# FR-5M3224 • FR-5M3224P • FR-5M3224BT

L2+ Managed 24-port 10/100/1000Base-TX (Non-PoE/PoE+/PoE++)+2-port 100/1000Base-SFP Ethernet Switch with AC Power Input








## Main Features

### Layer 2+ Features

- Jumbo frame support
- 802.1Q / Q in Q / GVRP / Private VLAN (4K groups)
- STP/RSTP/MSTP for loop prevention
- LACP link aggregation

### PoE Functions

- 802.3at/bt PoE (30W/90W per port)
- Scheduling, priority, PD auto reboot
- Long reach PoE 250m, data rate at 10Mbps
- Real time status monitoring + threshold alarms

### Software Management

- IPv4 static routing
- QoS with 8 priority queues + rate limiting
- CLI / WebGUI / SNMP v1/v2c/v3, LLDP, syslog

### Hardware

- 0°C~50°C operation
- AC power input
- NDAA & RoHS

### Security

- 802.1X / RADIUS authentication
- IP/MAC based ACL
- DHCP Snooping + Port Security + SSHv2

CE FC

Protected by hardware warranty
Advance replacement. Global coverage.

View policy on Fiberroad's website.

# Product Specifications

## FR-5M3224 • FR-5M3224P • FR-5M3224BT



| Product | FR-5M3224 | FR-5M3224P | FR-5M3224BT |
|---|---|---|---|
| **Interface** | | | |
| RJ45 Ports | 24x10/100/1000BASE-T | | |
| SFP Ports | 2x100/1000BASE-X | | |
| Console | 1x RJ45-to-RS232 Serial Port(115200) | | |
| **Electrical and Mechanical** | | | |
| Input Voltage | AC 100-240V, 50/60Hz 0.15A | | |
| Power Consumption | 15 Watts Max (without PoE Load) | | |
| PoE Ports | \ | Port 1 to 24 IEEE802.3 af/at | Port 1 to 24 IEEE802.3 af/at/bt |
| PoE Power Supply Type | End-span | | |
| Power Supply Pin | \ | 1/2(+),3/6(-) | 1/2(+), 3/6(-) or 4/5(+), 7/8(-) |
| Max Power Per Port | \ | 30W | 90W |
| Max. PoE Power Budget | \ | 400W (Default); 800W (Optional) | 800W (Default); 1500W (Optional) |
| Surge Protection | ±4kV DC, ±4kV RJ45 | ±4kV DC, ±6kV RJ45 | |
| Enclosure | IP30 Metal | | |
| Dimension | 440mm*300mm*45mm, 4.95kg | | |
| **Standards** | | | |
| IEEE 802.3 | 10BaseT | | |
| IEEE 802.3u | 100BaseT(X) and 100BaseFX | | |
| IEEE 802.3ab | 1000BaseT(X) | | |
| IEEE 802.3x | Flow Control | | |
| IEEE 802.1p | Class of Service | | |
| IEEE 802.1Q | VLAN Tagging | | |
| IEEE 802.1x | Authentication | | |
| IEEE 802.3ad | Port Trunk with LACP | | |
| IEEE 802.1D | Spanning Tree Protocol | | |

# Product Specifications

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| **Standards** | | | |
| IEEE 802.1w | Rapid Spanning Tree Protocol | | |
| IEEE 802.1s | Multiple Spanning Tree Protocol | | |
| IEEE 802.1ad | Q-in-Q tunneling | | |
| IEEE 802.3az | Energy Efficient Ethernet | | |
| **Switching** | | | |
| Switch Architecture | Store-and-Forward | | |
| Switch Fabric | 56Gbps/non-blocking | | |
| Forwarding Rate | 38.69Mpps(64-byte packet size) | | |
| Packet Buffer Size | 4 Mbits | | |
| Maximum Packet Length | 10K bytes | | |
| MAC Address Table | 8K entries, automatic source address learning and aging | | |
| Flow Control | IEEE 802.3x pause frame for full duplex, Back pressure for half duplex | | |
| **Software Features** | | | |
| Port Configuration | Port(Admin Status) disable/enable<br>Copper Port: Auto-negotiation 10/100/1000Mbps full and half duplex mode selection<br>Fiber Port: 100M/1000M speed selection<br>Flow Control disable/enable<br>Power saving(EEE) disable/enable<br>Each port description | | |
| Port Status | Display each ports' speed duplex mode, link status, flow control status,<br>auto negotiation status, Fiber Port Information, Port Traffic | | |
| Port Mirroring | Source Ingress/ Egress Port/ Both, Many-to-1 monitor | | |
| VLAN | Up to 4K VLAN groups, out of 4094 VLAN IDs<br>IEEE 802.1Q tag-based VLAN<br>IEEE 802.1AD Q-in-Q tunneling(Double VLAN)<br>GVRP(Generic VLAN Registration Protocol) | | |
| Link Aggregation | IEEE 802.3ad LACP/Static trunk<br>Supports 6 trunk groups with 4 ports per trunk | | |
| Spanning Tree Protocol | IEEE 802.1D Spanning Tree Protocol<br>IEEE 802.1w Rapid Spanning Tree Protocol<br>IEEE 802.1s Multiple Spanning Tree Protocol | | |

# Product Specifications

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| Product | FR-5M3224 | FR-5M3224P | FR-5M3224BT |
|---|---|---|---|
| **Software Features** | | | |
| Multicast | Dynamic/Static Multicast groups<br>IGMP Snooping v1,2,3<br>Port-based IGMP Snooping Fast Leave<br>GMP Querier | | |
| Rate Limitation | Per Port Rate Limitation<br>Ingress: 16-1000000 kbps/Egress: 16-1000000 kbps | | |
| Ring | ITU-T G.8032 ERPS, Recovery time<20ms | | |
| QoS | Traffic classification based, strict priority and WRR<br>8-level priority for switching<br>-Port number<br>-802.1p priority<br>-802.1Q VLAN tag<br>-DSCP/TOS field in IP Packet | | |
| ACL | IP-based ACL/MAC-based ACL<br>ACL based on:<br>-MAC Address<br>-IP Address<br>-Ethertype<br>-Protocol Type<br>-VLAN ID<br>-DSCP<br>-802.1p Priority | | |
| Security | Port Security<br>Static MAC address<br>IEEE 802.1x port-based network access control<br>RADIUS authentication<br>DHCP Snooping, DHCP option 82 | | |
| **PoE Management Functions (PoE Model)** | | | |
| PoE System Management | PoE Port status monitoring<br>Total PoE power budget control<br>PoE usage threshold and temperature threshold<br>PoE port Priority<br>PoE mode(PoE/PoE+/PoE++)<br>PD reboot(Zero Traffic Duration) | | |
| PoE Schedule | Absolute/Periodic Mode | | |
| **Layer 3 Functions** | | | |
| IP Interfaces | Max. 8 VLAN interfaces | | |
| Routing Table | Max.32 routing entries | | |
| Routing | IPv4 software static routing | | |

# Product Specifications

## FR-5M3224 • FR-5M3224P • FR-5M3224BT

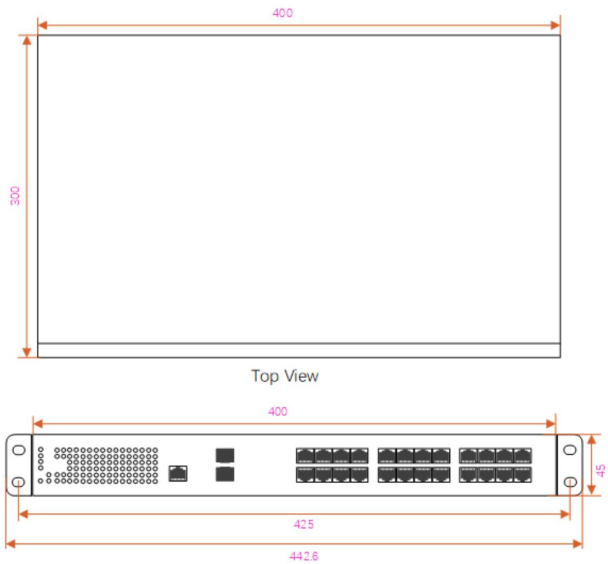


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|---|---|---|---|
| **Management** | | | |
| Basic Management Interface | Console; Telnet; Web browser; SNMPv1/v2c | | |
| Secure Management Interface | Firmware Upgrade by HTTP protocol through Ethernet network<br>Configuration upload/download through HTTP<br>Remote syslog, System log<br>LLDP protocol, SNTP<br>PREVIEW NMS<br>Alarm(Relay, Led, Temperature, Trap, Power) | | |
| **Environmental** | | | |
| Operating Temperature | 0 °Cto 50 °C | | |
| Storage Temperature | -20°Cto 70°C | | |
| Operating Humidity | 5%~95% (non-condensing) | | |
| MTBF | 147,595 hours (Non-PoE Models) 126,424 hours (PoE Models) @MIL-HDBK-217F GB | | |
| Cooling | Passive Cooling, Fanless Design | | |
| Noise Level | 0 dBA | | |
| **Regulatory & Warranty** | | | |
| ISO | Manufactured in ISO-9001facility | | |
| Safety | IEC62368-1:2020+A11:2020 | | |
| EMI | FCC Part 15B Class A, IEC 61000-3-2 | | |
| EMS | IEC61000-4-2 ESD: Contact:±8kV, Air:±15kV<br>IEC61000-4-5 Surge: Power: ±6kV; RJ45:±4kV/±6kV(PoE) | | |
| Environmental | RoHS 2011/65/EU Annex II(EU) | | |

# Product Specifications



## Dimension (Unit: mm)




## Ordering Information

| Available Model | Description | Input Voltage | Operating Temp. |
|---|---|---|---|
| FR-5M3224 | L2+ Managed 24-port 10/100/1000Base-TX +2-port 100/1000Base-SFP Ethernet Switch with AC Power Input | AC220V | 0 to + 50°C |
| FR-5M3224P | L2+ Managed 24-port 10/100/1000Base-TX (PoE+) +2-port 100/1000Base-SFP Ethernet Switch with AC Power Input | AC220V | 0 to + 50°C |
| FR-5M3224BT | L2+ Managed 24-port 10/100/1000Base-TX (PoE++) +2-port 100/1000Base-SFP Ethernet Switch with AC Power Input | AC220V | 0 to + 50°C |

| Optional Accessories (to be purchased separately) | |
|---|---|
| SFP Optical Transceiver | Please select your SFP on our SFP Modules page for details. |

| Package Contents | |
|---|---|
| Device | 1x Ethernet Switch |
| Cable | 1xDB9 female to RJ45 10-pin<br>AC Power Cable (Regional Power Plug) |
| Installation Kit | 2x Rack-Mount Kits |

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