## 1. Summary

ZEQUO 6600RE is a Layer 3 Ethernet Switch with management function having 10BASE-T/100BASE-TX/1000BASE-T ports, SFP extension slots, and SFP+ extension slots.

## 2. Feature

(1) Has wire-speed Layer 3 switching function.

(2) Ports 1 to 24 are 10BASE-T/100BASE-TX/1000BASE-T ports corresponding to auto negotiation.
Also their speed and communication mode can be switched by configuration.

(3) Ports 21 to 24 are SFP extension slots.
These ports and the 1000BASE-T twisted pair cable ports cannot be used simultaneously.

(4) Ports 25 to 28 are SFP+ extension slots. They are capable of 10Gbps communications. They can be used as SFP or SFP+ ports.

(5) Ports 29 and 30 are stacking ports.
Up to four units can be stacked by connecting the ports with optical fiber cable or 40G direct attach cable.

(6) Settings and firmware can be changed and saved by using an SD card.

(7) Equipped with two power ports, power redundancy is feasible. Normally operates even with just the AC power supplied to either one of the power ports.

(8) 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.

(9) Equipped with energy efficient Ethernet (EEE) conforming to IEEE802.3az (LPI). When there is no data transmission at link up, the energy-saving state automatically starts so that power consumption can be reduced on each port.

(10) Power saving mode detects the connection status automatically and saves power consumption to minimum.

(11) Due to the loop detection/shutoff function, a port where loop has occurred can be automatically shut off to prevent loop failures.

(12) The ports which the loop has generated are displayed via the LED, and the network administrator can specify the ports which the loop has generated after the loop is resolved via the loop history functions.

(13) The Ring Redundant Protocol (RRP) is supported, allowing to make a redundant network via ring topology.

(14) Supports ZEQUO assist Plus. Processes from introduction to maintenance can be performed easily.

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|---|---|---|
| Date revised | | |

## 3. Rated/Environmental Conditions

| | | |
|---|---|---|
| 3−1. Power supply | AC100−240V, 50/60Hz, 2.5A (with a built-in power supply) | |
| 3−2. Power consumption | When either power port 1, or power port 2 is connected<br>　Normally, Max. 46.8 W, Min. 30.7 W<br>When both power port 1 and power port 2 are connected<br>　Normally, Max. 51.2 W, Min. 34.7 W<br>＊Power redundancy is feasible | |
| 3−3. Operating environment | Temperature: 0 - 45℃<br>Humidity:　　20 − 80%RH (no condensation) | |
| 3−4. Storage environment | Temperature: −20 − 70℃<br>Humidity:　　10 − 90%RH (no condensation) | |
| 3−5. EMC compliance | CISPR 32 Class A<br>EN 55032 Class A<br>AS/NZS CISPR32 Class A<br>VCCI Class A<br>EN 61000−3−2, EN 61000−3−3<br>CISPR 24<br>EN 55024<br>IEC 61000−4−2, IEC 61000−4−3, IEC 61000−4−4, IEC 61000−4−5,<br>IEC 61000−4−6, IEC 61000−4−8, IEC 61000−4−11 | |
| 3−6. Safety compliance | IEC 62368−1<br>EN 62368−1 | |
| 3−7. Environment compliance | RoHS compliant | |

## 4. Form

| | | |
|---|---|---|
| 4−1. Form and materials/colors | Dimensions　　　　:44mm(Height)×440mm(Width)×312mm(Depth)<br>　　　　　　　　　(Excluding protruding sections)<br>Case material　　:Main unit: SECC, Front face: PC/ABS, Face plate: PC<br>Color　　　　　　:Main unit: Green 03, Front face: Silver 01,<br>　　　　　　　　　Face plate label: Black 01 | |
| 4−2. Mass(Weight) | 5,000g(When either power port 1, or power port 2 is connected)<br>5,600g(When both power port 1 and power port 2 are connected) | |

## 5. Hardware Specifications

| 5－1. Interface | |
|---|---|
| | Twisted pair port 1-24 　　　　　　　　　　　:RJ45 connector |
| | 　Transmitting and receiving network system: |
| | 　　　　　　　　　　　　　　　　IEEE802.3　　　　10BASE-T |
| | 　　　　　　　　　　　　　　　　IEEE802.3u　　　100BASE-TX |
| | 　　　　　　　　　　　　　　　　IEEE802.3ab　　　1000BASE-T |
| | 　Transmission speed　　　　　　　:10/100/1000Mbps, full/half duplex |
| | 　Compatible cable　　　　　　　　:Twisted pair cable |
| | 　　　　　　　　　　　　　　　(At least equivalent to EIA/TIA568 category 5e) |
| | 　Maximum transmission distance　　:100m |
| | 　Auto-Negotiation　　　　　　　　:Communication speed and full/half duplex are |
| | 　　　　　　　　　　　　　　　　　automatically recognized. |
| | 　　　　　　　　　　　　　　　　　The setting can be fixed to 10Mbps, 100Mbps, |
| | 　　　　　　　　　　　　　　　　　or 1000Mbps and full duplex or half duplex. |
| | 　Power saving mode　　　　　　　: Detects the connection status automatically |
| | 　　　　　　　　　　　　　　　　　and saves power consumption to minimum. |
| | |
| | SFP extension slot 21-24 |
| | 　SFF-8472(DMI:Diagnostic Monitoring Interface) |
| | 　＊Select either of RJ45 or SFP for use(Port21-24) |
| | 　Optional Accessories:　　　　　　1000BASE-SX SFP Module　(PN54021K-NZ) |
| | 　　　　　　　　　　　　　　　　　1000BASE-LX SFP Module　(PN54023K-NZ) |
| | |
| | SFP+ extension slot 25-28 |
| | 　SFF-8472(DMI:Diagnostic Monitoring Interface) |
| | 　＊Select either of RJ45 or SFP for use |
| | 　Optional Accessories:　　　　　　1000BASE-SX SFP Module　(PN54021K-NZ) |
| | 　　　　　　　　　　　　　　　　　1000BASE-LX SFP Module　(PN54023K-NZ) |
| | 　　　　　　　　　　　　　　　　　10GBASE-SR SFP+ Module　(PN59021-NZ) |
| | 　　　　　　　　　　　　　　　　　10GBASE-LR SFP+ Module　(PN59023-NZ) |
| | |
| | Stack port 29-30 |
| | 　Optional Accessories:　　　　　　40G direct attach cables 1m |
| | |
| | FAN Module slot　　　　　　　　　2slots |
| | 　Supported FAN Module model:　　FAN01 Module(PN73002) |
| | 　Hot swap:　　　　　　　　　　　Supported |
| | |
| | PSU Module slot　　　　　　　　　2slots |
| | 　Supported PSU Module model:　　RP02-200W Module(70002-NZ) |
| | 　Hot swap:　　　　　　　　　　　Supported |
| 5－2. Switching mode | Switching method　　　　　　　　:Store and Forward |
| | Switching capacity　　　　　　　:288Gbps |
| | Packet transfer capability　　　　:Non-blocking |
| | 　　　　　　　　　　　　　　　　Max 14,880,000pps/port(10Gbps) |
| | 　　　　　　　　　　　　　　　　Max 1,488,000pps/port(1000Mbps) |
| | 　　　　　　　　　　　　　　　　Max 148,800pps/port(100Mbps) |
| | 　　　　　　　　　　　　　　　　Max 14,880pps/port(10Mbps) |
| | MAC Address table　　　　　　　:Max 96K entry/unit |
| | Buffer memory　　　　　　　　　:4M Byte/unit |
| | Flow control　　　　　　　　　　:half-duplex　Back pressure |
| | 　　　　　　　　　　　　　　　　 full-duplex　IEEE802.3x |
| | Aging timeout　　　　　　　　　:10 to 1,000,000 sec. (Default: 300 sec.) |
| | Jumbo frame　　　　　　　　　　:13KB |

## 5. Hardware Specifications

| | | |
|---|---|---|
| 5－3. Terminal emulator connection | Console port<br>　Transmission mode<br>　Emulation mode<br>　Communication configuration | :RJ45 connector 1 port<br>:RS-232C (ITU-TS V.24)<br>:VT100<br>:9,600bps, 8bit, None Parity control,<br>　Stop bit 1 bit |
| 5－4. Stack | Number of units<br><br>Bandwidth<br>Stack topology | :Four units max.(stackable with<br>　ZEQUO6600RE and ZEQUO 6700RE)<br>:80Gbps max.<br>:Chain, Ring |
| 5－5. SD card slot | SD card slot<br>　Standard<br>　Size | :1slot<br>:SD/SDHC<br>:128MByte to 32GByte |
| 5－6. LED display | (1) POWER1 LED<br>　　Green Light : Power is ON.<br>　　Off : Power is OFF or Internal power supply error.<br><br>(2) POWER2 LED<br>　　Green Light : Power is ON.<br>　　Off : Power is OFF or Internal power supply error.<br><br>(3) STATUS LED<br>　　Green Light : The system is normally operating.<br>　　Orange Light : Starting<br>　　Orange Blink : Malfunction (Contact the seller.)<br>　　Off : Power is OFF.<br><br>(4) SD CARD LED<br>　　Green Light : SD card inserted<br>　　Green Blink : Reading/writing data<br>　　Orange Blink : SD card error<br>　　Off : No SD card<br><br>(5) STACK ID LED<br>　　Indicating "H" and the STACK ID alternately : Master switch<br>　　Indicating "h" and the STACK ID alternately : Backup master switch<br>　　Indicating the STACK ID : Slave switch<br><br>　*In case the STATUS LED blinks in orange, the following is also indicated.<br>　　"P" : Power failure<br>　　"11" : Fan1 failure<br>　　"12" : Fan2 failure<br>　　"13" : Fan1 or Fan2 failure<br>　　"L" : Within 3 days after a loop resolution<br><br>(6) Port LED<br>　LINK/ACT. (Port 1-24)<br>　　Green Light : Link is established at 10/100/1000 Mbps.<br>　　Green Blink : Transmitting and receiving data at 10/100/1000 Mbps.<br>　　Orange Light : Shuts off due to loop detection and shutoff functions/<br>　　　　　　storm controls/BPDU guard<br>　　Orange Blink : Transmitting and receiving just the administration packets<br>　　Off : No devices are connected.<br><br>　LINK/ACT. (Port 21-24)<br>　　Green Light : Link is established at 1000 Mbps.<br>　　Green Blink : Transmitting and receiving data at 1000 Mbps.<br>　　Orange Light : Shuts off due to loop detection and shutoff functions/<br>　　　　　　storm controls/BPDU guard<br>　　Orange Blink : Transmitting and receiving just the administration packets<br>　　Off : No devices are connected. |

## 5. Hardware Specifications

| | |
|---|---|
| 5-6. LED display | LINK/ACT (SFP+ port 25-28)<br>  Green Light : Link is established at 1000 Mbps or 10 Gbps.<br>  Green Blink : Transmitting and receiving data at 1000 Mbps or 10 Gbps.<br>  Orange Light : Shuts off due to loop detection and shutoff functions/storm controls/<br>      BPDU guard<br>  Orange Blink : Transmitting and receiving just the administration packets<br>  Off : No devices are connected.<br><br>  LINK/ACT (STACK port 29-30)<br>Green Light : Link is established at 40 Gbps.<br>Green Blink : Transmitting and receiving data at 40 Gbps.<br>Orange Light : Shuts off due to loop detection and shutoff functions/storm controls/<br>      BPDU guard<br>Orange Blink: Transmitting and receiving just the administration packets<br>Off : No devices are connected. |
| 5-7. Cascade connections | Port 1-24 corresponding to the Auto MDI / MDI-X.<br>The ports set as fixed are MDI-X.<br>Port 21-24 are set to Auto MDI / MDI-X (factory default). |
| 5-8. FAN | Installed |

## 6. Software Specifications

| | |
|---|---|
| 6-1. Configuration | Control parameters can be set by the following procedures:<br>(1) Configuration from an asynchronous terminal connected to the console port.<br>(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.<br>Ethernet Switch can be controlled by the following procedures:<br>(1) Control from an asynchronous terminal connected to the console port.<br>(2) Control from a remote terminal using SSH/TELNET and TCP/IP network connection.<br>(3) Control using SNMP Manager<br>The Ethernet Switch operation status can be checked using the following functions.<br>(1) Fan sensor function<br>(2) Internal temperature sensor function<br>(3) Function to display the CPU usage and memory usage<br>(4) SFP module status checking function (DDM: Digital Diagnostic Monitoring) |
| 6-3. Rebooting | The system can be reboot from the software in the following three modes:<br>(1) Warm start<br>(2) Reset to factory default |
| 6-4. Supported Agent | Management protocol   :SNMP v1/v2c/v3  (RFC1157, RFC1901, RFC 1908,<br>                            RFC 2570, RFC 2575)<br>                 TELNET         (RFC854)<br>                 SSH v2         (RFC4250,RFC4251, RFC4252,<br>                            RFC4253,RFC4254)<br>Management protocol   :PPSP<br>                 Easy IP Setup Protocol<br>Data transfer protocol  :TFTP         (RFC783) |

## 6. Software Specifications

| | |
|---|---|
| 6－5. Supported MIB | RFC1213-MIB（MIBⅡ） (RFC 1213)<br>BRIDGE- MIB (RFC 4188)<br>SNMPv2-MIB (RFC 1907)<br>RMON-MIB (RFC 2819)<br>RMON2-MIB (RFC 2021)<br>EtherLike-MIB (RFC 2665)<br>MAU-MIB (RFC 4836)<br>P-BRIDGE- MIB (RFC 4363)<br>IF-MIB (RFC 2863)<br>RADIUS-AUTH-CLIENT-MIB (RFC 2618)<br>MGMD-STD- MIB (RFC 5519)<br>RIPv2-MIB (RFC 1724)<br>IP-FORWARD-MIB (RFC 4292)<br>IPMROUTE-STD-MIB (RFC 2932)<br>PIM-MIB (RFC 2934)<br>RADIUS-ACC-CLIENT-MIB (RFC 2620)<br>DISMAN-PING-MIB (RFC 2925)<br>DISMAN-TRACEROUTE-MIB (RFC 2925)<br>OSPF-MIB (RFC 1850)<br>VRRP-MIB (RFC 2787)<br>ENTITY-MIB (RFC 2737)<br>IPV6-MIB (RFC 4293) |
| 6－6. System log | Maximum number to be kept:10,000<br>System log transfer (IPv4/IPv6) |
| 6－7. Loop detection | Turns on the port LED with a orange light when a loop occurs in the corresponding port.<br>At this time, the relevant port automatically shuts down to prevent loop from occurring.<br>SNMP trap can be sent to notify the incident to the administrator.<br>During loop is occurring, or if loop has occurred within the latest 3 days,<br>STATUS LED green blinks to notify this.<br><br>・Loop detection port<br>　　　Enabled: Ports 1 to 24 (factory default setting)<br>　　　Disabled: Ports 25 and 30 (factory default setting)<br>・Loop detection setting<br>　　　Enabled (factory default setting)<br>　　　Enabled/disabled can be switched by configuring a setting using<br>　　　the console<br>・Loop shutoff time<br>　　　60 to 86400 sec. (Factory default setting: 60 sec.)<br>　　　The set time Port LED lights up orange and the port shuts off.<br>・Loop shut off mode<br>　　　shutdown mode<br>　　　Blocking mode (factory default setting) |
| 6－8. Others | Syslog Client (Transfers system logs to the Syslog server.)<br>TFTP Client (Upgrades the software and saves/loads configuration information.)<br>TELNET Client<br>DHCP Client<br>SNTP<br>LLDP<br>LLDP-MED<br>DNS relay<br>DNS Resolver<br>DHCP Snooping |

## 7. Layer 2 Switching Functions

| | |
|---|---|
| 7-1. Spanning Tree | IEEE 802.1D  Spanning Tree Protocol, Rapid Spanning Tree Protocol<br>IEEE 802.1Q  Multiple Spanning Tree Protocol |
| 7-2. VLAN | IEEE802.1Q<br>Private VLAN<br>Guest VLAN<br>MAC-based VLAN<br>Subnet based VLAN<br>Number of VLAN registrations: 4,094 (including default)<br>Asymmetric VLAN<br>Voice VLAN |
| 7-3. Trunking | Link Aggregation function (LACP/Manual)<br>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.<br>(Two or more target ports can be specified.)<br>RSPAN |
| 7-5. Multicast | IGMP Snooping (IGMP v1/v2/v3) function<br>  (Maximum group number : 4,096, Number of Static registrations : 128)<br>MLD snooping (MLDv2) function<br>  (Maximum group number : 2,048, Number of Static registrations : 128) |
| 7-6. QoS | IEEE802.1p  8 levels of Priority Queue supported<br>Scheduling Method :<br>  Strict Priority Queuing        (SPQ : Strict priority queuing scheduling )<br>  Weighted Round Robin   (WRR : Weighted round robin scheduling )<br>  Weighted Deficit Round Robin (WDRR : Weighted Deficit Round Robin scheduling) |
| 7-7. Authentication Function | Web-based authentication<br>IEEE802.1X Port-based authentication<br>Web-based authentication, Mac-based authentication using IEEE 802.1X<br>Web-based authentication, Dynamic VLAN function using IEEE 802.1X<br>Guest VLAN using IEEE 802.1X<br>(EAP-MD5/TLS/PEAP authentication method) |
| 7-8. Fan control | Automatic adjustment of fan rotation speed according to usage environment |
| 7-9. Access Control | Access control can be controlled by the following parameters:<br>(1) IP address (Source  or  Destination)<br>(2) MAC address (Source  or  Destination)<br>(3) TCP/UDP port number (Source  or  Destination)<br>(4) VLAN ID<br>(5) IEEE 802.1p Priority<br>(6) DSCP<br>(7) Protocol<br>(8) ICMP type<br>(9) TCP SYN Flag |
| 7-10. Ring protocol | Redundancy is enabled by ring topology. (Up to 8 group can be registered.) |

## 8. Layer 3 Switching Functions

| | |
|---|---|
| 8-1. IP interface | IP interface             :256 max.<br>Multiple IP addresses   :256 / Interface |
| 8-2. IPv4 routing | Static<br>RIP v1/v2<br>OSPF v2(maximum number of Neighbor:200, 32 when device is stacking)<br>Policy-based routing |
| 8-3. IPv6 routing | Static<br>OSPF v3(maximum number of Neighbor:32) |
| 8-4. Routing table | Static           :256(IPv4),128(IPv6)<br>Dynamic        :12K(IPv4),6K(IPv6) |
| 8-5. IP forwarding | 95 M bps max. |
| 8-6. VRRP | Maximum number of virtual router    :256 |
| 8-7. Multicast routing | IGMPv1/v2/v3         Maximum group number      :4,096<br>                          Number of Static registrations :1,024<br>MLD v1/v2            Maximum group number      :2,048<br>DVMRP v3            Maximum number of Neighbor  :100<br>                          Routing table size         :4,096<br>PIM Dense mode (IPv4)   Maximum number of Neighbor  :100<br>PIM Sparse mode (IPv4/v6)  Maximum number of Neighbor  :100<br>                          Routing table size         :4,096(IPv4),<br>                                             2,048(IPv6)<br>PIM Sparse-Dense mode (IPv4)<br>PIM-SSM (IPv4)<br>Maximum number of multicast forwarding packets    :4,096<br>                                                (shared by IPv4/v6) |
| 8-8. DHCPv4 server | Allocatable IP address     :1,024/pool<br>Max. pool              :10<br>Max. manual binding address  :16 |
| 8-9. DHCPv6 server | Allocatable IP address     :4,096(shared by all pools)<br>Max. pool              :16<br>Max. manual binding address  :64 |
| 8-10. DHCP relay | DHCP Option          :60, 61, 82<br>DHCP v6 Option       :18,37<br>Supported local relay |

## 9. Web management function

| 9-1. Software specification | |
|---|---|
| 9-1-1. Enabled browser | Microsoft Internet Explorer 11 |

| 9-2. Setting function | |
|---|---|
| 9-2-1. Switching configuration | Administration<br>IP<br>Port (basic, extend, Power saving)<br>Access condition<br>Syslog transmission<br>ID/Password<br>Static ARP table<br>VLAN settings<br>QoS settings<br>Link aggregation<br>Storm control<br>Port monitoring<br><br>Static multicast address<br>System log<br>Exception handler<br>Watchdog timer<br>RIP<br>Stack<br>IGMP snooping |
| 9-2-2. Time setting | SNTP setting, manual setting |

| 9-3. Monitoring function | |
|---|---|
| 9-3-1. Basic information | System information, Hardware information,<br>Management information [Host name (sysName],<br>System address information |
| 9-3-2. Learning and recording information | FDB table, ARP table, Statistics information, System log |
| 9-4. System management tools | Software upgrade, Reboot, Save current, Config file transfer, Ping execution |
| 9-5. Routing setting | OSPF, RIP, Static routing, Policy-based routing, Multicast routing protocol |

## 10. Connector Pin Arrangement

10-1. Port 21 – 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. → 1 2 3 4 5 6 7 8

10-2. 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. → 1 2 3 4 5 6 7 8

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|---|---|---|
| Date revised | | |

## 11. Installation Procedures and Accessories

| 11－1. Installation Procedures | Mounting to rack |
|---|---|
| 11－2. Accessories | (1) Installation Guide　　　　　　　　　　　　　　　:1<br>(2) Rubber foot　　　　　　　　　　　　　　　　　:4<br>(3) Mounting bracket（for 19-inch rack）　　　　　　:2<br>(4) Screw（for 19-inch rack）　　　　　　　　　　　:4<br>(5) Power module（70002-NZ RP02-200W Module）　:1（unit mounted）<br>(6) Power module blank panel　　　　　　　　　　　:1（unit mounted）<br>(7) Fan module（PN73002 FAN02 Module）　　　　　:2（unit mounted）<br>(8) Screw（for fixing the main unit and the mounting bracket）　:8<br>(9) 40G Direct attach cable　　　　　　　　　　　:1<br>(10) Dummy SD card　　　　　　　　　　　　　　:1（unit mounted）<br>(11) Power cord（AS/NZS3112）（*）　　　　　　　:1<br>* The attached power cord is dedicated for AC 100－240 V use. |

## 12. Optional accessories

| 12－1. 1000BASE-SX<br>　　　SFP Module<br>　　　（Model No.：PN54021K-NZ） | Fiber optic port connector type　:LC connector (Duplex)<br>Standards　　　　　　　　　　:IEEE802.3z　1000BASE-SX<br>Transmission speed　　　　　　: 1000Mbps, full duplex<br>Compatible cable　　　　　　　:Fiber cable<br>　　　　　　　　　50/125μm　Multi Mode Fiber<br>　　　　　　　　　62.5/125μm Multi Mode Fiber<br>Maximum transmission distance　:550 m at 50/125 μm<br>　　　　　　　　　220 m at 62.5/125 μm |
|---|---|
| 12－2. 1000BASE-LX<br>　　　SFP Module<br>　　　（Model No.：PN54023K-NZ） | Fiber optic port connector type　:LC connector (Duplex)<br>Standards　　　　　　　　　　:IEEE802.3z　1000BASE-LX<br>Transmission speed　　　　　　: 1000Mbps, full duplex<br>Compatible cable　　　　　　　:Fiber cable<br>　　　　　　　　　10/125μm　Single Mode Fiber<br>　　　　　　　　　50/125μm　Multi Mode Fiber<br>　　　　　　　　　62.5/125μm　Multi Mode Fiber<br>Maximum transmission distance　:10 km when Single Mode Fiber is used<br>　　　　　　　　　550 m when Multi Mode Fiber is used |
| 12－3. 10GBASE-SR<br>　　　SFP+ Module<br>　　　（Model No.：PN59021-NZ） | Fiber optic port connector type　:LC connector (Duplex)<br>Standards　　　　　　　　　　:IEEE802.3ae　10GBASE-SR<br>Transmission speed　　　　　　:10Gbps full duplex<br>Compatible cable　　　　　　　:Fiber cable<br>　　　　　　　　　50/125μm　Multi Mode Fiber<br>　　　　　　　　　62.5/125μm Multi Mode Fiber<br>Maximum transmission distance　:300 m at 50/125μm<br>　　　　　　　　　33 m at 62.5/125μm |
| 12－4. 10GBASE-LR<br>　　　SFP+ Module<br>　　　（Model No.：PN59023-NZ） | Fiber optic port connector type　:LC connector (Duplex)<br>Standards　　　　　　　　　　:IEEE802.3ae　10GBASE-LR<br>Transmission speed　　　　　　:10Gbps full duplex<br>Compatible cable　　　　　　　:Fiber cable<br>　　　　　　　　　10/125μm　Single Mode Fiber<br>Maximum transmission distance　:10km |
| 12－7. RP02-200W Module<br>　　　（Order Model No.：70002-NZ） | Power supply module<br>* This supply module is dedicated for ZEQUO 6700RE/ZEQUO 6600RE use. |
| 12－8. FAN02 Module<br>　　　（Model No.：PN73002） | FAN module<br>* This FAN module is dedicated for ZEQUO 6700RE/ZEQUO 6600RE use. |

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|---|---|---|
| Date revised | | |

## 13. Prohibitions when Using the Product to Guarantee Safety

Denotes that "Death or serious injuries might be sustained".
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 this Ethernet Switch and connection cables during a thunderstorm.
Deviation could lead to electric shock.

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

(4) 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.

(5) Do not unplug nor plug in the power plug with wet hands.
Deviation could lead to electrical shock, and/or equipment failure.

(6) Do not insert or drop any foreign objects such as metal or readily combustible
things into Ethernet Switch through the openings.
Deviation could lead to fire, electrical shock, and/or equipment failure.

(7) Do not store or use the Ethernet Switch in places where it might get splashed
with liquids such as water, in places with a lot of humidity, in places with
conductive dust, or in places where there are corrosive and combustible gases.
Deviation could lead to fire, electrical shock, and/or equipment failure.

(8) Do not use the Ethernet Switch in dusty environments such as on floors,
underneath floors, the backside of ceilings, or boards.
Do not use the Ethernet Switch in very dusty areas such as on floors, underneath
floors, the backside of ceilings, or boards. Deviation could lead to fire, electrical shock,
and/or equipment failure. It is recommended that the Ethernet Switch be operated in
environments such as the inside of racks where it is difficult for dust to be generated.

(9) Do not store or use the Ethernet Switch in places where it will be exposed to direct sunlight or high temperatures.
The temperature inside will rise, which may cause fire.

(10) Do not store or use the Ethernet Switch in places where there are lots of vibrations and impacts, or in unstable areas.
It might fall, which may cause injuries and/or equipment failure.

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

(12) Do not connect any other devices except for 10BASE-T/100BASE-TX/1000BASE-T devices to the twisted pair ports.
Deviation could lead to equipment failure.

(13) Do not insert any other modules except for our optional SFP module
(PN54021K/PN54023K) and the SFP+ module (PN59021/PN59023) to the SFP+ extension slots.

(14) Do not insert any other modules except for our optional SFP module (PN54021K/PN54023K), SFP+ module
(PN59021/PN59023), or 40G direct attach cable to the stacking ports (Port29-30).
Check out our website for the latest information on supported SFP modules.

(15) Do not insert nor use any other modules except for our optional FAN02 Module (PN73002) into the fan module slots.
Deviation could lead to electric shock, malfunction, and/or equipment failure.

(16) Do not insert nor use any other modules except for our optional RP02-200W Module (70002-NZ) into the power module slots.
Deviation could lead to electric shock, malfunction, and/or equipment failure.

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## 14. Cautions when Using the Product to Guarantee Safety

(1)  Be sure to check the precautions which are printed on the product labels before using.
Deviation could lead to electric shock.

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

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

(4)  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 a ground, connect the ground cable to the ground terminal screw.

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

(6)  If the STATUS LED is blinking in orange (system fault), check for the cause via the system log,
since it might be a malfunction if it is not the temperature, loop detection and shutoff, unplug the power plug.
Deviation, such as keeping connecting for a long time, could lead to fire.

(7)  Handle the Ethernet Switch carefully to prevent fingers and hands from being
damaged by twisted pair port, SFP extension slot, Stacking port, console port,
SD card slot, or power cord hook block.

(8)  Check whether the optical fiber cable connectors are contaminated with dust, etc.
This might cause the optical signal to not be transmitted normally, and cause
misoperations and malfunctions. If they are contaminated, make sure to clean
them off, then connect them to the optical fiber ports.

(9)  This Ethernet Switch is to be periodically serviced in order to maintain its performance.
Please assign a product administrator, and 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.

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

(11) 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. whereas
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.

(12) It is recommended that this Ethernet Switch be replaced about five years after it has been installed.
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.

(13) 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
communication lines which might cause communication glitches.

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## 14. Basic Instructions for the Use of This Product

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

(2) Use commercial power supply from a wall socket, 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 metal terminal of the RJ45 connector, the modular plug of connected twisted pair cable, or the metal terminal of the SFP extension slot. Do not place charged objects in the proximity of them. 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) 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).

(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.)
- 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.

(11) Please use this Ethernet Switch in place where ambient temperature is from 0 to 45° C.
Failure to meet the above conditions may result in fire, electric shock, breakdown, and/or malfunction. Please take notice because such cases are out of guarantee.
Additionally, do not cover the bent hole of this Ethernet Switch.
Deviation could lead to high internal temperature, equipment failure and/or malfunction.

(12) When stacking Ethernet Switches, leave a minimum of 20 mm space between them.

(13) When connecting the stacks, be sure to use firmware versions that are identical for all of the devices.
Please note that operations are not guaranteed if the firmware versions are different.

(14) Select the appropriate cables and lay them.
Communications might be affected by how the cables are laid, and environmental noise.