

- b. Insert the SFP Fiber transceiver into the SFP receptacle on the GM4.

NOTE: The release latch of the SFP Fiber transceiver must be in the closed position before insertion.

The GM4 module has the ability to detect the speed and automatically configure the port to match the speed of approved SFP transceivers. Some SFP fiber transceivers will need to be configured using the *port* CLI commands to configure the speed of the port to match the speed of the installed SFP transceiver. See the full version of the User Manual for more information.

- c. Connect the UTP port via a Category 5 cable to a 10BASE-T, 100BASE-TX or 1000BASE-T Ethernet device.
- d. Connect the appropriate multimode or single-mode fiber cable to the fiber port of the installed module. It is important to ensure that the transmit (TX) is attached to the receive side of the device at the other end and the receive (RX) is attached to the transmit side. Single-fiber (SF) transceivers operate in pairs. The TX wavelength must match the RX wavelength at the other end and the RX wavelength must match the TX wavelength at the other end.

3) CONFIGURE MODULE VIA COMMAND LINE INTERFACE

The GM4 can be configured by attaching the serial port to a DB-9 serial (RS-232) equipped computer with terminal emulation software such as ProComm or Putty. The Serial Console Port (DCE) is a mini DIN-6 female connector which can be changed to a DB-9 connector with the included adapter. Attach the ends of a serial cable to the serial port of the PC and the Serial Console Port of the module.

Start the terminal emulation program and select the correct COM Port. Set the serial port to the following:

Bits Per Second	57,600	Stop Bits	1
Data Bits	8	Parity	NONE
Hardware Flow Control	NONE		

4) VERIFY OPERATION

Once the module has been installed and configured per steps 1 - 3, verify the module is operational by viewing the LED indicators.

LED Function "Legend"	Color	OFF State	ON/Blinking State
Power "PWR"	Green	No power	ON: Module has power
P'x' Link Activity "100" 'x' indicates port number	Green	Port not linked at 100M	ON: Port linked at 100M Blinking: Data activity
P'x' Link Activity "1000" 'x' indicates port number	Green	Port not linked at 1000M	ON: Port linked at 1000M Blinking: Data activity
P'x' Link Activity "100" and "1000" 'x' indicates port number	Green	Port not linked at 10M	ON: Port linked at 10M Blinking: Data activity
Test/Alarm "Tst/Alm"	Green	Reserved	Reserved
Management Mode "Msr/Slv"	Green	N/A	ON: Master (normal) 5 Hz Blinking: Secure Slave

Figure 5: LED Indicators

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iConverter 2-Port Fiber to Copper GM4 Network Interface Device Quick Start Guide

PRODUCT OVERVIEW

This document describes the basic installation and configuration of the 2-Port Fiber to Copper GM4 standalone modules.

The GM4 features one SFP ports, one UTP port and a RS-232 Serial Console Port. The SFP port supports SERDES 100/1000BASE-X SFP fiber and Omnitron approved SGMII 10/100/1000BASE-T copper transceivers.

NOTE: When using third party 100BASE-FX and unapproved SGMII SFPs, the port must be manually configured using the Command Line Interface (CLI). Interface settings can be changed using the *port* command. For more information including the complete User Manual on the 2-Port GM4 modules, access Omnitron's registration page and register the product:

http://www.omnitron-systems.com/forms/product_registration.php

INSTALLATION PROCEDURE

- 1) Configure DIP-Switches
- 2) Install Standalone Module and Connect Cables
- 3) Configure Module via Command Line Interface
- 4) Verify Operation

1) CONFIGURE DIP-Switches

DIP-SWITCH BANK 1

SW1: P1 AUTO/MANUAL NEGOTIATION "AN / Man"

When this DIP-switch is in the "AN" position (factory default), the port automatically determines the duplex and pause modes of the connected device. If the connecting device cannot provide the proper signal to indicate its own mode of operation, the DIP-switch should be set to the "Man" position. When in manual mode, no capabilities are advertised and the port operates in full-duplex mode.

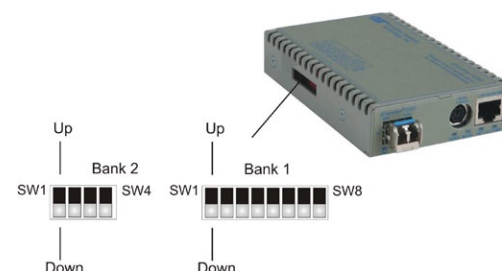


Figure 1: DIP-switch Location

NOTE: If a 1000Mbps fiber transceiver is installed, the port always operates in 1000Mbps full-duplex mode.

NOTE: If a 100Mbps fiber transceiver is installed, the port will operate in 100Mbps full-duplex manual mode.

The function of DIP-switch Bank 1 is outlined in Figure 2 on the next page.

Switch	DOWN (Default)	UP
1	AN: P1 Auto-neg.	Man: P1 Manual Neg.
2	AN: P2 Auto-neg.	Man: P2 Manual Neg.
3	1000: P2 1000Mbps	10-100: P2 10 or 100Mbps
4	100: P2 100Mbps	10: P2 10Mbps
5	FDX: P2 Full-Duplex	HDX: P2 Half-Duplex
6	Link Modes	
7		
8		

Figure 2: DIP-switch Bank 1

SW6	SW7	SW8	Link Mode
DN	DN	DN	Link Segment (LS)
UP	DN	DN	Link Propagate (LP)
DN	UP	DN	Remote Fault Detect + Link Segment (RFD+LS)
UP	UP	DN	Remote Fault Detect + Link Propagate (RFD+LP)
DN	DN	UP	Symmetrical Fault Detect (SFD)
UP	DN	UP	Asymmetrical Link Propagate Port 1 to Port 2 (ALP P1 P2)
DN	UP	UP	Asymmetrical Link Propagate Port 2 to Port 1 (ALP P2 P1)
UP	UP	UP	Asymmetrical Link Propagate Port 1 to Port 2 + Port 1 Remote Fault Detect (ALP P1 P2 + P1 RFD)

Figure 3: Link Mode Settings

SW2, SW3, SW4, SW5 - UTP Configuration

SW2 P2 AN/MAN (UTP)	SW3 P2 1000/100-10 (UTP)	SW4 P2 100/10 (UTP)	SW5 P2 FDX/HDX (UTP)	UTP Mode of Operation
AN	1000	10 or 100	FDX	The UTP port is set to auto-negotiation with the following modes advertised: 1000F, 1000H, 100F, 100H, 10F, 10H
AN	1000	10 or 100	HDX	The UTP port is set to auto-negotiation with the following modes advertised: 1000H, 100F, 100H, 10F, 10H
AN	10-100	100	FDX	The UTP port is set to auto-negotiation with the following modes advertised: 100F, 100H, 10F, 10H
AN	10-100	100	HDX	The UTP port is set to auto-negotiation with the following modes advertised: 100H, 10F, 10H
AN	10-100	10	FDX	The UTP port is set to auto-negotiation with the following modes advertised: 10F, 10H
AN	10-100	10	HDX	The UTP port is set to auto-negotiation with the following modes advertised: 10F, 10H
Man	1000	10 or 100	FDX	The UTP port is set to auto-negotiation with the following modes advertised: 1000F (When set to 1000, the port is always in AN mode)
Man	1000	10 or 100	HDX	The UTP port is set to auto-negotiation with the following modes advertised: 1000H (When set to 1000, the port is always in AN mode)
Man	10-100	100	FDX	The UTP port is set to manual negotiation and is forced to: 100F
Man	10-100	100	HDX	The UTP port is set to manual negotiation and is forced to: 100H
Man	10-100	10	FDX	The UTP port is set to manual negotiation and is forced to: 10F
Man	10-100	10	HDX	The UTP port is set to manual negotiation and is forced to: 10H

Figure 4: UTP Configuration

SW6, SW7, SW8 - LINK MODES

The DIP-switches shown in Figure 3 above, are used to configure the link modes. It is recommended to have link modes DOWN (default) during the initial installation. After the circuit has been tested and operational, configure the module for the desired mode.

For detailed information on the operation of the different Link Modes, download the application note “*iConverter* Link Modes” available on Omnitron’s web page:

DIP-SWITCH BANK 2

DIP-switch Bank 2 is available on units with product revision of xx/45 or later. The product revision is located on the label on the bottom of the unit. These features are available through management access.

The function of DIP-switch Bank 2 is outlined in the Figure 5 below.

Switch Position	Description	Down (Default)	Up
1	Reserved	-	-
2	Reserved	-	-
3	Reserved	-	-
4	Zero Touch	Disable	Enable

Figure 5: DIP-switch Bank 2

SW1, SW2 and SW3: Reserved

These DIP-switches are reserved and must be left in the default Down position.

SW4: Zero Touch

This DIP-switch configures the Zero Touch Provisioning (ZTP) behavior. ZTP utilizes DHCP and TFTP to automatically configure the module during the initial setup.

ZTP is disabled by default. When SW4 is in the UP position, ZTP is enabled. When enabled, the module will start the DHCP process on power up or module reboot. Through the process, the module will request an IP address and the IP address of the TFTP Server. After the DHCP process has been completed and a TFTP Server IP address has been obtained, the module will request configuration files from the TFTP Server. When the files have been received, the module will load the configuration files and restart.

2) INSTALL STANDALONE MODULE AND CONNECT CABLES

- The GM4 is available in tabletop and wall-mount models. For wall-mounting, attach the GM4 to a wall, backboard or other flat surface. For tabletop installations, place the unit on a flat level surface. Attach the rubber feet to the bottom of the GM4 to prevent the unit from sliding. Make sure the unit is placed in a safe, dry and secure location.

To power the device using the AC/DC adapter, connect the DC plug at the end of the wire on the AC/DC adapter to the DC connector on the device, Then connect the AC/DC adapter to an AC outlet. Confirm that the unit has powered up properly by checking the power status LED located on the front of the unit.

To power the unit using a DC power source, prepare a power cable using a two conductor insulated wire (not supplied) with a 14 AWG gauge minimum. Cut the power cable to the length required. Strip approximately 3/8 of an inch of insulation from the power cable wires. Connect the power cables to the unit by fastening the stripped ends to the DC power connector. Connect the power wires to the DC power source. The Power LED indicates the presence of power.

WARNING: Note the wire colors used in making the positive and negative connections. Use the same color assignment for the connection at the DC power source.

NOTE: If mounting with a safety ground attachment, use the safety ground screw at the rear of the unit.