FIBERROAD®

L2+ Managed Ethernet Switches

FR-PTP3412

Industrial L2+ Managed 12-port 10/100/1000Base-TX + 2-port 100/1000M/1.25GBase-SFP + 2-port 100/1000M/1.25G/2.5GBase-SFP PTP Ethernet Switch with Redundant DC Power Inputs

Product Data Sheet

FR-PTP3412

FR-PTP3412 is an industrial grade ethernet switch independently developed by Fiberroad that supports PTP precise clock synchronization function. This product is mainly aimed at industrial application scenarios with strict delay forwarding requirements for Ethernet business flows. It supports hardware timestamps based on IEEE1588 protocol and 802.1AS, and supports clock modes such as BC, TC, OB, etc.

Supports multiple Ethernet link redundant ring network functions such as STP/RSTP/MSTP, ERPS, MRP, etc. It supports single ring, tangent ring, and inter ring coupling topologies, with redundant switching time ≤ 50ms, which can meet the redundant networking needs of most industrial control field sites.

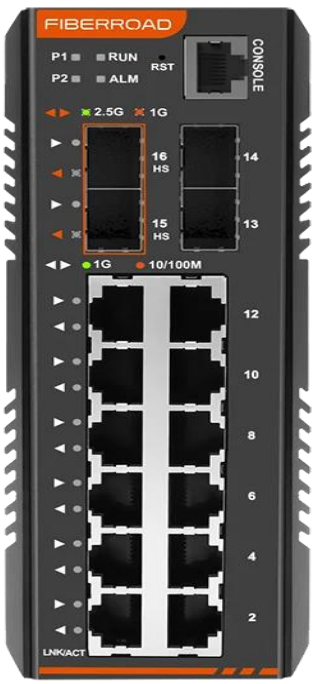
Support high reliability, high availability, and high precision time delay in scenarios with low latency and high bandwidth, such as industrial Internet of Things, industrial Internet, smart grid, smart factory, smart city, and intelligent transportation, or scenarios with real-time analysis and collaboration requirements, such as remote installation, vehicle road collaboration, industrial control, driverless driving, mobile computing, and smart medicine.

Supports 4 SFP slots and can flexibly choose gigabit 2.5G, 1.25G, or 100Mbps optical modules. It also supports 12x10/100/1000M adaptive RJ45 ports, meeting the front-end access and networking needs of industrial sites.

Supports layer 2 Ethernet protocols such as VLAN, QoS, multicast, ring network, etc. It also supports PTP1588 and 802.1AS based timing, as well as multiple modes such as transparent clock, boundary clock, master/slave clock, etc. It can be flexibly configured and used according to the real-time and non real-time requirements of the network.

Supports various access methods for management such as CLI, Web, Telnet, SSH, etc. It also supports our FR-VIEW upper switch management and can meet the requirements of a unified management platform.

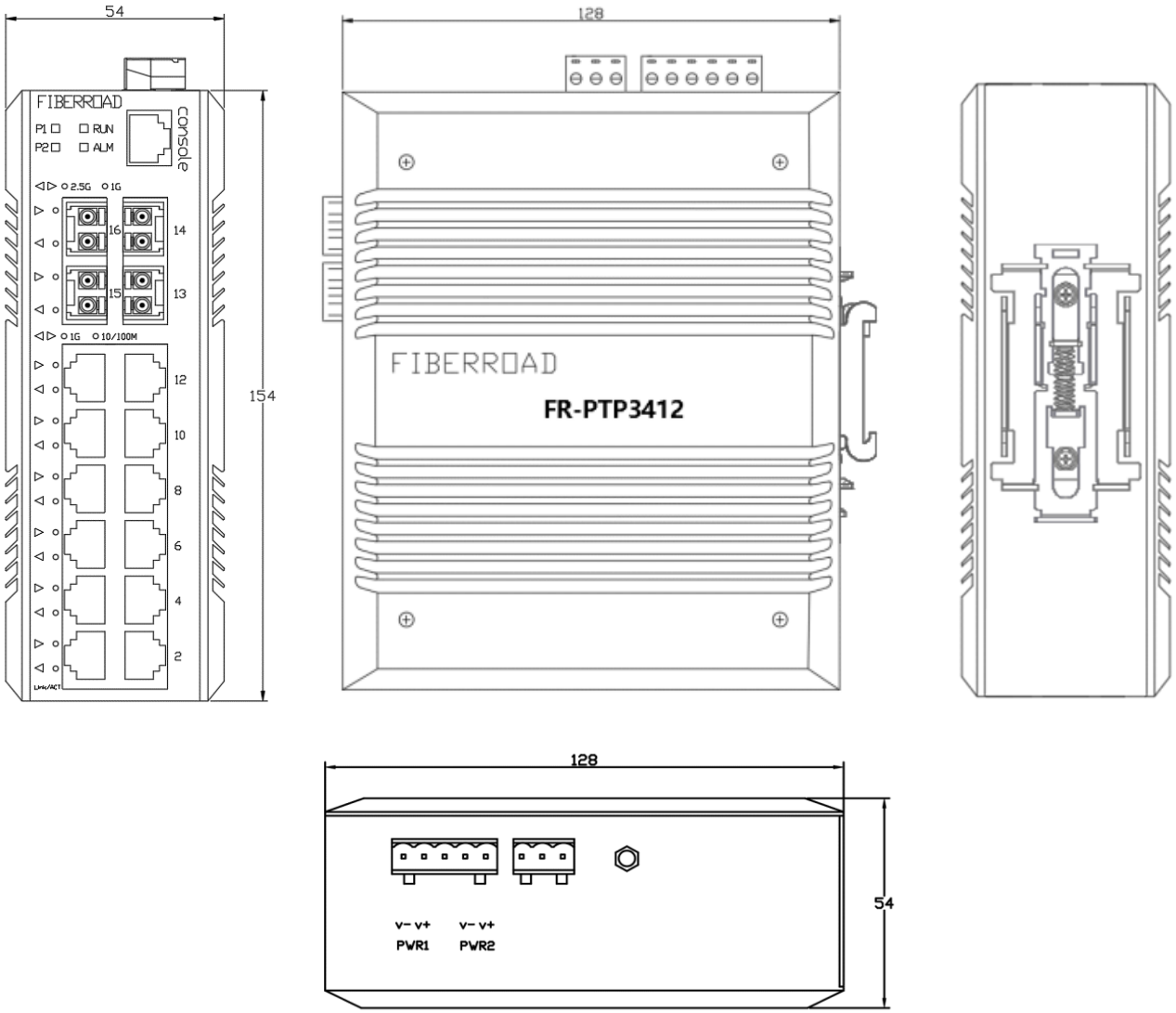
FR-PTP3412 is an industrial switch designed by Fiberroad Technology Co., Ltd. to meet the high-performance and high reliability requirements of industrial video, voice, and data applications brought about by the increasing integration of information technology in industrial sites. It can be used as a high bandwidth main controllable network in industrial scenarios, improving the reliability and availability of IT/OT integrated applications.



Hardware Specifications	FR-PTP3412
IEEEStandards	802.1D、802.1p、802.1Q、802.1s、802.1w、802.3ab、802.3ad、802.3x、802.3z、802.3az、803.2ae、G.8032、IEEE1588
Exchange Performance	MACAddress: 8K Bandwidth： 36GbpsPacket Buffer Size: 4M Delay Time: 5μs(Normal, not in Time-Synchronization Mode) Transmission Mode: Store and Forward， Support 9600Bytes Jumbo Frame
Ethernet Ports	4 SFP slots, Port15-16 supports optional 2.5G, 1.25G, or 100M optical modules Port13-14 supports 1.25G or 100M optical modules Optical port supports comprehensive DDM diagnostic function Support 12x10/100/1000M adaptive RJ45 ports
Management Port	RS232interface, RJ45, 115200bps,8,N,1
Indicator	Power indicator, Operation Indicator, Alarm Indicator, Optical Port and Electrical Port Indicator
Reset Button	Support one click reset button, long press for 10 seconds
Power Requirement	Input voltage: DC9~56V Input method: Redundant dual input Interface type: 5-Pin 5.08 pitch Phoenix terminal blocks Support Overload Current Protection, Overload Voltage Protection, Reverse Polarity Protection
Alarm	DC24V@1A 3-Pin Phoenix terminals with 5.08 pitch, supporting dual alarms
Power Consumption	DC12V@1.3A Power consumption ≤ 15W (Normal Value)
Environment Requirement	Operating temperature: -40 ℃~75 ℃ Storage temperature: -40 ℃~85 ℃ Operating humidity: 5%~95% (no condensation)
Dimension	Installation method: DIN Rail Installation or Wall Mounted Installation Installation dimensions: Length x Width x Height (mm): 154 x 127 x 54 (Excluding Din-Rails and Hanging Plates) Heat dissipation: natural heat dissipation (fanless design)
MTBF	⩾300000hours
Warranty	5years

Software Specifications	FR-PTP3412
System Information	Equipment panel graphical overview Equipment and system information CPU status information IPv4, IPv6 interface and routing status information Support log record
System Management	Support system information configuration Support system user management and user level management Support IPv4 and IPv6 management interface configuration and management interface Support IP Route gateway Support SNMPv1/v2/v3 protocol, support Web and Telnet access management, and support FR-VIEW Support LLDP link discovery protocol
Network Clock	Support NTP protocol and network host time synchronization Support 1588, 802.1AS and on-board AS clock protocol Support transparent clock, boundary clock, master clock, slave clock and other modes
Layer 2 Management	Support port status, port traffic statistics, port priority status and other details and management control Support SFP optical module DDM diagnostic information function Supports port VLAN and VLAN Tag modes, and supports Access, Trunk, and Hybrid modes Support private PVLAN, voice VLAN and GVRP dynamic VLAN Support VLAN based on MAC, protocol, IP subnet or stream Support QoS, DSCP based mapping and SP scheduling algorithms, and credit based algorithms Support port aggregation function based on static and LACP Support IGMP snooping multicast, support multicast LAN auto registration MVR function Support MVRP multi VLAN registration protocol based on MSTI
Ring Network Redundancy	Support RSTP, MSTP Support MRP media redundancy protocol Support ERPSv2 redundancy protocol Support APS automatic loop switching protocol
Layer 3 Route	Support Static Route
Security	Support SSH and HTTPS based secure WEB configuration access Support RMON statistics, events and alarms Support port security and port+VLAN+MAC binding function Support network access service control, RADIUS, guest VLAN Support ACL access control list, support access control based on IPv4, IPv6, protocol and port Static IP source address protection function Static and dynamic ARP protection function AAA protection
Device Management	Support SNMPv1/v2/v3 protocol, support Web and Telnet access management, and support FR-VIEW Support LLDP Support DHCP Snooping and DHCP server management Support port mirroring Support “sFlow” flow sampling function Support configuration of download and upload functions
Network Maintenance	Support CFM connectivity detection function, loopback function and link tracking function Support Ping and Traceroute diagnosis Link OAM management

Dimension（Unit:mm）



Ordering Information

Available Model	Description	Input Voltage	Operating Temp.
FR-PTP3412	Industrial L2+ Managed 12-port 10/100/1000Base-TX + 2-port 100/1000M/1.25GBase-SFP + 2-port 100/1000M/1.25G/2.5GBase-SFP PTP Ethernet Switch with Redundant DC Power Inputs	Dual DC9-56V	-40 to +75℃

Optional Accessories (to be purchased separately)

SFP Optical Transceiver	
(S)=SFP Option	Please select your SFP on our SFP Modules page for details.

Precautions

To prevent equipment damage or personal injury caused by improper operation, please observe the following precautions:

- Turn off the power before installation. Wear an anti-static wrist strap and ensure proper skin contact to prevent electrostatic discharge (ESD) damage.
- Ensure the power supply voltage matches the voltage specified on the switch.
- Before powering on the switch, verify that the power circuit is not overloaded to avoid abnormal operation or equipment damage.
- Do not open the chassis while the switch is operating. To avoid the risk of electric shock, do not disassemble the device.
- Disconnect the power before cleaning. Do not use a wet cloth or liquid cleaners.
- When installing in a rack, mount equipment from bottom to top to prevent overloading.
- Do not place heavy objects on the switch.