75 degrees C  |
| MGB-TLA20     | YES | 1000         | WDM(LC)             | Single Mode | 20km     | 1310nm          | 1550nm          | -40 ~ 75 degrees C  |
| MGB-TLB20     |     | 1000         | WDM(LC)             | Single Mode | 20km     | 1550nm          | 1310nm          | -40 ~ 75 degrees C  |
| MGB-TLA40     | YES | 1000         | WDM(LC)             | Single Mode | 40km     | 1310nm          | 1550nm          | -40 ~ 75 degrees C  |
| MGB-TLB40     |     | 1000         | WDM(LC)             | Single Mode | 40km     | 1550nm          | 1310nm          | --40 ~ 75 degrees C |
| MGB-TLA80     | YES | 1000         | WDM(LC)             | Single Mode | 80km     | 1490nm          | 1550nm          | -40 ~ 75 degrees C  |
| MGB-TLB80     |     | 1000         | WDM(LC)             | Single Mode | 80km     | 1550nm          | 1490nm          | -40 ~ 75 degrees C  |

## Available 100Mbps Modules for IGT-905A

Fast Ethernet Transceiver (100BASE-X SFP)

| Model    | Speed (Mbps) | Connector Interface | Fiber Mode  | Distance | Wavelength (nm) | Operating Temp.    |
|----------|--------------|---------------------|-------------|----------|-----------------|--------------------|
| MFB-FX   | 100          | LC                  | Multi Mode  | 2km      | 1310nm          | 0 ~ 60 degrees C   |
| MFB-F20  | 100          | LC                  | Single Mode | 20km     | 1310nm          | 0 ~ 60 degrees C   |
| MFB-F40  | 100          | LC                  | Single Mode | 40km     | 1310nm          | 0 ~ 60 degrees C   |
| MFB-F60  | 100          | LC                  | Single Mode | 60km     | 1310nm          | 0 ~ 60 degrees C   |
| MFB-F120 | 100          | LC                  | Single Mode | 120km    | 1310nm          | 0 ~ 60 degrees C   |
| MFB-TFX  | 100          | LC                  | Multi Mode  | 2km      | 1310nm          | -40 ~ 75 degrees C |
| MFB-TF20 | 100          | LC                  | Single Mode | 20km     | 1310nm          | -40 ~ 75 degrees C |

Fast Ethernet Transceiver (100BASE-BX, Single Fiber Bi-directional SFP)

| Model     | Speed (Mbps) | Connector Interface | Fiber Mode  | Distance | Wavelength (TX) | Wavelength (RX) | Operating Temp.    |
|-----------|--------------|---------------------|-------------|----------|-----------------|-----------------|--------------------|
| MFB-FA20  | 100          | WDM(LC)             | Single Mode | 20km     | 1310nm          | 1550nm          | 0 ~ 60 degrees C   |
| MFB-FB20  | 100          | WDM(LC)             | Single Mode | 20km     | 1550nm          | 1310nm          | 0 ~ 60 degrees C   |
| MFB-TSA   | 100          | WDM(LC)             | Multi Mode  | 2km      | 1310nm          | 1550nm          | -40 ~ 75 degrees C |
| MFB-TSB   | 100          | WDM(LC)             | Multi Mode  | 2km      | 1550nm          | 1310nm          | -40 ~ 75 degrees C |
| MFB-TFA20 | 100          | WDM(LC)             | Single Mode | 20km     | 1310nm          | 1550nm          | -40 ~ 75 degrees C |
| MFB-TFB20 | 100          | WDM(LC)             | Single Mode | 20km     | 1550nm          | 1310nm          | -40 ~ 75 degrees C |
| MFB-TFA40 | 100          | WDM(LC)             | Single Mode | 40km     | 1310nm          | 1550nm          | -40 ~ 75 degrees C |
| MFB-TFB40 | 100          | WDM(LC)             | Single Mode | 40km     | 1550nm          | 1310nm          | -40 ~ 75 degrees C |