

ISM7100S-2GF-3D-2C

10-Port Layer 2 Gigabit Managed Embedded Switch Module



- Support 2 Gigabit Ethernet ports, 8 100M Ethernet ports, 3 TTL UART and 2 TTL CAN ports
- Support the ring network redundancy protocols such as MW-Ring v1/v2, ERPS and STP/RSTP to improve the network reliability
- Support serial terminal device networking, can convert UDP, TCP, Modbus, HTTPD, WebSocket and other protocols, and supports virtual COM
- Support CAN terminal device networking and achieve bidirectional transparent transmission between CAN bus and Ethernet (UDP/TCP)
- Compact structure and size, convenient for installation, maintenance, and PCB board making
- Support DC3.3V power input
- Working temperature from -40 °C to +75 °C





Product Description

ISM7100S-2GF-3D-2C is a layer 2 gigabit managed embedded switch module, integrating serial port device and CAN device networking. It provides 2 Gigabit Ethernet ports and 8 100M Ethernet ports, supporting fiber or copper port optional. It also provides 3 TTL UART and 2 TTL CAN ports, which can expand RS232/485 serial port and CAN bus port. This switch adopts a storage and forward mechanism, with powerful bandwidth processing capabilities, automatically troubleshooting data packet errors, reducing transmission failures, and ensuring stable, reliable, and efficient data transmission. The hardware is a low-power, wide temperature, and modular design, with a compact structure and small size, which is easy to install and maintain. It can flexibly install and customize interface connection methods. It uses industrial grade components, operating at a wide temperature from -40 °C to +75 °C, embedded installation, able to adapt to various harsh working environments.

The ISM7100S-2GF-3D-2C supports WEB network management function and various network protocols, such as MW-Ringv1/v2, ERPS, STP/RSTP, VLAN, LACP, LLDP, SNMPv1/v2c/v3, QoS, 802.1X, IGMP Snooping, WEB access control, static aggregation, port mirroring, static multicast MAC address binding, network diagnosis, email logs, alarms, SNTP, system logs, and system online upgrades, which can improve network performance, reliability, and security, meet the needs of various complex networks. It supports multiple network working modes such as UDP, UDP Multicast, TCP Client/Server, Modbus RTU Master/Slave, Modbus ASCII Master/Slave, RealCOM_MCP/CCP/MW, Pair Connection Master/Slave, HTTPD Client, WebSocket Client, etc., to achieve serial port to Ethernet or Modbus TCP protocol conversion. And supports network working modes such as UDP, TCP Client/Server, UDP multicast, etc., to achieve CAN terminal device networking. This product meets the requirements of complex networks and harsh industrial environments through strict testing of functions, high and low temperatures, safety regulations and EMC. It can be widely used in fields such as comprehensive energy, smart cities, rail transit, intelligent transportation, smart factories, and industrial automation.



Features and Benefits

- Support rate limits for broadcast, multicast, and unknown unicast messages, detect broadcast and multicast packet storms, and prevent broadcast storms
- Support serial port and CAN terminal device networking, extending transmission distance, and achieving centralized network management
- Support conversion between Modbus RTU/ASCII and Modbus TCP protocols, and Modbus RTU/ASCII Over TCP transparent transmission
- Support multiple subcontracting mechanisms to convert serial/CAN data into Ethernet packets, meeting real-time requirements of different networks
- Support Modbus ID mapping, mapping Modbus slave real IDs to virtual IDs for data communication, avoiding duplicate slave IDs
- Support QoS service quality, prioritize the transmission of voice, video, and important data in network devices, and solve network congestion
- Support 802.1Q VLAN and provides Access, Trunk, and Hybrid interfaces for easy partitioning of multiple broadcast domains, enhancing network security
- Support IGMP Snooping, establish a layer 2 multicast forwarding table, reduce multicast data broadcasting in the network, and save network resources
- Support LLDP link layer discovery protocol, obtains LLDP neighbor device information, monitors link status, facilitates topology management and fault localization
- Support ERPS Ethernet multi ring protection technology, provide multi ring networking, perform link backup, achieve fast convergence, and improve network stability
- Support link static aggregation and LACP dynamic aggregation, which can increase transmission bandwidth and improve link reliability
- Support RSTP spanning tree protocol, compatible with STP protocol, can eliminate network loops, and improve network reliability
- Support WEB control, HTTP and HTTPS protocol access control, login IP address restriction
- Support 802.1X port authentication, authenticate accessed users, and provide local and radius login authentication
- Support centralized management of SNMPv1/v2c/v3 and SNMPv1/v2c/v3 TRAP information
- Support alarm function, including external power, network storm, port disconnection
- Support port statistics, count different types of data frames sent and received, and monitor port traffic
- Support port mirroring and can collect data on port entry and exit for network detection and fault management
- Support system log information recording, downloading, and classification, which can be output to web pages, log hosts and consoles for display

☑☑☑ Specification

Software	
Switching	<p>Support port configuration, rate configuration, storm detection, port trunk, LACP, and port statistics</p> <p>Support 802.1Q VLAN</p> <p>Support MAC address aging and static unicast MAC address binding</p>
Serial Port	<p>Support multiple network working modes such as UDP, UDP Multicast, TCP Client/Server, Modbus RTU Master/Slave, Modbus ASCII Master/Slave, RealCOM_MCP/CCP/MW, Pair Connection Master/Slave, HTTPD Client, WebSocket Client, etc.</p> <p>Support packet length, packet interval, and network connection information</p> <p>Support Modbus slave address mapping, Modbus pre reading, and Modbus Over TCP</p> <p>Support heartbeat packets, registration packets, frame header and footer modes, and RFC2217 functions</p>
CAN	<p>Support network working modes such as UDP, TCP Client/Server, UDP multicast, etc.</p> <p>Support packet frame rate, packet interval, CAN ID filtering, and network connection information</p>
Redundancy	<p>Support MW-RingV1/MW-RingV2 private ring network technology</p> <p>Support ERPS</p> <p>Support RSTP and is compatible with STP</p>
Multicast	<p>Support IGMP Snooping</p> <p>Support static multicast MAC address binding</p>
Safety Management	<p>Support WEB access control</p> <p>Support 802.1X port authentication</p> <p>Support relay alarms and email logs</p>
Management and Maintenance	<p>Support QoS, SNMP v1/v2c/v3, SNMP v1/v2c/v3 TRAP, LLDP</p> <p>Support port mirroring and Ping</p> <p>Support user permission management, system logs, local/network time synchronization, daylight saving time</p> <p>Support online restart, factory reset, system upgrade, and configuration file upload/download</p> <p>Support MW-NMPv2, MixView, MaxView management</p>
Switch Capability	
Processing Type	Store-and-Forward
Backplane Bandwidth	7.6Gbps
Buffer Size	1Mbit
MAC Table Size	8K
Interface	

☑☑☑ Specification

Gigabit Ethernet port	2*Gigabit Ethernet ports, can extend to be 10/100/1000Base-T(X) copper port or 1000Base-X fiber port
100M Ethernet port	8*100M Ethernet ports, can extend to be 10/100Base-T(X) copper port or 100Base-FX fiber port
TTL UART	Quantity: 3 serial ports Port type: 3.3V TTL UART, can be connected to external serial port chip to extend RS232/485 serial port Baud rate: 300bps-460800bps Data bit: 7bit, 8bit Stop bit: 1 bit, 2 bit Check bit: no check, odd check, even check
TTL CAN	Quantity: 2 CAN bus ports Port type: 3.3V TTL CAN port, can be connected to external CAN transceiver chips to extend CAN bus port Baud rate: 5kbps -1000kbps
Alarm	1 alarm output and 2 alarm input
CONSOLE	1 TTL UART for equipment debugging

Power Supply

Input Voltage	DC3.3V(±3%)
Power Consumption	<2.2W@DC3.3V(full load)

Physical Characteristics

Dimensions	75×50×11.6(mm)
Installations	Embedded
Weight	About 42g

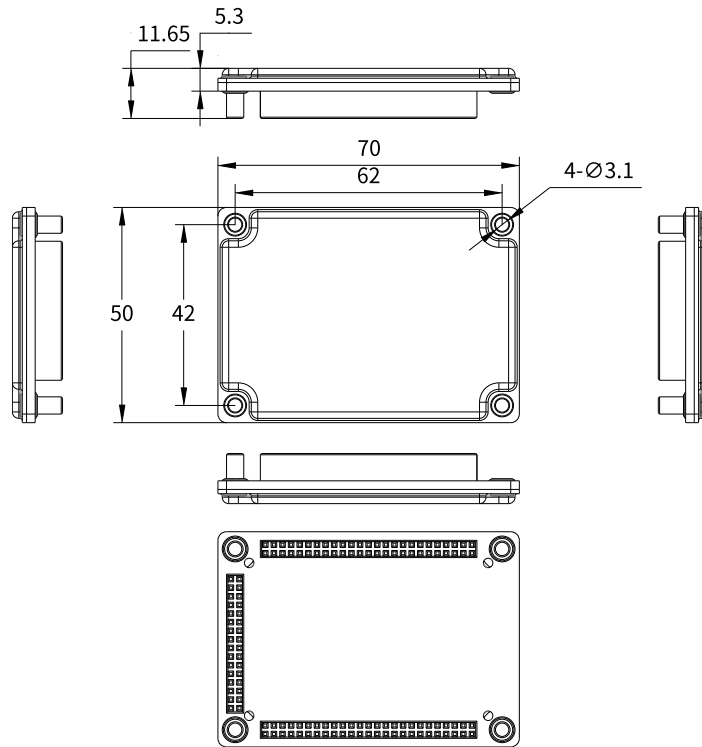
Working Environment

Operating Temp	-40℃~+75℃
Storage Temp	-40℃~+85℃
Relative Humidity	5%~95% (non-condensing)



Dimensions

Unit: mm





Ordering Information

Standard Model	Gigabit port	100M Port	UART	CAN	Input Voltage
ISM7100S-2GF-3D-2C	2	8	3	2	DC3.3V



Contact Us

Wuhan Maiwe Communication Co., Ltd

Address: No.52 Liufang Avenue, East lake High-tech Development Zone, Wuhan, China.

Tel: 027-87170217

Mail: enquiry@maiwe.com

Official site: www.maiwe.com

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