User Manual

GMC1000
10/100/1000 Base-T/SFP to SFP Gigabit Media Converter

Version 1.0
October 2008

Caution

Electronic Circuit devices are sensitive to static electricity. Dry weather conditions or walking across a carpeted floor may cause you to acquire a static electric charge.

To protect your switch, always:

- Touch the metal chassis of your computer to ground the static electrical charge before you handle the switch.
- Pick up the switch by holding it on the left and right edges only.

Electronic Emission Notices

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

European Community (CE) Electromagnetic Compatibility Directive

This equipment has been tested and found to comply with the protection requirements of European Emission Standard EN55022/EN60555-2 and the Generic European Immunity Standard EN50082-1.

EMC:	EN55022(1988)/CISPR-22(1985)	class A
	EN60555-2(1995)	class A
	EN60555-3	
	IEC1000-4-2(1995)	4K V CD, 8KV, AD
	IEC1000-4-3(1995)	3V/m
	IEC1000-4-4(1995)	1KV – (power line), 0.5KV – (signal line)

Australian C-Tick Compliance.

This equipment is compliant with the required Australian C-Tick standards

1. Introduction

The GMC1000 provides modular Gigabit Ethernet Media Conversion. With a 10/100/1000 Copper Interface, Paired with a Modular SFP interface, Converting to a second SFP Interface.

This Flexible design provides for Media Conversion from Copper 10Mbps, 100Mbps and 1000Mbps to SFP in Multimode or Singlemode - or - Fibre to Fibre in Multimode or Singlemode.

Fig 1. View of the GMC1000

2. Checklist

Before you start installing your media converter, verify that the package contains the following:

- The GMC1000 Media Converter
- AC – DC Power Adapter
- This Users Manual CD-ROM

Please notify your supplier immediately if any of the aforementioned items are missing or damaged.

3. SFP's (Optional Items)

Model	Description
MGBIC-T	Mini-GBIC, Copper, 100metres
MGBIC-MLC	Mini-GBIC, Multimode Fibre (LC), 850nm. 500metres (SX)
MGBIC-SLC10	Mini-GBIC, Single Mode Fibre (LC), 1310nm. 10Km (LX)
MGBIC-SLC4013	Mini-GBIC, Single Mode Fibre (LC), 1310nm. 40Km (LHX)
MGBIC-SLC4015	Mini-GBIC, Single Mode Fibre (LC), 1550nm. 40Km (LHX)
MGBIC-SLC70	Mini-GBIC, Single Mode Fibre (LC), 1550nm. 70Km (ZX)
MGBIC-SLC120	Mini-GBIC, Single Mode Fibre (LC), 1550nm. 120Km (EZX)
MGBIC-WDMS3.20	Mini-GBIC, Single Mode Fibre WDM, 1310nm. 20Km
MGBIC-WDMS5.20	Mini-GBIC, Single Mode Fibre WDM, 1550nm. 20Km
MGBIC-WDMS3.40	Mini-GBIC, Single Mode Fibre WDM, 1310nm. 40Km
MGBIC-WDMS5.40	Mini-GBIC, Single Mode Fibre WDM, 1550nm. 40Km
MGBIC-CWDM-70	Mini-GBIC, CWDM Single Mode Fibre (LC), 1470nm - 1610nm. 70Km

Note:

- 1000Mbps Single Fibre WDM transceiver is designed with Wavelength Division Multiplexing (WDM) technology that transports bi-directional full duplex signals over a single fibre simultaneously.
- MGBIC-WDMS3.20 and MGBIC-WDMS5.20 must be installed in pairs, i.e., MGBIC-WDMS3.20 at one end and MGBIC-WDMS5.20 at the other.

4. LED Desciption

LED	Color	Function
PWR	Green	Lit when +5V power is present
P2 SFP LNK/ACT	Green	Lit when fibre connection is good Blinks when any traffic is present
P1 SFP LNK/ACT	Green	Lit when fibre connection is good Blinks when any traffic is present
P1 TP SPD	Green/ Amber	Green: Lit when 1000Base-T is active Amber: Lit when 100Base-TX is active OFF: when 10Base-T is active
P1 TP LNK/ACT	Green	Lit when TP connection is good Blinks when any traffic is present

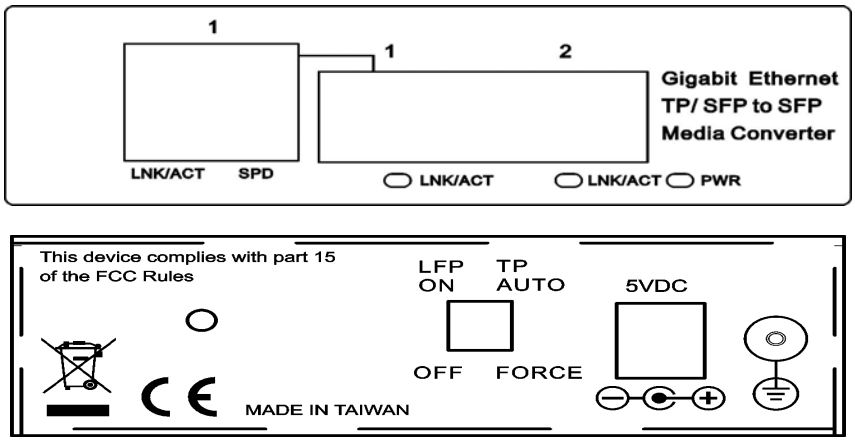

Fig 2. Front and Rear Panel of the GMC1000

5. Installing the Converter

Note: Wear a grounding device for electrostatic discharge.

P2 **SFP Port**	**Default: 1000FDX** Insert the required SFP transceiver and attach the fibre cable. The Tx, Rx fibre cable must be paired at both ends
P1 **SFP Port**	**Default: 1000FDX** Optionally Insert the required SFP transceiver and attach the fibre cable. The Tx, Rx fibre cable must be paired at both ends
P1 **TP Port**	Attach TP Cat. 5 or higher cable to TP port Mode: 10/100/1000Mbps with NWay

6. DIP Switch Settings

Converter TP Port 1000TP	AUTO, FORCE selectable: Bit 2 of SW1 a. AUTO: 10/100/1000 Nway (default) b. FORCE: 1000 FDX
Converter LFP Function	LFP function selectable: Bit 1 of SW1 a. LFP function: ON (default) b. LFP function: OFF

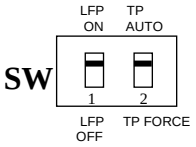

Fig. 3 SW1—Bit 1, 2 Configuration and Setting

SW1-1 LFP function: LFP ON (default) or OFF
SW1-2 TP port mode: AUTO (default) or FORCE

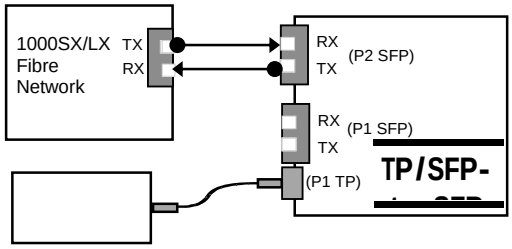

Fig. 4 Basic Network Configuration

- **LFP : (Link Fault Pass-through)**

If the Copper port is unplugged, the converter stops transmission on the fibre port. This causes the remote fibre node link to fail as well. The LED's on the converter will now show link failure on both the copper and fibre ports. If the fibre link fails, the converter restarts auto-negotiation on the copper port but always stays in the link failure state. This causes the remote copper node link to fail as well. The LED's on the converter will now show link failure on both the copper and fibre ports.

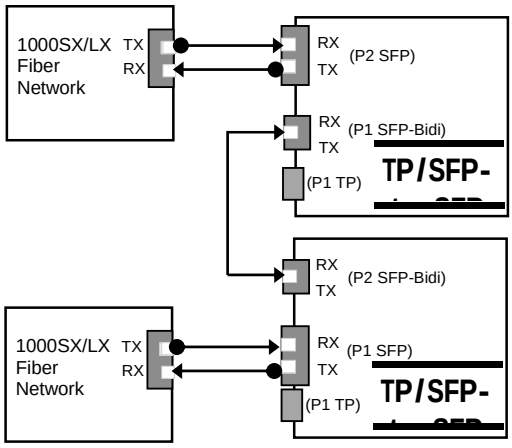

Fig. 4 LFP Diagram

7. Technical Specifications

- **Standards:**
  IEEE802.3 10Base-T,
  IEEE802.3u 100Base-TX,
  IEEE802.3z/ab 1000Base-T
  IEEE802.3x full-duplex flow control,
  1000Base-SX/LX
- **UTP Cable:** Cat. 5 cable or above up to 100m
- **Fibre Cable:**
  9/125μm single-mode
  62.5/125μm, 50/125μm multi-mode
- **LED Indicators :**
  PWR (Power),
  P2 SFP LNK/ACT (LINK/ACT),
  P1 SFP LNK/ACT (LINK/ACT),
  P1 TP LNK/ACT (LINK/ACT),
  P1 TP SPD (10/100/1000Mbps)

- **Data Transfer Rate:**

Speed	Forwarding Rate
1000Mbps	1,488,000 PPS
100Mbps	148,800 PPS
10Mbps	14,880 PPS

- **TP:** 10/100/1000FDX/HDX with NWay auto-negotiation
  Fibre: 1000FDX
- **Power Requirement:** 0.9A up @+5VDC
- **Power Consumption:** 3.6W
- **Ambient Temperature:** 0° to 40°C
- **Humidity:** 5% to 90%
- **Dimensions :** 140.7(W) x 87.7(D) x 29.4(H) mm