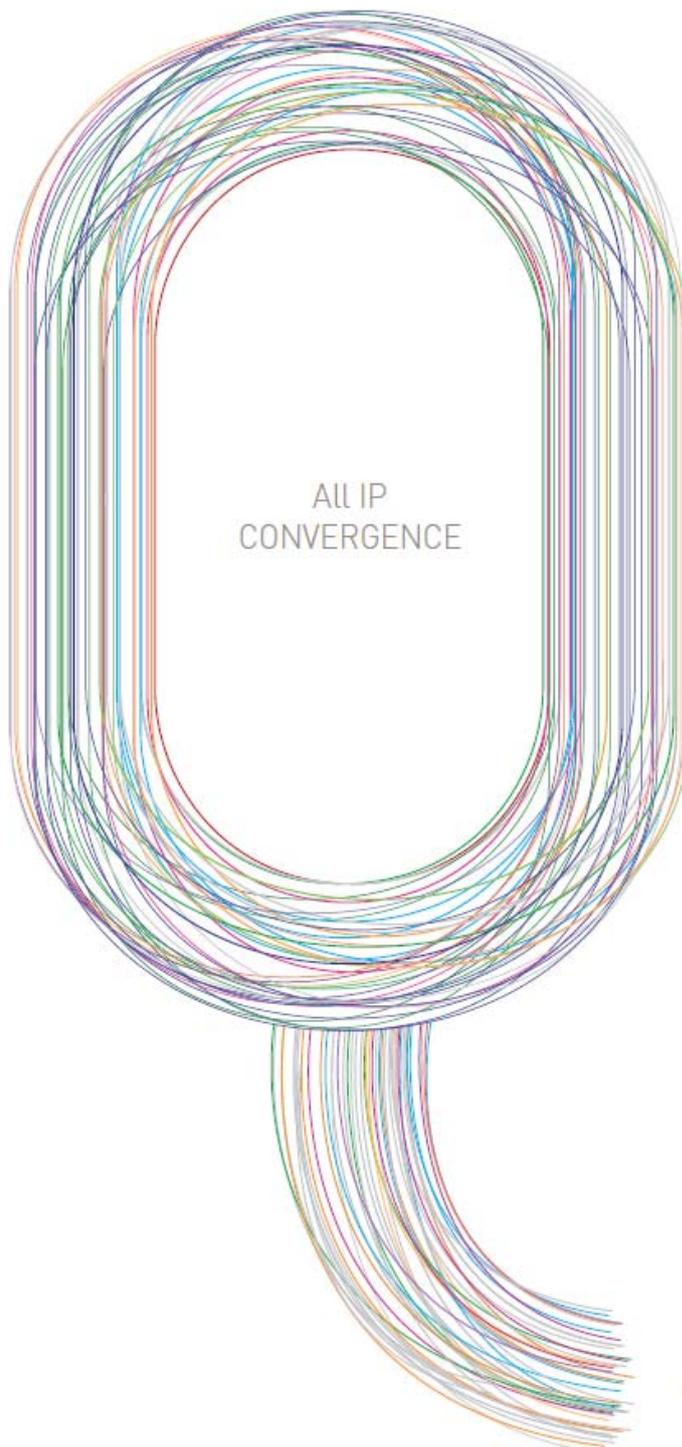


P3424GP

■ Installation Guide



ubiQuoss

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Preface

This preface provides the overview of P3424GP installation guide, which describes guide conventions, and lists other publications that may be useful.

Introduction

This installation guide describes how to install P3424GP, the PON OLT of ubiQuoss.

- It describes how to install P3424GP and connection it to other devices.
- Chapter 1 describes the name and function of each part of P3424GP and Chapter 2 describes the necessary items and notes for the installation. The user is recommended to understand P3424GP and remember notes through Chapter 1 before the installation because it will be very useful for the user to install and use P3424GP safely.
- This installation guide is for the experts with the experience of installing and managing network devices. Consequently, see other network-related references for the professional terms that are not explained in this user guide.

Related Documents

P3424GP switch manual switch manual set includes the followings. For additional information on this equipment, refer to the following manuals.

Manual	Contents
<i>Hardware Installation Guide</i>	Hardware installation Initial operating environment configuration
<i>User Guide</i>	Operating configuration for services System operation, administration and maintenance Trouble Shooting



Notice

You can download or request the latest documents and information on the products of ubiQuoss Inc. including P3424GP from the website (<http://www.ubiQuoss.com>).

This document is the manual for the P3424GP.

Symbols in this Guide

The symbols below are used to indicate the product names and notes in the user guide.

Description of Symbols

The installation guide uses the following icons and fonts to indicate special messages for the reader.

	Note	Presents the useful contents related to the user guide, the references and data related to the product use, etc.
	Caution	Describes the situation that data loss and incorrect product operation can occur, and provides the proper actions to take in the situation.
	Warning	Describes the situation that product damage and the user's injury can occur, and provides the proper actions to take in the situation.
	Warning	Warning: Optical Terminal Do not look at the optical terminal directly. It could cause serious damage to your eyes.
	Warning	Do not disassemble or assemble the product. The user must not remove/attach the product cover or disassemble/assemble the product when the power is on. Otherwise, it can cause personal injury or property loss.

Organization

The installation guide consists of four chapters and two appendices. The summary of each part is described below.

Chapter 1. Introduction

This chapter introduces the product types and characteristics of P3424GP and the name and function of each part as well.

Chapter 2. Installation Preparation

This chapter describes the items to check before installing P3424GP and how to install it.

Chapter 3. Installation

This chapter describes how to install P3424GP.

Appendix A. Product Spec

Appendix A describes the product specifications of P3424GP.

Appendix B. Cable Spec

Appendix B describes the specifications of the cable used to connect the ports of P3424GP.

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Chapter 1. Introduction

This chapter introduces the product types and characteristics of P3424GP and the name and function of each part as well.

The chapter consists of the followings:

- Overview
- Characteristics

Overview

This section describes the function and characteristics of an ONU device, P3424GP.

Main function and characteristics

P3424GP is a 24 10/100 Base-T port Optical Network Unit (ONU) which shares the data of 1.25Gbps with one optic line by using a manual optical distribution (OLT) device. It adopts the state-of-the-art E-PON technology.

P3424GP, installed in an apartment or for a group of house, is connected to the IP terminal devices such as a subscriber's PC or VoIP phone and provides the high speed internet of up to 100 Mbps per subscriber.



Note

The configuration of a manual optical subscriber line device

This manual optical subscriber line device consists of the followings;

- An optical line terminal device (OLT) that performs IP routing and Ethernet switching, while being connected to the Internet core network in central office, and provides the manual optical subscriber line interface as well.
- At a remote node, a manual optical distribution device (RN) that divides one optical line up to 32 without power and management.
- An optical subscriber terminal device (ONT) that provides the manual optical subscriber line interface.

Adopting the state-of-the-art technology, P3424GP supports various functions superior to those of the existing Ethernet switch, such as the Quality of Service (QoS) function, the management function that allows to take prompt actions against the problems with the system and a subscriber line, the security function that secures subscriber information safely, and the subscriber management function that secures a user's right from illegal users such as cracker.

VC3624FG supports 24 10/100base-Tx ports for the subscriber interface and two GPON interfaces that are connected to OLT-RN.

Characteristics

Front view of System

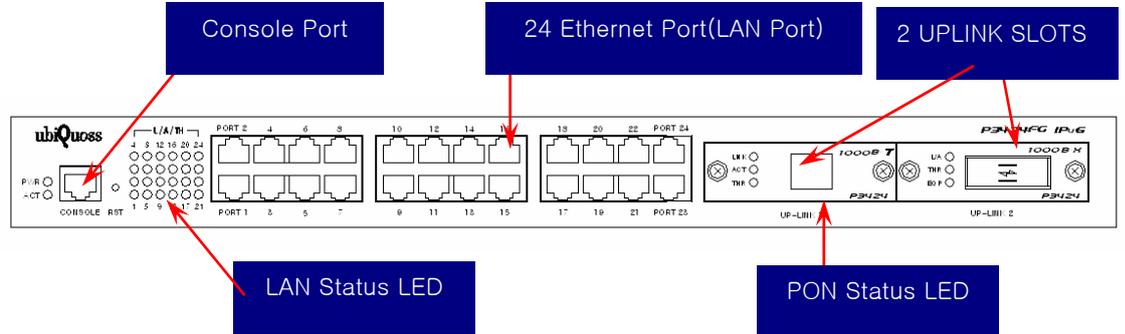


Figure 1: Front view of P3424GP

Ethernet (LAN) Port Block

- This equipment provides Ethernet (LAN) interfaces to be connected to Ethernet ports of previously installed L2 switches for transmission of data.
- This equipment supports total 24 ports of Ethernet (LAN).
- Each port supports LINK LED, ACT, TH LED.

LINK / ACT / TH LED

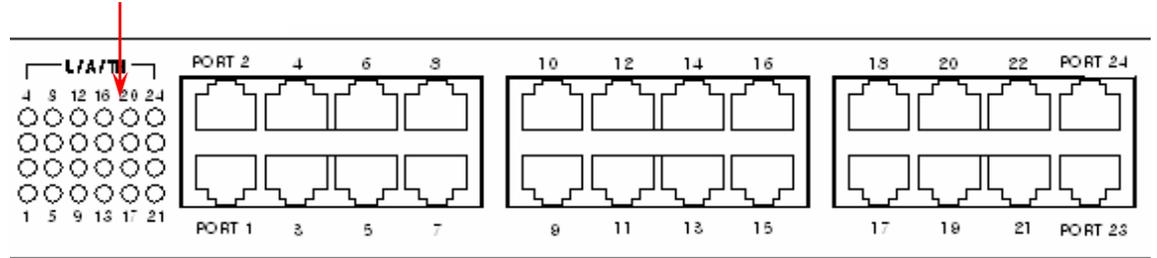


Figure 2: Ethernet (LAN) Port part

LEDs

Table 1: Ethernet (LAN) LED Indicators

LED	Activity	Function
LINK / ACT / TH	ON (Green)	Normal link status
	ON (RED)	Data Threshold status
	Blink (Green)	Data transmission status
	OFF	Link down status

Management and Control Block

- A serial (RS-232) Console port
- RESET BUTTON
- PWR / ACT LED

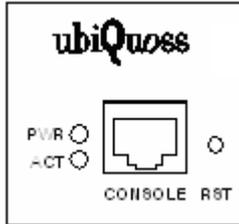


Figure 3: Management and Control Block

1. Console Port

The console port is used to connect a console terminal to P3424GP directly for management purpose. The console cable (Serial cable) for connecting between the console port and the console terminal comes with the product. PC or workstation with terminal emulator program installed can be used as a Console Terminal. The following table shows the specification of the console port.

Table 2: Specification of Console port

Item		Settings
Specification		UART
Baud rate		9600 bps
Connector type		RJ-45
Terminal Configuration	Data bit	8 bit
	Stop Bit	1 bits
	Parity Bit	None
	Flow Control	None

2. RESET BUTTON

The reset button is for cold rebooting of the system. When a cold reboot is required for the system, please press this button using a thin material like a pen or a pin set.

3. PWR / ACT

The table below summarizes the LEDs for indicating the operation status of the System.

Table 3. System operation status LED indicators

LED	Activity	Function
PWR	ON (Green)	System Power ON
	OFF	System Power OFF

ACT	ON (Green) OFF	System NORMAL System ABNORMAL
-----	-------------------	----------------------------------

Uplink Slot



Figure 4: Uplink slot and status LED's

Table 4: GPON Uplink LED

LED	Activity	Function
LINK / ACT / TH	ON (Green)	Normal link status
	ON (RED)	Data Threshold status
	Blink (Green)	Data transmission status
	OFF	Link down status

Rear View of the Module

The rear panel of P3424GP consists of power supply AC INLET (110/220 FREE VOLTAGE), screws for chassis grounding, Module ON/OFF switch. The following figure shows the rear view of P3424GP.

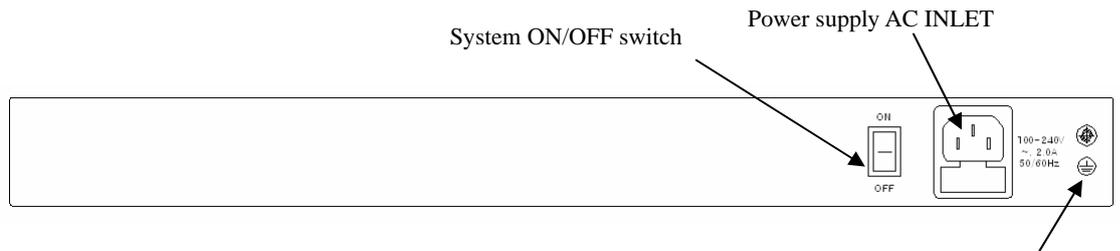


Figure 5: Rear view of P3424GP

FAN Ventilation Hole

FAN ventilation hole is the part that blows out hot air inside of the equipment. Please pay attention not to block this hole when installing the equipment.

Chapter 2. Installation Preparation

This chapter describes the items to check before installing P3424GP and how to install it.

Checking Items

Checking safety

The user should check the items below before installing or using the P3424GP ONU.

Checking electric safety

The user must not remove/attach the product cover or disassemble/assemble the product when the power is on. Otherwise, it can cause personal injury or property loss.

Check any possibility that a danger occurs in the installation place. The product should not be installed in the place with the environment such as a wet floor, ungrounded power extension cable, the power cord that is worn out so much that the inside is visible, the floor without any grounding facility, high temperature, high humidity, and ill-ventilated place.

Checking the installation place

P3424GP is the product designed for indoor use. The equipment can be mounted on 19" standard Rack and the brackets for rack mounting are supplied together with the product in the package.

Please keep the equipment away from water or moisture.

Please place the equipment in the location where power supply and cable wiring is convenient.

Check if the power supplied to the installation place is "clean." If the supplied power has many sparks and noises, install a power adjustment device.

An electronic product generates heat during operation. If the air circulation is not proper in the product installation place, the product might not operate well due to the generated heat. Check if the air circulation in the installation place is proper.

Check if the installation place is clean. If an optical connector has dust, it can cause an error or an improper operation.

Please install the equipment in a clean environment where temperature and humidity control is available.

Checking the Package

The user should check the following components of the Module before starting installing of P3424GP ONU:

Open the box and check if the items below are all included in the box.

1. P3424GP Module and Main Body
2. AC INLET CABLE
3. Installation Guide and Operator's manual of P3424GP
4. Serial cable: To connect to the management terminal
5. Brackets and screws for Rack mounting

Checking the installation environment

This section describes the necessary installation environment to install and use P3424GP ONU safely.

It is recommended to keep the P3424GP ONU temperature and humidity stable. The product can be used in the following environment:

- Operating temperature: 0 °C ~ +50 °C
- Relative humidity: 20~80%
- Power consumption: Max 16.64 W
- Adaptor input voltage: 110~220 V \pm 15%, 60 \pm 3 Hz

Chapter 3. Installation

This chapter describes how to install P3424GP.

Installation Procedure

For P3424GP, the Module main body, power adapter, and all other accessories are packed separately for shipment. Please follow the following steps for installation.

1. Check the components.
2. Decide the installation place, and place the P3424GP main body. P3424GP can be mounted on a 19" Rack. When mounting the equipment on a 19" Rack, please fix it to the rack using brackets for P3424GP.
3. If the equipment is not mounted on the Rack, please install the equipment on the place corresponding to the requirements of "2. Installation Place" section.
4. Connect power adapter and check power status LED on the front panel to see if the power is being supplied normally.
5. If Module setup or check through console port is needed, please connect the console port to the management terminal.
6. Once the power is supplied normally, please check if each interface LEDs of P3424GP is working normally.

Appendix A. Product Spec

Appendix A describes the product specifications of P3424GP.

Table 5: Specification

Hardware Specification	
Module Architecture & Console	24 fixed 10/100Base-TX ports (Auto-negotiation, Auto-Sensing, Auto MDI/MDIX) 2 Expansion Module : 1 Port per Option Module, GPON Interface (SC/APC) RS-232C Serial Port (RJ-45 type)
Memory	64MB Main Memory 16MB Flash Memory
Physical Dimension	19" Rack Mount Type 44mm(H)x482.6mm(W)x260mm(D) Max 4Kg
Environment Conditions	
Power	AC, DC
Input power and frequency	110~220 VAC / 50~60 Hz, -44 ~ -52 VDC
Power consumption	Max 16.64 W
Operating temperature	0℃~ +50℃
Storage temperature	-20℃~ +60℃
Performance	
Switching Fabric	12.8 Gbps non-blocking
Throughput	6.5 Mpps wire-speed L2 Switching
IPv6	Enabled
Capacity	
MAC Address	Up to 16K MAC Management
VLAN	Up to 256 VLAN Private Edge VLAN, 8021.Q Tag VLAN (Max 256 Tag VLAN) Link Aggregation (802.3ad) : 13 group, Max 8 port/group
Services and Features	
Filtering, Security & QoS	IEEE 802.1p QoS, Diff-serv support Congestion Management Filtering : Mac address, Mac address Count limit, Netbios, NBT, DHCP, Broadcast Storm, Selective handling of specified IP address, IP Packet filtering, Detection of IP address collision, IP Sub-network range blocking Virus Filtering : DoS prevention, Warm virus Filtering Subscriber Traffic control by ACLs (Access Control Lists)
Bandwidth Management	Hardware-based Rate Limiting Rate Limiting : 1Mbps per Ethernet port Rate Limiting : 1Mbps per Gigabit port Egress Traffic Shaping per Port Ingress Traffic Policing per Flow/Packet Hardware Based Symmetric & Asymmetric Rate Limiting
Management	SNMP v1/v2, RMON, MIB-II Remote S/W Upgrade, Telnet, TFTP, FTP, Port Mirroring CLI, Syslog, Access level control for administrator,

	RADIUS
Functions	STP(802.1D), RSTP(802.1w) DHCP relay/DHCP snooping NTP (Network Time protocol) Client Jumbo Frame packet support : 9022byte Stacking & IP Clustering : Max 8 Stacking
Multicasting Protocol	IGMP v2.0, IGMP snooping, IGMP proxy-reporting
Standards	
IEEE Standards	802.1D Spanning Tree Protocol 802.1w RSTP 802.1p Priority Control 802.1Q VLAN 802.3 10Base-T Ethernet 802.3u 100Base-X Fast Ethernet 802.3x Flow Control 802.3ad Link Aggregation 802.3z 1000Base-X Gigabit Ethernet
IETF Standards	RFC 768 UDP RFC 791 IP RFC 903 TCP RFC 2131 DHCP Relay RFC 2236 IGMP v2 RFC 1112 IGMP
Management Standards & MIB	RFC 783 TFTP RFC 854 Telnet RFC 1157 SNMP v1 RFC 1213 MIB-I I RFC 1493 Bridge-MIB RFC 1757 RMON-MIB RFC 1902 SNMP v2 RFC 1907 SNMP-MIB RFC 1643 Ethernet-like Internet MIB

Appendix B. Cable Spec

Appendix B describes the specifications of the cable used to connect the ports of P3424GP.

Appendix B consists of:

- Ethernet cable
- Optical cable
- Console cable

Ethernet cable

In case of connecting the management Ethernet port on the front of P3424GP, use the UTP cable that has RJ-45 connectors on both sides.

In case of using a twisted-pair cable, choose the one of a proper category, depending on the device speed.

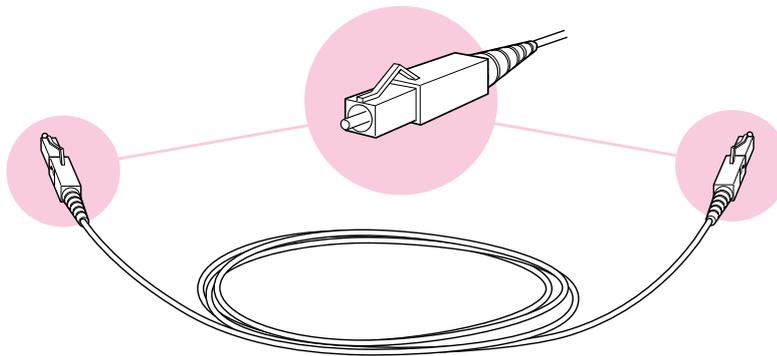
- 10M: Category 3, 4
- 100M: Category 5
- 1000M: Category 5, 5+, 6



Optical cable

For the GPON link of P3424GP, use the single-mode optical cable that has SC/APC connectors on both sides.

If the other optical cables than this are used, the communication might fail or the data transmission distance cannot be guaranteed.



Console cable

Operator can manage the Module on site by connecting the RJ-45 type console port of P3424GP to the management terminal. The configuration of terminal mode connected to the console port is as follows.

Table 6: Configuration of terminal mode

Item		Settings
Specification		UART
Baud Rate		9600 bps
Connector type		RJ-45
Terminal Configuration	Data Bit	8 bit
	Stop Bit	1 bits
	Parity Bit	None
	Flow Control	None

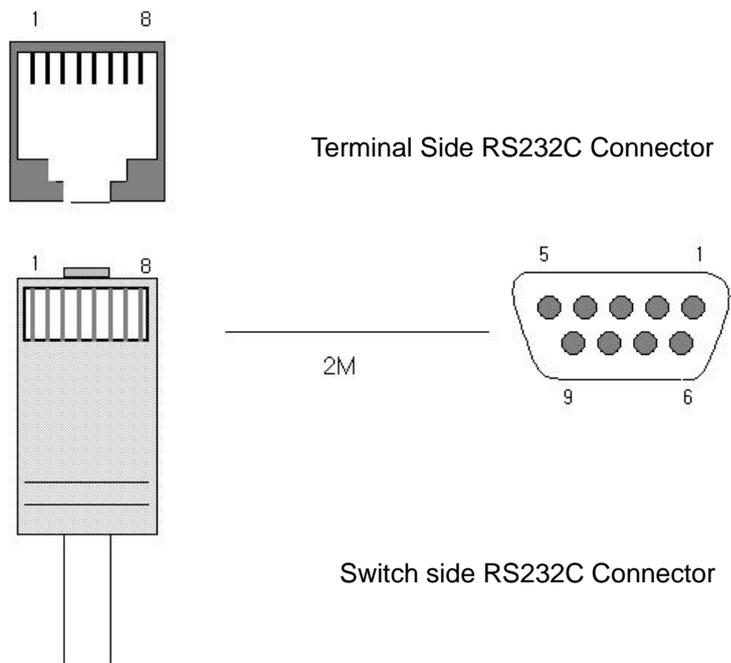


Figure 6: Diagram of Console cable