1. Summary

GA-AS10TPoE+ has 12 ports which are 10BASE-T/100BASE-TX/1000BASE-Tcompatible ports.
Ports 1 to 10 (twisted pair ports) support IEEE802.3at PoE power supply functions.

2. Features

(1) Ports 1 to 12 (twisted pair ports) are 10BASE-T/100BASE-TX/1000BASE-Tcorresponding to auto-negotiation.

(2) The twisted pair ports 1 to 10 can supply power conforming with IEEE802.3at. They can supply a maximum of 30 W of power per port, and the device total can supply a maximum of 70 W of power.

(3) All of the twisted pair ports are equipped with straight/cross cable automatic detection functions. Straight cables can be used to make interconnections without distinctions between the terminals and network devices having to be made.
(The factory default is for ports 1 to 10 to have MDI-X be fixed.)

(4) Equipped with IEEE802.3az (LPI) compatible Energy Efficient Ethernet functions (hereinafter EEE), and if data is transmitted when linked up, the energy efficient state will be moved to, whereas each port can suppress power consumption.

(5) Automatically detects the connection states via the equipped energy efficiency mode, and suppresses power consumption to required levels.

(6) VLAN function allows free grouping of up to 256 VLANs.

(7) The IEEE802.1p compatible QoS function is supported.

(8) Has an Internet Mansion function, which ensures security between each door.

(9) As a factory default, IP address in this Ethernet Switch is not assigned to the device.The address can be changed by connecting this Ethernet Switch to your PC using twisted pair cable, if your PC has ZEQUO assist plus installed on it (ZEQUO assist plus is downloadable from Panasonic's website)

3. Rated/Environmental Conditions

3－1. Power supply	AC100-240V, 50/60Hz, 1.7A (with a built-in power supply)
3－2. Power consumption	Normally, Max.89.6W (12.1W when not supplying power), Min.7.5W
3－3. Operating environment	Temperature: 0 - 50℃ 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, CISPR 32 Class A, EN 55032 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 62368-1 EN 62368-1
3－7. Environment compliance	RoHS compliant

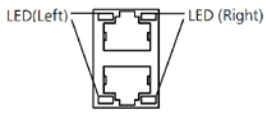
4. Form

4－1. Form and materials/colors	Dimensions :44mm(Height)×210mm(Width)×280mm(Depth) (Excluding protruding sections) Case material :SECC Color : Main unit: Green 03, Front face: black 03, Face plate label: black 02
4－2. Mass(Weight)	2,200g

5. Hardware Specifications

5－1. Interface	Twisted pair port 1-12 :RJ45 connector ※1 Transmitting and receiving network system : IEEE802.3 10BASE-T IEEE802.3u 100BASE-TX IEEE802.3ab 1000BASE-T Energy Efficient Ethernet :IEEE802.3az (LPI) ※2 Transmission speed :10/100Mbps full/half duplex, 1000Mbps full duplex, Compatible cable :Twisted pair cable (At least equivalent to EIA/TIA568 category 5e) If there is Category 3 cable used in a connection, the communication at a speed of 10Mbps can not be established. You must use category 5e or higher crossover cable. Maximum transmission distance :100m Auto-Negotiation :Communication speed and full/half duplex are automatically recognized. The setting can be fixed to 10Mbps, 100Mbps, 1000Mbps and full duplex or half duplex. Up to 70 W of power can be supplied to ports 1 to 10 in total. (Maximum power supplied to a port: 30.0W) ※1 Automatically detects the connection states via the equipped Power Saving Mode, and suppresses power consumption to required levels. Factory default : Half ※2 Port 1-10 equipped with IEEE802.3az (LPI) compatible Energy Efficient Ethernet functions(hereinafter EEE), and if data is transmitted when linked up, the energy efficient state will be moved to, whereas each port can suppress power consumption. Factory default : Enable

5. Hardware Specifications

5－2. Switching mode	Switching method :Store and Forward Switching capacity :24.0Gbps Packet transfer capability :Non-blocking Max. 14,880pps/port(10Mbps) Max. 148,800pps/port(100Mbps) Max. 1,488,000pps/port(1000Mbps) MAC Address table :Max. 8K entry/unit Buffer memory :512K Byte/unit Flow control :half-duplex Back pressure full-duplex IEEE802.3x Aging timeout :10 to 1,000,000 sec. Jumbo frame supported :9KB Transmittable frames :EAP, BPDU HOL Blocking
5－3. LED display	(1)POWER(Power)LED Green Light :Power is ON Off :Power is OFF (2)STATUS (status) LED Green Light : System is normally operating Green Blink : After powering on, and the system startup is completed, blinks for five minutes Orange Light: System is starting up Orange Blink: System is malfunctioning (3) PoE LIM. (PoE limit) LED Off : Supplies power in a range of 0 - 63 W Green Light : Supplies power in a range of 63 W - 70 W Green Blink : When the requested power supply capacity exceeds 70 W (overload of the device overall) (4) Port LED (Left) LINK/ACT (ports 1-12) LED Green Light : Link is established. Green Blink : Data is being sent/received. Off : No terminal is connected. (5) Port LED (Right) PoE (ports 1-10) LED Green Light : Power is supplied normally. Green Blink : Overload power supply Off : Power is not supplied or PoE receiving equipment is not connected. 
5－4. Cascade connections	Port 1-12 corresponding to the Auto MDI / MDI-X (Allowed change by the setting for the application) The factory default is for ports 1 to 10 are fixed to be MDI-X.
5－5. FAN	Not installed

6. Software Specifications

6－1. Configuration	It can be set from a remote terminal according to the Web screen.
6－1－1. IP address setting	(1) Setting by the Web screen. (2) Setting by the IP address easy setting function of ZEQUO assist Plus.
6－2. Ethernet Switch Control	It can be set from a remote terminal according to the Web screen. Possible to confirm the switch operating status by the following features. (1) CPU utilization, memory usage display function.
6－3. System reboot	It can be reset in the following three modes from software. (1) Warm start. (2) Reset back to the factory default settings. (3) Reset to return the non-IP address to the factory default setting. It can be used in combination reboot timer function in each mode
6－4. Agent	Management protocol : HTTP (RFC 2616) Data transfer protocol : TFTP (RFC 783)
6－5. Log	Maximum retention number : 1,024 Syslog forwarding function
6－6. Loop detection	Block the ports where loops are detected, and record the loop history and system log. ・Loop detection setting Enabled (factory default setting) Enabled/disabled can be switched by configuring a setting using the console. The setting is kept even when the power is turned OFF. ・Loop detection port Enabled: Ports 1 to 10 (factory default setting) Disabled: Ports 11 and 12 (factory default setting) ・Loop shutoff time 60 to 86,400 sec. (Factory default setting: 60 sec.) The Set Time Port LED lights up orange and the port shuts off. ・Loop history retention time 3 days The LOOP HISTORY LED blink for three days. The Port LED also remains lit for three days after the loop is eliminated. Loop shutoff mode has the following 2 types of modes. ・Block mode (factory default setting) When loops are detected, the port statuses are automatically blocked, and just the specified packets which include the loop detection packets will be transmitted and received. ・Shut-down mode When loops are being detected, the ports will be automatically linked down, and none of the packets will be transmitted and received. *Just the loop detection packets from 30 seconds before the set restoration times will automatically be transmitted and received.
6－7. Others	Ping response (ICMP echo reply) function Syslog Client (system log sent to a Syslog server) TFTP Client (Firmware upgrade, save and read of configuration information) SNTP Client IP Address Easy Setting

7. Layer 2 Switching Functions

7－1. Port grouping function	It can communicate control only the same group. (It can be up to 256 groups of registration.)
7－2. VLAN	IEEE802.1Q tag VLAN protocol Port-based VLAN VLAN registration number 256 (including the default) Internet Mansion function VLAN invalid setting function
7－3. Link aggregation	IEEE802.3ad link aggregation function (Manual) Configurable up to 6 groups (Max. 8 ports per group)
7－4. Port Monitoring	It can be sent by copying the port where you specify the traffic of the target port. (A plurality of target port can be specified.) (Link Aggregation Configuration port can also be monitoring.)
7－5. QoS	IEEE802.1p 4 stage priority control Scheduling scheme: Priority Queuing (PQ: Absolute priority scheduling)
7－6. PoE power supply function	IEEE802.3af/at power supply function. Up to 70 W of power can be supplied to ports 1 to 10 in total. (Maximum power supplied to a port: 30 W) Supply method :Alternative A(Cable signal lines 1, 2, 3, and 6 are used.)
7－7. Time setting	SNMP settings, time manual setting
7－8. Multicast	Multicast address group registration function. (can be up to 256 groups of registration)
7－9. Storm control function	Unknown unicast / Broadcast / Multicast of possible control the storm

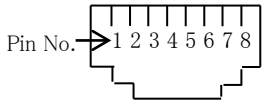
8. Web management function

8－1. Software specification		
8－1－1. Enabled browser	Microsoft Internet Explorer 11	
8－2. Setting function		
8－2－1. Switching configuration	Administration IP Port (basic, extend, Power saving) System security Syslog transmission ID/Password change Static ARP table VLAN settings QoS settings	Link aggregation Storm control Port monitoring Static multicast address PoE settings Port group System log Exception handler Watchdog timer
8－2－2. Time setting	SNTP setting, manual setting	
8－3. Monitoring function		
8－3－1. Basic information	System information, Hardware information, Management information [Host name (sysName)], System address information	
8－3－2. Learning and recording information	FDB table, ARP table, Statistics, System log	
8－4. System management tools	Software upgrade, Reboot, Save current, Config file transfer, Ping execution	

9. Connector Pin Arrangement

9－1. Port 1 - 12

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-



10. Accessories

10-1. Installation Procedures	(1) Mounting to rack
10-2. Accessories	(1) Installation Guide :1 (2) Rubber foot :4 (3) Rack mount bracket (for 19-inch rack) :2 (4) Connection bracket(for connection two Ethernet Switches) :2 (5) Screw (for 19-inch rack) :4 (6) Screw (for fixing the mount brackets to the Ethernet Switch) :8 (7) Screw (for fixing the connection bracket) :8 (8) Power cord (AS/NZS3112)(*) :1 * The attached power cord is dedicated for AC 100 - 240 V use.

10. Prohibitions when Using the Product to Guarantee Safety

The manufacturer assumes no responsibility for any problems occurring when the following conditions are not satisfied. Observe the following items when using the product.

(1) Do not use power supply other than AC 100 - 240 V.
Deviation could lead to fire, electric shock, and/or equipment failure.

(2) Do not handle the power cord with wet hand.
Deviation could lead to electric shock, and/or equipment failure.

(3) Do not handle this Ethernet Switch and connection cables during a thunderstorm.
Deviation could lead to electric shock.

(4) Do not disassemble and/or modify this Ethernet Switch.
Deviation could lead to fire, electric shock, and/or equipment failure.

(5) 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, and/or electric shock.

(6) Do not insert or drop foreign objects such as metal or combustible things into Ethernet Switches through the openings or twisted pair ports.
Deviation could lead to fire, electric shock, and/or equipment failure.

(7) Do not connect devices other than 10BASE-T/100BASE-TX/1000BASE-T to twisted pair port.
When connecting to a 10BASE-T device, use a Cat5 or above cable.
Deviation could lead to fire, electric shock, and/or equipment failure.

(8) 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.

(9) Do not place this Ethernet Switch under direct sunlight and/or high temperature.
Deviation could lead to high internal temperature and fire.

(10) Do not install this Ethernet Switch at the location with continuous vibration or strong shock, or at the unstable location.
Deviation could lead to falling, injury and/or equipment failure.

(11) Do not put this Ethernet Switch into fire.
Deviation could lead to explosion and/or fire.

11. Cautions when Using the Product to Guarantee Safety

(1) Use the bundled power cord (AC 100 - 240 V specifications).
Deviation could lead to electric shock, malfunction, and/or equipment failure.

(2) Unplug the power cord in case of equipment failure.
Deviation, such as keep connecting for a long time, could lead to fire.

(3) Be sure to connect the ground cable.
Otherwise this might cause electrical shocks, misoperations and malfunctions.
Connect the Ethernet Switch via the supplied power cord to the outlet which is connected to the ground.
If the outlet is not connected to the ground, connect the ground cable (AWG18:green/yellow) to the ground terminal screw.

(4) Connect the power cord firmly to the power port.
Deviation could lead to electric fire, shock, and/or malfunction.

(5) If the STATUS (Status) LED blinks orange, unplug the power cord since this is sign of a malfunction.
Deviation, such as keep connecting for a long time, could lead to fire.

(6) Handle the Ethernet Switch carefully to prevent fingers and hands from being damaged by twisted pair port or power cord hook block.

(7) Up to two Ethernet Switches can be connected. When connecting two Ethernet Switches, use connection brackets and screws (for fixing the connection brackets) supplied with 19-inch rack mount brackets (two coupled units) to securely fix the connection brackets to the connection screw holes on the front and back panels, and then install the Ethernet Switches.
If the Ethernet Switch is not fixed securely, injuries and/or malfunctions could be caused due to the Ethernet Switch falling, etc.

(8) When connecting IEEE802.3at-enabled receiving equipment to the Ethernet Switch, use a CAT5e or above cable. Using cables other than those could lead them to cause heat to be generated, to catch on fire and/or cause malfunctions.

(9) Double pole / Neutral fusing

(10) This Ethernet Switch is to be periodically serviced in order to maintain its performance.
Please choose a product administrator, and have him/her be sure to implement periodic maintenance. When doing maintenance, check the inspection chart that is posted on our website which has the requisite items listed on it.

(11) When using this Ethernet Switch to design systems, use it after applying appropriate measures such as setting up redundant configurations.
Communications failures might be generated due to causes such as malfunctions or misoperations while the Ethernet Switch is being used.

(12) When using this Ethernet Switch for applications which require extremely high reliability, be careful to expend all possible means to ensure safety and reliability.
This Ethernet Switch is not designed nor manufactured with the intention that it be used for applications (in use with railways, aviation, and medical care, etc.
where the influence rate due to communications failures is extremely high in regard to systems that directly affect systems and human lives) which require extremely high reliability.

(13) Be aware of glitches which are caused in the usage environments such as age-related degradation, etc.
This may vary depending upon conditions such as utilisation rates and usage environments, but performance might decrease due to the age-related degradation, etc. of components. It is recommended that this Ethernet Switch be replaced about five years after it was installed.

(14) Be careful in regards to environmental restrictions whereby the Ethernet Switch can be used.
Please isolate the business power lines and communications lines. Isolate distribution lines and other distribution lines, and low current power lines, optical fiber cables, metallic water conduits, and gas conduits, etc. Noise may be generated in the communications lines which might cause communications glitches.

12. Basic Instructions for the Use of This Product

(1) For inspection and/or repair, consult the retailer.

(2) Use commercial power supply from a wall socket closeby, which is close and easily accessible to this Ethernet Switch.

(3) Unplug the power cord when installing or moving this Ethernet Switch.

(4) Unplug the power cord when cleaning this Ethernet Switch.

(5) Use this Ethernet Switch within the specifications. Deviation could lead to malfunction.

(6) Do not touch the twisted pair cable modular metal terminals, which are connected to RJ45 connectors (twisted pair ports) or the connectors, nor place them near electrically-charged objects. Static electricity could lead to equipment failure.

(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.

(8) Do not put a strong shock, including dropping, to this Ethernet Switch.
Deviation could lead to equipment failure.

(9) 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.)
- High humidity. Possible spilled liquid (water).
- Dusty. Possible static charge (such as carpet).
- Under direct sunlight.
- Possible condensation. High/low temperature exceeding the specifications environment.
- Strong vibration and/or strong shock.

(10) Please use this Ethernet Switch in place where ambient temperature is from 0 to 40 ℃.
If the supply power for the entire device is going to be used at 80 W or less, use in it an area where the operating is 0 to 50 ℃.
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.

(11) Do not block the ventilator of the Ethernet Switch.
Blocked ventilator induces the heat accumulation inside, causing equipment failure and/or malfunction.

(12) If used at a temperature out of the operating temperature range, the protection equipment will be activated and the power supply stops.

(13) When using two Ethernet Switches, do not stack them. When you place them side by side, allow for a space of 20mm or more between them.

(14) When mounting Ethernet Switch to rack, leave a minimum of 20 mm space between them.