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LM1604FMGP-IL2+ DATASHEET

Industrial Ethernet Switch 20-port 10/ 100M / 1000M

The LM-1604FMGP-IL2+ is a full Gigabit L2+ managed industrial PoE Ethernet fiber switch independently developed by Lanmus.

It has 16*10 / 100 / 1000 Base-T PoE ports Port 1-16 can support (IEEE802.3af/at， with a maximum power of 30W per port and a total power of 240W.

Product Introduction

20-port 10/100M/1000M
L2+ Managed Industrial PoE Ethernet Switch

Product Overview

The LM1604FMGP-IL2+ is a full Gigabit L2+ managed industrial PoE Ethernet fiber switch independently developed by Lanmus. It has 16*10/100/1000Base-T PoE ports Port 1-16 can support (IEEE802.3af/at， with a maximum power of 30W per port and a total power of 240W) and 4*100/1000Base-X SFP fiber ports.

It and supply power through the network cable. It can supply power to POE terminal equipment such as wireless AP, webcam, VoIP, sensor through the network cable.

The LM1604FMGP-IL2+ features L2+ network management functionality, supporting IPv4 static route forwarding, a comprehensive security protection mechanism, ACL/QoS policies, and rich VLAN functions, making it easy to manage and maintain. Support multiple network redundancy protocols STP/RSTP/MSTP(<50ms) , support ERPS ring network function(convergence time<20ms) to improve link backup and network reliability to ensure uninterrupted communication of important applications.

According to actual application needs, Routing address management, port management, port flow control, VLAN division, IGMP, security policy and other application service configurations are performed through Web, CLI, SNMP, Telnet and other network management methods.

The shell is made of aluminum alloy, which has excellent industrial field environmental adaptability (including mechanical stability, climate environment adaptability, electromagnetic environment adaptability, etc.), protection level is IP40, support dual redundant power supply, low power consumption and no fan, 3-year warranty. It is suitable for industrial scenarios such as intelligent transportation, rail transit, electric power industry, mining, petroleum, shipping, metallurgy and green energy construction to establish a cost-effective, stable and reliable communication network.

Product Introduction

Hightlight Features

- Gigabit access, SFP fiber port uplink
- 16*10/100/1000 Base-T PoE ports
- 1*RS232 console port
- Port 1-16 support 10/ 100/ 1000Base-T auto-sensing, full/half duplex
- MDI/MDI-X self-adaption
- 10BASE-T: Cat3,4,5 UTP(≤100 meters)
- 100BASE-TX: Cat5 or later UTP(≤100 meters)
- 1000BASE-T: Cat5e or later UTP(≤100 meters)
- Gigabit SFP optical fiber interface, default no include optical modules (Only supports single-mode single fiber optical module. LC)
- Supports ERPS ring network function, with a maximum number of rings of 5 and a convergence time of<20ms
- multimode: 850nm 0~550M,1310nm 0~2KM
  single mode: 1310nm 0~40KM ， 1550nm 0~120KM

Gigabit access, 10G fiber uplink

- Support Gigabit Ethernet port and Gigabit SFP port combination, which enables users to flexibly build networking to meet the needs of various scenarios
- Support non-blocking wire-speed forwarding.
- Support full-duplex based on IEEE802.3x and half-duplex based on Backpressure.

Intelligent PoE power supply

- 16*10/100/1000 Base-T PoE ports
- IEEE802.3 10BASE-T, IEEE802.3i 10Base-T, IEEE802.3u 100Base-TX
- Support physical single-mode single fiber opticalpath(Bypass) function, pure hardware switching, short switching time, does not affect the data transmission rate and improves the stability of the network system.

Product Introduction

Stable and reliable

- Low power consumption, with fan, Aluminum alloy shell.
- CCC,CE, FCC, RoHS.
- The user-friendly panel can show the device status through the LED indicator of PWR, SYS, Link, L/A , PoE.

Strong business processing capability

- IEEE802. 1Q VLAN, flexible VLAN division, Access,Trunk and Hybrid.
- QoS, Priority mode based on 802. 1P, Port & DSCP, queue scheduling algorithm including EQU, SP, WRR & SP+WRR.
- ALC, filter data packet through configuring matching rules, processing operation & time permission, and provide flexible and safe access control.
- IGMP Snooping V1/V2/V3 meets multi-terminal high-definition video surveillance and video conference access requirements.
- STP/RSTP/MSTP/ERPS.
- Static and dynamic aggregation.

Easy operation and maintenance management

- Web management, CLI command line (Console, Telnet), SNMP (V1/V2/V3).
- HTTPS, SSLV3, and SSHV1/V2
- RMON, system log, LLDP, and port traffic statistics.
- CPU monitoring, memory monitoring, Ping test, and cable diagnose.

Security

- 802. 1X authentication.
- Port isolation, storm control.
- IP-MAC-VLAN-Port binding

SPECIFICATION

MODEL	LM1604FMGP-IL2+
INTERFACE CHARACTERISTICS	
Fixed Port	16*10/100/1000 Base-T PoE ports 4*100/1000 Base-X uplink SFP slot ports 1*RS232 console port
Ethernet Port	Port 1-16 support 10/100/1000 Base-T auto-sensing, full/half duplex MDI/MDI-X self-adaption
Twisted Pair Transmission	10BASE-T: Cat3,4,5 UTP(≤100 meters) 100BASE-TX: Cat5 or later UTP(≤100 meters) 1000BASE-T: Cat5e or later UTP(≤100 meters)
Optical Fiber Port	Gigabit SFP optical fiber interface, default no include optical modules (Only supports single-mode single fiber optical module. LC)
Optical Cable/ Distance	multimode: 850nm 0~550M,1310nm 0~2KM single mode: 1310nm 0~40KM，1550nm 0~120KM
CHIP PARAMETER	
Network Management Type	L2+
Ring network	Supports ERPS ring network function, with a maximum number of rings of 5 and a convergence time of<20ms
Network Protocol	IEEE802.3 10BASE-T, IEEE802.3i 10Base-T, IEEE802.3u 100Base-TX IEEE802.3ab 1000Base-X, IEEE802.3z 1000Base-X, IEEE802.3x
Forwarding Mode	Store and Forward(Full Wire Speed)
Switching Capacity	40Gbps
Buffer Memory	29.7MPPS
MAC	8K

LED Indicator	• PowerIndicatorLight • System indicator • Fiber Indicator Light • On the seat • P： Green • F： Green • 9-10：1 Green (Link,SDFED) • Yellow:Indicate PoE • Green: Indicates network working status
Reset Switch	Yes, Press and hold the reset switch for 5s and release it to restore the factory settings

POE CHARACTERISTICS	
Power Supply Method	SUPPORTS 1,2+, 3,6-POWER SUPPLY
Max Power Per Port	30W per port
Power Supply	DC：48V5A 240W

CERTIFICATION & WARRANTY	
Lightning Protection	• Lightning protection: 6KV 8/20us, Protection level: IP40 • IEC61000-4-2(ESD):±8kV contact discharge,±15kV air discharge • IEC61000-4-3(RS):10V/m(80~ 1000MHz) • IEC61000-4-4(EFT): power cable:±4kV; data cable:±2kV • IEC61000-4-5(Surge):power cable:CM±4kV/DM±2kV; data cable:±4kV • IEC61000-4-6(radio frequency transmission):10V(150kHz~80MHz) • IEC61000-4-8(power frequency magnetic field):100A/m;1000A/m , 1s to 3s • IEC61000-4-9(pulsed magnet field):1000A/m • IEC61000-4- 10(damped oscillation):30A/m 1MHz • IEC61000-4- 12/ 18(shockwave):CM 2.5kV,DM 1kV • IEC61000-4- 16(common-mode transmission):30V; 300V, 1s • FCC Part 15/CISPR22(EN55022):Class B • IEC61000-6-2(Common Industrial Standard)

Mechanical Properties	• IEC60068-2-6 (anti vibration) • IEC60068-2-27 (anti shock) • IEC60068-2-32 (free fall)
Certification	• CCC, CE mark, commercial, CE/LVD EN62368- 1, FCC Part 15 Class B, RoHS

PHYSICAL PARAMETER	
Operation TEMP /Humidity	-40~+75°c;5%~90% rh non condensing
Storage TEMP /Humidity	-40~+85°C;5%~95% RH Non condensing
Dimension (L*W*H)	174mm* 148mm*68mm
Installation	Desktop, DIN rail

L2 FUNCTIONS	
Port configuration	• Auto-negotiation • Flow Control • Port Mirror: TX/RX/BOTH; Many-to-1 monitor • Traffic statistics
Link Aggregation	• Static link aggregation • LACP • Algorithm based on Source/Destination MAC Algorithm based on Source/Destination IP
MAC Table	• Aging Time • Static MAC address • Dynamic MAC address management
ACL	• 256ACLs • L2, L3 e L4 • Time-based ACL

Ring Protection	<20ms G.8032 ERPS Ring • Spanning Tree Protocol (MSTP) Loop Guard • Root Guard • TC-BPDU Guard • BPDU Guard BPDU • Filter
Maintenance	Cable Diagnostics Ping, SFP DDM(Digital Diagnostics Monitoring) Thermal protection, System log (Local and Remote), Memory and CPU Monitoring
VLAN	• 4094 Active VLANs • 4094 VID • 802.1Q Tag VLAN • Port VLAN • Protocol VLAN • MAC VLAN • Voice VLAN • 802.1ad Q-in-Q tunneling Private • VLAN (Protected port) GARP/GVRP
Multicast	• 256 groups • IGMP v1/v2/v3 Snooping, Fast Leave MLD • Snooping • Multicast VLAN
QOS	• port-based • CoS 802.1p-based CoS • DSCP-based • Scheduling algorithms SP, WRR, SP+WRR • Storm Control (Broadcast, Multicast, Unknown Unicast) Bandwidth control per port
DHCP	• SNMP v1/v2c/v3 with Full Private MIBs RMON 4 • groups • WEB (HTTP/HTTPS) • CLI (Telnet, Console, SSHv1/v2) Firmware • upgrade via console/web/TFTP Configuration • Backup/Reload • Dual Firmware • LLDP

Security Features	• Port Security MAC • address filter • ARP Association (Manual, ARP scanning, DHCP snooping) ARP • Protection • DoS (Denial of Service) • Classification of packages based on: End.MAC, IP End, TCP / UDP Ports, Protocol Type; • 802.1x Authentication (port-based e MAC-based) • TACACS/TACACS+ Authentication • RADIUS Authentication • DHCP Filter • Guest VLAN • SSLv2/SSLv3/TLSv1 • SSHv1/SSHv2 • Restriction of WEB access based on: IP Address, And. MAC and Port; Port IsolationLoopback detection
L3 functions	• IPV4 Equal Cost Routing • NG protocol, maximum 1000 entries • ARP protocol, maximum 1000 entries • Pingv6, Telnetv6, TFTPv6, DNSv6, ICMPv6 • IPV4/IPV6 VRRP, the maximum group is 255 • IPV4/IPV6 VLANIF interface supports up to 128 • IPV4/IPV6 static route/default route supports up to 128 entries • L3 network management function, IPV4/IPV6 dual-stack management • Layer 3 routing and forwarding, support communication between different network segments and different VLANs

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