

Model Name	ZEQUO 6400	Product Specification	401-36240E-TH-SP03
Model No.	PN36240E-TH		Page 1 of 11
<div>1. Summary</div> <div>ZEQUO 6400 is a Layer 3 Ethernet Switch with management function having 10BASE-T/100BASE-TX/1000BASE-T ports, SFP extension slots, and SFP+ extension slots.</div> <div>2. Feature</div> <div>(1) Has wire-speed Layer 3 switching function.</div> <div>(2) Ports 1 to 24 are 10/100/1000BASE-T ports corresponding to auto negotiation. Also their speed and communication mode can be switched by configuration.</div> <div>(3) Ports 21 to 24 also have SFP extension slots. These ports and the 10/100/1000BASE-T twisted pair cable ports cannot be used simultaneously.</div> <div>(4) Ports 25 to 28 are SFP+ extension slots. They are capable of 10Gbps communications. They can be used as SFP or SFP+ ports.</div> <div>(5) Ports 27 and 28 are stacking ports. Up to four units can be stacked by connecting the ports using optical fiber cable or SFP+ direct attach cables.</div> <div>(6) Settings and firmware can be changed and saved by using an SD card.</div> <div>(7) All twisted pair ports support straight/cross cable by auto sensing function. Simply connect devices with straight cables, whether it is a terminal or a network device.</div> <div>(8) Power saving mode detects the connection status automatically and saves power consumption to minimum.</div> <div>(9) The Ring Redundant Protocol (RRP) is supported, allowing to make a redundant network via ring topology.</div> <div>(10) Supports ZEQUO assist Plus. Processes from introduction to maintenance can be performed easily.</div>			
Date issued	July. 6, 2015	Panasonic Electric Works Networks Co., Ltd.	
Date revised	Apr. 1, 2022		

Model Name	ZEQUO 6400	Product Specification	401-36240E-TH-SP03
Model No.	PN36240E-TH		Page 2 of 11
3. Rated/Environmental Conditions			
3-1. Power supply	AC100-240V, 50/60Hz, 2.0A (with a built-in power supply)		
3-2. Power consumption	Normally, Max.45.2W, Min.30.6W		
3-3. Operating environment	Temperature: 0 - 40℃ Humidity: 20 - 80%RH (no condensation)		
3-4. Storage environment	Temperature: -20 - 70℃ Humidity: 10 - 90%RH (no condensation)		
3-5. EMC compliance	CISPR 22 Class A EN 55022 Class A AS/NZS CISPR22 Class A VCCI Class A EN 61000-3-2, EN 61000-3-3 CISPR 24 EN 55024 IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11		
3-6. Safety compliance	IEC 60950-1 EN 60950-1		
3-7. Environment compliance	RoHS compliant		
4. Form			
4-1. Form and materials/colors	Dimensions :44mm (Height) × 440mm (Width) × 312mm (Depth) (Excluding protruding sections) Case material :Main unit: SECC, Front face: PC/ABS, Face plate: PC Color :Main unit: Green 03, Front face: Silver 01, Face plate label: Black 01		
4-2. Mass (Weight)	4,200g		

Model Name	ZEQUO 6400	Product Specification	401-36240E-TH-SP03
Model No.	PN36240E-TH		Page 3 of 11
5. Hardware Specifications			
5-1. Interface		<div>Twisted pair port 1-24 :RJ45 connector</div> <div>Transmitting and receiving network system :</div> <div><div>IEEE802.310BASE-T</div><div>IEEE802.3u100BASE-TX</div><div>IEEE802.3ab1000BASE-T</div></div> <div>Transmission speed :10/100/1000Mbps, full/half duplex</div> <div>Compatible cable :Twisted pair cable</div> <div>(At least equivalent to EIA/TIA568 category 5e)</div> <div>Maximum transmission distance :100m</div> <div>Auto-Negotiation :Communication speed and full/half duplex are automatically recognized.</div> <div>The setting can be fixed to 10Mbps, 100Mbps, or 1000Mbps and full duplex or half duplex.</div> <div>Power saving mode : Detects the connection status automatically and saves power consumption to minimum.</div> <div>SFP extension slot 21-24</div> <div>SFF-8472 (DMI:Diagnostic Monitoring Interface)</div> <div>*Select either of RJ45 or SFP for use</div> <div>Optional Accessories :1000BASE-SX SFP Module (PN54021K-TH)</div> <div>1000BASE-LX SFP Module (PN54023K-TH)</div> <div>SFP+ extension slot 25-28</div> <div>SFF-8472 (DMI:Diagnostic Monitoring Interface)</div> <div>*Select either of RJ45 or SFP for use</div> <div>Optional Accessories :1000BASE-SX SFP Module (PN54021K-TH)</div> <div>1000BASE-LX SFP Module (PN54023K-TH)</div> <div>10GBASE-SR SFP+ Module (PN59021-TH)</div> <div>10GBASE-LR SFP+ Module (PN59023-TH)</div> <div>Stack port 27-28</div> <div>SFF-8472 (DMI:Diagnostic Monitoring Interface)</div> <div>Optional Accessories :1000BASE-SX SFP Module (PN54021K-TH)</div> <div>1000BASE-LX SFP Module (PN54023K-TH)</div> <div>10GBASE-SR SFP+ Module (PN59021-TH)</div> <div>10GBASE-LR SFP+ Module (PN59023-TH)</div> <div>SFP+ Direct Attach Cable (Stack cable 1m)</div>	
5-2. Switching mode		<div>Switching method :Store and Forward</div> <div>Switching capacity :128Gbps</div> <div>Packet transfer capability :Non-blocking</div> <div>Max 14,880,000pps/port (10Gbps)</div> <div>Max 1,488,000pps/port (1000Mbps)</div> <div>Max 148,800pps/port (100Mbps)</div> <div>Max 14,880pps/port (10Mbps)</div> <div>MAC Address table :Max 32K entry/unit</div> <div>Buffer memory :2M Byte/unit</div> <div>Flow control :half-duplex Back pressure</div> <div>full-duplex IEEE802.3x</div> <div>Aging timeout :10 to 1,000,000 sec. (Default: 300 sec.)</div> <div>Jumbo frame :13KB</div>	
Date issued	July. 6, 2015	Panasonic Electric Works Networks Co., Ltd.	
Date revised	Apr. 1, 2022		

Model Name	ZEQUO 6400	Product Specification	401-36240E-TH-SP03
Model No.	PN36240E-TH		Page 4 of 11
5. Hardware Specifications			
5-3. Terminal emulator connection	Console port :RJ45 connector 1 port Transmission mode :RS-232C (ITU-TS V.24) Emulation mode :VT100 Communication configuration :9,600bps, 8bit, None Parity control, Stop bit 1 bit		
5-4. Stack	Number of units :Four units max. (stackable with ZEQUO 6400 and ZEQUO 6500) Bandwidth :40Gbps max. Stack topology :Chain, Ring		
5-5. SD card slot	SD card slot :1 Standard :SD/SDHC Class :2/4/6/10 Size :128MByte to 32GByte		
5-6. LED display	(1) POWER LED Green Light : Power is ON. Off : Power is OFF.  (2) STATUS LED Green Light : The system is normally operating. Orange Light : Starting Orange Blink : Malfunction (Contact the seller.) Off : Power is OFF.  (3) SD CARD LED Green Light : SD card inserted Green Blink : Reading/writing data Orange Blink : SD card error Off : No SD card  (4) STACK ID LED Indicating “H” and the STACK ID alternately : Master switch Indicating “h” and the STACK ID alternately : Backup master switch Indicating the STACK ID : Slave switch  (5) Port LED LINK/ACT. (Port 1-24) Green Light : Link is established at 1000 Mbps duplex mode. Green Blink : Transmitting and receiving data at 1000 Mbps duplex mode. Orange Light : Link is established at 100 Mbps or 10 Mbps. Orange Blink : Transmitting and receiving data at 100 Mbps or 10 Mbps. Off : No devices is connected.  LINK/ACT. (Port 21-24) Green Light : Link is established at 1000 Mbps duplex mode. Green Blink : Transmitting and receiving data at 1000 Mbps duplex mode. Off : No devices is connected.  LINK/ACT. (Port 25-28) Green Light : Link is established at 10 Gbps duplex mode. Green Blink : Transmitting and receiving data at 10 Gbps duplex mode. Orange Light : Link is established at 1000 Mbps duplex mode. Orange Blink : Transmitting and receiving data at 1000 Mbps duplex mode.		
Date issued	July. 6, 2015	Panasonic Electric Works Networks Co., Ltd.	
Date revised	Apr. 1, 2022		

Model Name	ZEQUO 6400	Product Specification	401-36240E-TH-SP03
Model No.	PN36240E-TH		Page 5 of 11

6. Software Specifications

6-1. Configuration	Control parameters can be set by the following procedures: (1) Configuration from an asynchronous terminal connected to the console port. (2) Configuration from a remote terminal connected via TELNET and SSH		
6-2. Ethernet Switch Control	It is possible to check the control and operation of the Ethernet Switch by ZEQUO assist Plus. Ethernet Switch can be controlled by the following procedures: (1) Control from an asynchronous terminal connected to the console port. (2) Control from a remote terminal using SSH/TELNET and TCP/IP network connection. (3) Control using SNMP Manager The Ethernet Switch operation status can be checked using the following functions. (1) Fan sensor function (2) Internal temperature sensor function (3) Function to display the CPU usage and memory usage (4) SFP module status checking function (DDM: Digital Diagnostic Monitoring)		
6-3. Rebooting	The system can be reboot from the software in the following two modes: (1) Warm start (2) Reset to factory default		
6-4. Supported Agent	Management protocol	:SNMP v1/v2c/v3	(RFC1157, RFC1901, RFC 1908, RFC 2570, RFC 2575)
	TELNET		(RFC854)
	SSH v2		(RFC4251, RFC4252, RFC4253, RFC4254, RFC4716)
	Data transfer protocol	:TFTP	(RFC783)
6-5. Supported MIB	RFC1213-MIB (MIB II) (RFC 1213) BRIDGE-MIB (RFC 4188) SNMPv2-MIB (RFC 1907) RMON-MIB (RFC 1757, RFC 2819) RMON2-MIB (RFC 2021) EtherLike-MIB (RFC 1643, RFC 2358, RFC 2665) MAU-MIB (RFC 4836) P-BRIDGE- MIB (RFC 4363) IF-MIB (RFC 2233, RFC 2863) RADIUS-AUTH-CLIENT-MIB (RFC 2618) MGMD-STD- MIB (RFC 5519) RIPv2-MIB (RFC 1724) IP-FORWARD-MIB (RFC 4292) IPMROUTE-STD-MIB (RFC 2932) PIM-MIB (RFC 2934) RADIUS-ACC-CLIENT-MIB (RFC 2620) DISMAN-PING-MIB (RFC 2925) DISMAN-TRACEROUTE-MIB (RFC 2925) OSPF-MIB (RFC 1850) VRRP-MIB (RFC 2787) ENTITY-MIB (RFC 2737) IPV6-MIB (RFC 2465)		
6-6. System log	Maximum number to be kept: 9,000		
6-7. Others	Syslog Client (Transfers system logs to the Syslog server.) TFTP Client (Upgrades the software and saves/loads configuration information.) TELNET Client DHCP Client SNTP LLDP LLDP-MED DNS relay DNS Resolver DHCP Snooping		

Date issued	July. 6, 2015	Panasonic Electric Works Networks Co., Ltd.
Date revised	Apr. 1, 2022	

Model Name	ZEQUO 6400	Product Specification	401-36240E-TH-SP03
Model No.	PN36240E-TH		Page 6 of 11
7. Layer 2 Switching Functions			
7-1. Spanning Tree		IEEE 802.1D Spanning Tree Protocol, Rapid Spanning Tree Protocol IEEE 802.1Q Multiple Spanning Tree Protocol	
7-2. VLAN		IEEE802.1Q Private VLAN Guest VLAN MAC-based VLAN Subnet based VLAN Number of VLAN registrations: 4,094 (including default) Asymmetric VLAN Voice VLAN	
7-3. Trunking		Link Aggregation function (STATIC/LACP) Up to 48 groups can be created (up to 8 ports per group).	
7-4. Port Monitoring		Traffic of the target port can be copied to the specified port and transmitted. (Two or more target ports can be specified.) RSPAN	
7-5. Multicast		IGMP Snooping (IGMP v1/v2/v3) function (Maximum group number :4,096, Number of Static registrations:64) MLD snooping (MLDv2) function (Maximum group number :4,096, Number of Static registrations:64)	
7-6. QoS		IEEE802.1p 8 levels of Priority Queue supported Scheduling Method: Priority Queuing (PQ:Strict priority queuing ) Weighted Round Robin (WRR:Weighted round robin scheduling )	
7-7. Authentication Function		Web-based authentication IEEE802.1X Port-based authentication Web-based authentication, Mac-based authentication using IEEE 802.1X Web-based authentication, Dynamic VLAN function using IEEE 802.1X Guest VLAN using IEEE 802.1X (EAP-MD5/TLS/PEAP authentication method)	
7-8. Access Control		Access control can be controlled by the following parameters: (1)IP address (Source or Destination) (2)MAC address (Source or Destination) (3)TCP/UDP port number (Source or Destination) (4)VLAN ID (5)IEEE 802.1p Priority (6)DSCP (7)Protocol (8)ICMP type (9)TCP SYN Flag	
7-9. Ring protocol		Redundancy is enabled by ring topology. (Up to 8 group can be registered.)	



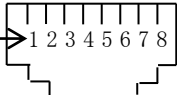
Model Name	ZEQUO 6400	Product Specification	401-36240E-TH-SP03
Model No.	PN36240E-TH		Page 8 of 11

9. Connector Pin Arrangement

9-1. Port 1 - 24

Status	Pin No.	1	2	3	6	4	5	7	8
MDI-X	Signal	BI_DB+	BI_DB-	BI_DA+	BI_DA-	BI_DD+	BI_DD-	BI_DC+	BI_DC-
MDI	Signal	BI_DA+	BI_DA-	BI_DB+	BI_DB-	BI_DC+	BI_DC-	BI_DD+	BI_DD-

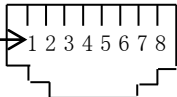
Pin No.



9-2. Console port

Pin No.	Signal	Pin No.	Signal
1	NC	5	GND
2	NC	6	RXD
3	TXD	7	NC
4	GND	8	NC

Pin No.



10. Installation Procedures and Accessories

10-1. Installation Procedures	Mounting to rack
10-2. Accessories	<div><div>(1) Installation Guide (English)</div><div>:1</div><div>(2) Installation Guide (Thai)</div><div>:1</div><div>(3) Mounting bracket (for 19-inch rack)</div><div>:2</div><div>(4) Screw (for 19-inch rack)</div><div>:4</div><div>(5) Screw (for fixing the main unit and the 19 inch rack mount bracket)</div><div>:8</div><div>(6) SFP+Direct Attach Cable</div><div>:1</div><div>(7) Rubber foot</div><div>:4</div><div>(8) Dummy SD card</div><div>:1</div><div>(9) Power cord (TIS 166-2549) (*)</div><div>:1</div><div>* The attached power cord is dedicated for AC 100 - 240 V use.</div></div>

Date issued	July. 6, 2015	Panasonic Electric Works Networks Co., Ltd.
Date revised	Apr. 1, 2022	



Model Name	ZEQUO 6400	Product Specification	401-36240E-TH-SP03
Model No.	PN36240E-TH		Page 9 of 11
11. Optional accessories			
11-1. 1000BASE-SX SFP Module (Model No.:PN54021K-TH)		Fiber optic port connector type Standards Transmission speed Compatible cable  Maximum transmission distance	:LC connector (Duplex) :IEEE802.3z 1000BASE-SX :1000Mbps, full duplex :Fiber cable 50/125 μ m Multi Mode Fiber 62.5/125 μ m Multi Mode Fiber :550 m at 50/125 μ m 220 m at 62.5/125 μ m
11-2. 1000BASE-LX SFP Module (Model No.:PN54023K-TH)		Fiber optic port connector type Standards Transmission speed Compatible cable  Maximum transmission distance	:LC connector (Duplex) :IEEE802.3z 1000BASE-LX :1000Mbps, full duplex :Fiber cable 10/125 μ m Single Mode Fiber 50/125 μ m Multi Mode Fiber 62.5/125 μ m Multi Mode Fiber :10 km when Single Mode Fiber is used 550 m when Multi Mode Fiber is used
11-3. 10GBASE-SR SFP+ Module (Model No.:PN59021-TH)		Fiber optic port connector type Standards Transmission speed Compatible cable  Maximum transmission distance	:LC connector (Duplex) :IEEE802.3ae 10GBASE-SR :10Gbps full duplex :Fiber cable 50/125 μ m Multi Mode Fiber 62.5/125 μ m Multi Mode Fiber :300 m at 50/125 μ m 33 m at 62.5/125 μ m
11-4. 10GBASE-LR SFP+ Module (Model No.:PN59023-TH)		Fiber optic port connector type Standards Transmission speed Compatible cable  Maximum transmission distance	:LC connector (Duplex) :IEEE802.3ae 10GBASE-LR :10Gbps full duplex :Fiber cable 10/125 μ m Single Mode Fiber :10km
Date issued	July. 6, 2015	Panasonic Electric Works Networks Co., Ltd.	
Date revised	Apr. 1, 2022		

Model Name	ZEQUO 6400	Product Specification	401-36240E-TH-SP03
Model No.	PN36240E-TH		Page 10 of 11
<div>12. Prohibitions when Using the Product to Guarantee Safety</div> <div>The manufacturer assumes no responsibility for any problems occurring when the following conditions are not satisfied. Observe the following items when using the product.</div> <div><div><div>(1)</div><div>Do not use power supply other than AC 100 – 240 V. Deviation could lead to fire, electric shock, and/or equipment failure.</div></div><div><div>(2)</div><div>Do not handle the power cord with wet hand. Deviation could lead to electric shock, and/or equipment failure.</div></div><div><div>(3)</div><div>Do not handle this Ethernet Switch and connection cables during a thunderstorm. Deviation could lead to electric shock.</div></div><div><div>(4)</div><div>Do not disassemble and/or modify this Ethernet Switch. Deviation could lead to fire, electric shock, and/or equipment failure.</div></div><div><div>(5)</div><div>Do not damage the power cord. Do not bend too tightly, stretch, twist, bundle with other cord, pinch, put under a heavy object and/or heat it. Damaged power cord could lead to fire, short, and/or electric shock.</div></div><div><div>(6)</div><div>Do not put foreign objects (such as metal and combustible) into the opening (such as twisted pair port, console port), and/or do not drop them into the inside of the Ethernet Switch. Deviation could lead to fire, electric shock, and/or equipment failure.</div></div><div><div>(7)</div><div>Do not connect equipments other than 10BASE-T/100BASE-TX/1000BASE-T to twisted pair port. Deviation could lead to fire, electric shock, and/or equipment failure.</div></div><div><div>(8)</div><div>Do not place this Ethernet Switch in harsh environment (such as near water, high humid, and/or high dust). Deviation could lead to fire, electric shock, and/or equipment failure.</div></div><div><div>(9)</div><div>Do not place this Ethernet Switch under direct sunlight and/or high temperature. Deviation could lead to high internal temperature and fire.</div></div><div><div>(10)</div><div>Do not install this Ethernet Switch at the location with continuous vibration or strong shock, or at the unstable location. Deviation could lead to injury and/or equipment failure.</div></div><div><div>(11)</div><div>Do not put this Ethernet Switch into fire. Deviation could lead to explosion and/or fire.</div></div><div><div>(12)</div><div>Do not insert any modules other than the optional SFP modules (PN54021K-TH/PN54023K-TH) into the SFP extension slot. Do not insert any modules other than the optional SFP modules (PN54021K-TH/PN54023K-TH) and SFP+ module(PN59021-TH/PN59023-TH) into the SFP+ extension slot. Do not insert any modules other than the optional SFP modules (PN54021K-TH/PN54023K-TH) and SFP+ module(PN59021-TH/PN59023-TH), SFP+ Direct Attach Cable into the stacking port. For the latest information about compatible modules, check our website.</div></div><div><div>(13)</div><div>Do not use the supplied power cord for anything other than this product. Deviation could lead to fire, electric shock, and/or equipment failure.</div></div><div><div>(14)</div><div>Unplug the power cord in case of equipment failure. Deviation, such as keeping connected for a long time, could lead to fire.</div></div><div><div>(15)</div><div>Connect this Ethernet Switch to ground. Deviation could lead to electric shock, malfunction, and/or equipment failure.</div></div><div><div>(16)</div><div>Connect the power cord firmly to the power port. Deviation could lead to electric fire, shock, and/or malfunction.</div></div><div><div>(17)</div><div>Unplug the power cord if the STATUS/ECO LED blinks in orange (system fault). Deviation, such as keeping connected for a long time, could lead to fire.</div></div></div>			
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Date revised	Apr. 1, 2022		

Model Name	ZEQUO 6400	Product Specification	401-36240E-TH-SP03
Model No.	PN36240E-TH		Page 11 of 11
<div>12. Prohibitions when Using the Product to Guarantee Safety</div> <div>(18) Handle the Ethernet Switch carefully so that fingers or hands may not be damaged by twisted pair port, console port, or power cord hook block.</div> <div>13. Basic Instructions for the Use of This Product</div> <div>(1) For inspection and/or diagnosis, consult the retailer.</div> <div>(2) Use commercial power supply from a wall socket, which is close and easily accessible to this Ethernet Switch.</div> <div>(3) Unplug the power cord when installing or moving this Ethernet Switch.</div> <div>(4) Unplug the power cord when cleaning this Ethernet Switch.</div> <div>(5) Use this Ethernet Switch within the specifications. Deviation could lead to malfunction.</div> <div>(6) Do not touch the metal terminal of the RJ45 connector, the modular plug of connected twisted pair cable. Do not place charged objects in the proximity of them. Static electricity could lead to equipment failure.</div> <div>(7) Do not put the modular plug of the connected twisted pair cable on objects that can carry static charge, such as carpet. Do not place it in the proximity. Static electricity could lead to equipment failure.</div> <div>(8) Do not put a strong shock, including dropping, to this Ethernet Switch. Deviation could lead to equipment failure.</div> <div>(9) Before connecting a console cable to the console port, discharge static electricity, for example by touching metal appliance (do not discharge by touching this Ethernet Switch).</div> <div>(10) Do not store and/or use this Ethernet Switch in the environment with the characteristics listed below. (Store and/or use this Ethernet Switch in the environment in accordance with the specification.)<div><div>- High humidity. Possible spilled liquid (water).</div><div>- Dusty. Possible static charge (such as carpet).</div><div>- Under direct sunlight.</div><div>- Possible condensation. High/low temperature exceeding the specifications environment.</div><div>- Strong vibration and/or strong shock.</div></div></div> <div>(11) Please use this Ethernet Switch in place where ambient temperature is from 0 to 40℃. Failure to satisfy the conditions above may result in a fire, electric shock, equipment failure, and/or malfunction. Such events are not covered by the warranty. Do not block the ventilator of the Ethernet Switch. Blocked ventilator induces the heat accumulation inside, causing equipment failure and/or malfunction.</div> <div>(12) When using two Ethernet Switches, do not stack them. When you place them side by side, allow for a space of 20 mm or more between them. This space is not necessary if you use supplied connection brackets.</div> <div>(13) Do not insert any modules other than the optional SFP modules (PN54021K-TH/PN54023K-TH) into the SFP extension slot. Do not insert any modules other than the optional SFP modules (PN54021K-TH/PN54023K-TH) and SFP+ module(PN59021-TH/PN59023-TH) into the SFP+ extension slot. Do not insert any modules other than the optional SFP modules (PN54021K-TH/PN54023K-TH) and SFP+ module(PN59021-TH/PN59023-TH) , SFP+ Direct Attach Cable into the stacking port. Deviation could lead to fire, electric shock, and/or equipment failure. For the latest information about compatible modules, check our website.</div> <div>(14) Please note that operation will not be guaranteed if any SD card other than the separately sold Panasonic SD card is installed into the SD card slot. Format the card with this Ethernet Switch.</div> <div>(15) When connecting the stacks, be sure to use firmware versions that are identical for all of the device. Please note that operations are not guaranteed if the firmware versions are different.</div>			
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