ARIOONE POE SWITCH Series

Product Overview

Arioonet switch Series Unmanaged Switches consists of switches which are ideal for small to medium-sized businesses, Internet cafes, hotels, schools, and suitable for surveillance . They are easy to install and maintain and provide rich services, helping customers build secure, reliable, and high-performance networks. It is an economical way for SOHO and Small-to-Medium Businesses (SMB) to take advantage of Gigabit Ethernet speeds with copper/fiber ports as well as PoE/PoE+ with power budget up to 600W capability while reducing energy consumption and minimizing noise. This Series switches are available in 4 to 48 Gigabit Ethernet ports or 4 to 48 Fast Ethernet Ports with 2/4 modular copper/Fiber Uplinks having enclosure type desktop, rack/wall mountable - 1U depending on switch model. Designed for operational simplicity to lower total cost of ownership, they enable scalable access layer office and home operations.

It can be quickly set up with plug and play with Zero Touch Provisioning . It is unmanaged SOHO (Small Office/Home Office) Switches, are designed for Small Business Networks, unmanaged Switches empower your growing business instant flexibility with copper as well as fiber ports connectivity along with PoE/PoE+ reliable performance at a very affordable cost. This switch Giga ethernet high-speed network connectivity, auto-negotiation for optimal speed detection through RJ45 Category 5, 5e or 6 cables and supports up to 250m cable distance.

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It can identify and determine the correct transmission speed and half/full duplex mode of the attached devices. It also supports standard Auto-MDI/MDI-X that can detect the type of connection to any Ethernet device without requiring special straight or crossover cables, Store-and-Forward forwarding scheme to ensure low latency and high data integrity.

It supports Energy Efficient Ethernet (EEE), which enables the switch to enter a power-saving mode when traffic is light. Switches can smartly automatically adjust the PoE/PoE+ power output for transmissions based on the cable length for PoE/PoE+ devices connected . It can also set any ports that are not transmitting traffic to sleep mode.

Product Highlights#

- 4 to 48 * 10/100/1000Mbps Ethernet Ports along with flexible fiber/copper Uplinks and PoE(PoE+) and non PoE Models.
- All 4 to 48 ports support auto-negotiation and auto MDI/MDIX
- All ports capable of Gigabit Ethernet connections and provide full speed of data transferring with (Auto-Negotiation/Auto MDI/MDIX) model based.
- Extra 2/4 Ports slots with separate, flexible 1 Gigabit Ethernet Fiber/Copper Switchports or Uplinks.
- Enclosure Type Desktop, Rack/Wall mountable - 1U.
- Power over Ethernet (PoE) / Power over Ethernet plus (PoE+) models to provide power on all ports to IEEE 802.3af and IEEE 802.3at (15.4W, 30W) capable devices including Wireless AP, Bridges, IoT etc. according to the power budget Up to 600 W.
- All ports have PoE/PoE+ capability and 30W Max Per port.

- PD detection will automatically detect and provide required power for your PoE/PoE+ devices.
- Easy Installation, Plug-and-play installation with no configuration required
- Support Store-and-forward Switching
- Backplane Bandwidth: 1.2Gbps-56Gbps
- MAC address Table: 8000 entries
- MAC Address Auto-Learning and Auto-Aging
- Surge protection ±4 kV
- All ports support jumbo frame of size 10000 bytes transmission.
- Plug and Play design simplifies installation with self-adaption.
- Desktop as well standard rack mountable option along with fan or fanless option, silent design with Small form-factor. Perfect for noise sensitive environments.
- Energy-Saving by Energy Efficient Ethernet (EEE), which enables the switch to enter a powersaving mode when traffic is light.
- Automatically adjust the PoE/PoE+ power for connected PoE devices based on the cable length and supports up to 250m of cable length.
- With Zero Touch Provisioning: Plug and play and no setup.
- Affordable, Easy-to-Use Switches for Business Networks, with Zero Configuration Required Comes with one-year default warranty – optionally extendable up to 3 years.

Features and Benefits

Easy to Use

ARioonet POE Series Switches are easy to use and manage. All switches are Plug-an-Play devices that requires zero configuration, so setup is simple and hassle-free. Auto MDI/MDI-X crossover on all ports eliminate the need for crossover cables or uplink ports. Auto-Negotiation on each port senses the link speed of a network device (Either 10, 100 or 1000) and smartly adjusts for compatibility and optimal performance. Its compact size makes it ideal for desktops as well as rackmount with limited space. Dynamic LED lights provide real-time work status display and basic fault diagnosis.

PoE/PoE+ Capabilities

Poe Series Switches are high power switches and support 150W up to 600W (PoE/PoE+)
Power Budget. This Series switches smartly adjust IEEE802.3af / IEEE802.3at PoE/PoE+ (up to 30 Watts per port). All ports in PoE/PoE+ capable switch allows Power-over-Ethernet (PoE /PoE+) to connect and power PoE/PoE+ capable cameras, Wireless access points, VoIP phones, IoT and all PoE/PoE+ capable devices using just Ethernet cabling.

Auto MDIX Capabilities

 Switches are high power switches and support 150W up to 600W Auto sensing/Auto PoE/PoE+ 10/100/1000 ports with auto MDIX capabilities which also removes speed and duplex mismatches automatically as well as covers larger physical distance with copper pairs compared to other brands best switches .

Compact and Silent Performance

It comes with one or two fans or fanless models with compact PoE/PoE+ switch operates quietly, making it ideal for use in virtually any room or office. Perfect for noise sensitive environments. Fan based Switches have

Temperature- and load-based fan-speed control combines accurate monitoring with minimized system acoustic noise. The Fan based switches also feature built-in smart fans that monitor and detect temperature changes, adjusting the fan speed for maximum efficiency. At lower temperatures, the fans run at a lower speed, reducing both the power consumption and noise output of the switch.

Small form-factor, Compact design with flexibility of additional ports

It Provides additional deployment flexibility, fiber connectivity with separate extra flexible ports or combo ports options for easy expansion of your networks. So, you can directly connect to a highperformance storage server or deploy a long-distance uplink to another switch.

Support uninterrupted critical network infrastructure

It has AC input power which protect from power surges through their inline power supply automatically and have in build Surge protection of ±4KV. With this feature protect on cost and the impact to your business by losing these network devices and thus the users/servers connected to them.

Cost Efficient

State of art quality product that can serve on real time high-speed Performance with AC input power which covers larger physical distance with copper pairs compared to other brands best switches and are highly reliable, conformance to international open standards , durable, serviceable, aesthetics, perceived quality, enhanced performance with larger range with copper cables up to 250m and usability leads to value to money.

Green Technology

It features the energy-efficient Ethernet that can save power. It automatically adjusts power consumption according to the link status to limit the carbon footprint of your network. It also complies with RoHS, prohibiting the use of certain hazardous materials. Besides that most of the packaging material can be recycled and reused.

Hardware

Series Unmanaged Switches supports IEEE 802.3 10BASE-T Ethernet,
IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, IEEE 802.3af/at. Supported Auto-MDIX function automatically identify straight forward cable and cross-over cable. Support port auto-negotiation function (Automatically negotiate transmission rate and Duplex modes). Support the Energy Efficient Ethernet (IEEE 802.3az) standard, which reduces energy consumption by monitoring the amount of traffic on an active link and putting the link into a sleep state during quiet periods.

Solid performance with non-blocking architecture

- CPU Dual Core having frequency 500 MHz along with packet Buffer memory of 4.1MB.
- All ports capable of Gigabit Ethernet speed. Full speed of data transferring with (AutoNegotiation/Auto MDI/MDIX)
- Solid performance with non-blocking architecture, 8000 entries MAC Address Table with 4-way hashing
- Jumbo frames of 10000 bytes.

- 2-hash algorithm selection for L2 table searching/learning with Aging timer range from 0.2s to 1600000s.
- Switching Capacity : up to 56Gbps
- Forwarding Capacity : Up to 41.66Mpps •Store-and-forward Switching Scheme.

Physical Ports and Networking Interfaces

- Up to 48 x 10/100/1000 Mbps Rj45 Ethernet Ports with separate ports 4 GE(RJ-45) , 4 SFP and also combo port option 4 GE(RJ-45) , 4 SFP in some models. Extra separate 2/4 Ports with flexible 1 Gigabit Ethernet Fiber/Copper Switchports /Uplinks.

- LED Indicators :Power, Link/Act, PoE Max.

IEEE 802.3af/at Compliant Power over Ethernet

- Various power budget options like 75W, 150W, 260W, 450W and 600W with 30W Max Per port (PoE/PoE+). POE power supply transmission is more reliable due to design of robust network transformer which uses high current. All PoE/PoE+ ports are IEEE 802.3af-compliant PoE, IEEE802.3at-compliant PoE+. Each port delivers 15.4 W PoE, 30 W PoE+ power. PD detection will automatically detect and provide required power for your PoE/PoE+ devices. #

Extra Long operational life

- High Quality PCB Circuit Board and PCB Surface Treatment Using Gold Sinking Process.
- Support temperature range 0° C to 55° C
- Surge protection up to ±4KV to designed to automatically protect Switches from surge events by limiting transient voltages and diverting surge currents.
- Long life electrolytic capacitance to increase the operational life of switches. RJ45 Gold plated with 3U thickness.
- Rack and Wall mount design that enables to mounts in an EIA - Standard 19-inch telco rack or equipment cabinet along with Rack-mounting kit available with device. Which enables horizontal surface mounting, wall mounting and also having durable robust metal body.

Green Energy and Noise-free Operation

- Comply with IEEE 802.3az (Energy-Efficient Ethernet) standard, reduces power consumption up to 58% and reduce the noise pollution. Energy Efficient Ethernet (EEE) on the RJ-45 ports and lowpower operations for industry best-in-class power management and power consumption capabilities. The ports support reduced power modes so that ports not in use can move into a lower power utilization state.
- Automatic Temperature Controlled Fans using Temperature Sensor. Small form-factor, fanless as well fan design for silent operation. Perfect for noise sensitive environments.
- Temperature Control Fan to optimize cooling and noise with bilateral heat dissipation.

Ethernet Protocols

It Supports wide range of IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet,

IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, 802.1p priority, Energy Efficient Ethernet, IEEE802.3af, Power over Ethernet, IEEE802.3at, Power over Ethernet plus.

Enterprise High reliability design and high quality product

- Very high Quality as for all Mean Time Before Failure of system, MTBF >2,00,000 hours
- Stability: 64-bit packet, time delay < 10us, packet loss rate: 0
- Restorability of Network shaking or device breakdown, restart(recovery) time < 60sec.
- RoHS Compliant with most of the packaging material can be recycled and reused.

Specifications

ARioonet switch Series Smart Switches supports IEEE 802.3 10BASE-T Ethernet, IEEE 802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000BASE-T Gigabit Ethernet, IEEE 802.3z Gigabit Ethernet, IEEE 802.3x Flow Control, IEEE 802.3af/at. Supported Auto-MDIX function automatically identifies straight forward cable and cross-over cable. Support port auto-negotiation function (Automatically negotiate transmission rate and Duplex modes). Support the Energy Efficient Ethernet (IEEE 802.3az) standard, which reduces energy consumption by monitoring the amount of traffic on an active link and putting the link into a sleep state during quiet periods.

It supports 8K entries in the 4-way hash L2 table for
MAC address learning and searching also has two hash algorithms for IVL (Independent VLAN Learning), SVL (Shared VLAN Learning), and IVL/SVL (both Independent and Shared VLAN Learning) for flexible network topology architecture. It also has per-port L2 storm filtering control mechanism which suppresses the flow rate of some specific packets for Unknown Unicast Storm, Unicast Storm, Unknown Multicast Storm, Multicast Storm, and Broadcast Storm. IEEE 802.3az
Energy Efficient Ethernet (EEE) for 100Base-TX in full duplex operation and supports 10Base-Te for 10Base-T in full/half duplex. The Energy Efficient Ethernet (EEE) operational mode combines the IEEE 802.3 Media Access Control (MAC) Sub-layer with a family of Physical Layers defined to support operation in Low Power Idle (LPI) Mode. When Low Power Idle Mode is enabled, systems on both sides of the link can disable portions of the functionality and save power during periods of low link utilization. EEE operational mode supports IEEE 802.3 MAC operation at 100Mbps. For 100Mbps operation, the 100Base-TX PHY is supported interoperable with legacy 10Base-T PHYs over 100m of Class-D (Category 5) or better cabling. It supports IEEE 802.3x full duplex flow control. If one port's received frame buffer is over the pause threshold, a pause-on frame is sent to indicate to the link partner to stop the transmission. When the port's received frame buffer drops below the pause threshold, it sends a pause-off frame. Auto MDI/MDI-X adjusts automatically for straight-through or crossover cables on all 10/100/1000 ports. Loop protection, If the switch detects a loop, it disables the source port from forwarding data packets originating from the switch to avoid broadcast storms. SFP fiber uplinks provides greater distance connectivity using Gigabit fiber uplinks. The switch provides an estimated cumulative energy savings due to green Ethernet features being auto enabled along with power budget up to 450W.

Table 1 Unmanaged Switches Technical Specifications

Parameter	Specification
Flash (KB)	16Kbytes
Packet Buffer Memory	4.1 MB

Switching Method	Store and Forward
Switching Capacity	1.6Gbps to 56Gbps
MAC Address Table Size	8000 entries
Maximum packet length	10000byte
Operation Temperature	0° to 55°C
Storage Temperature	-20° to 70°C
Operation Humidity(relative noncondensing)	10% to 90%
Storage humidity(relative noncondensing)	5% to 90%
Input Power Supply	AC input power 100 to 240V AC or 180 to 240V AC (Model Dependent)
LED Indicator	Link/Act?PoE PoE MAX?Power
Energy Saving	Comply with "EEE" Energy Efficient Ethernet (IEEE 802.3az)
Surge protection (kV)	± 4 kV
Rack-mountable	Desktop Rack/ Wall mountable depending on model
Fan (Number)	Fanless and 1 or 2 Fan depending on model

Table 2 Switches Cable Lengths

Connection Cable Type	Category and Speed	Maximum Cable Distance Supported
Unshielded Twisted Pair cable	10/100Base-TX:UTP category 5/5e/6 cables (Maximum 100m) 1000Base-T:UTP Category 5/5e/6 cable (Maximum 100m)	100M
Shielded Twisted Pair cable	10/100Base-TX:STP category 5/5e/6 cables (Maximum 250m) 1000Base-T:UTP Category 5/5e/6 cable (Maximum 100m)	100M
Optical Fiber Cable	550M~120KM Depending on SFP	120KM