

IEM308-8D

Industrial-Grade Embedded Serial Server Module



- 2×10/100Base Ethernet ports, 8× TTL UART ports
- Support UDP, TCP, Modbus, HTTPD,WebSocket protocols, support virtual com port
- Support Modbus slave read-ahead, single-port auto-learn up to 256 RTU or 128 ASCII commands
- Support Modbus address mapping
- Support MQTT protocol, realize connectivity between cloud and clients via multiple cloud platforms
- Support JSON functions
- Compact design for easy installation, maintenance and PCBA
- 3.3V supply voltage
- -40~85°C industrial working temperature



Product Description

IEM304-8D is an industrial class embedded serial port server module, integrated serial port device networking, Modbus gateway, and other functions. It has 1*10/100Base Ethernet interface and 4 TTL serial ports. It can be embedded mounted to meet the requirements of various industrial buses or network field.

The server module can be managed via WEB and supports various network protocols, such as IP, ARP, UDP, TCP, ICMP, HTTP, Modbus TCP, Modbus RTU / ASCII, HTTPD, WebSocket, RealCOM, RFC2217, DHCP Client, DNS, etc. Its serial port supports various network transmission modes, such as UDP, UDP Multicast, TCP Client / Server, Pair Connection Master / Slave, Modbus TCP / RTU / ASCII, Httpd Client, WebSocket Client, etc. It supports CAN and serial port interface conversion, and virtual serial port function. The system provides user permission management, supporting online restart, upgrade and factory reset. The 4 port embedded server module supports hardware watchdog, and reset, factory settings restore, designed with indicators. It features low power consumption, wide temperature range, compact modular design. The surface mounted female header is easy to easy and maintain, flexible for PCBA

and customize interface connection mode. Developed with industrial components, high performance low power processor, the module can work reliably in multiple harsh environments with $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ wide temperature range. The products can be widely used in industrial automation, comprehensive energy, intelligent transportation, smart city, smart mining and other fields.



Features and Benefits

- Ethernet ports can be configured as two separate network segments or cascaded ports
- Serial port baud rate 300bps-460800bps
- Support UDP Client/ Server /Multicast mode
- Support TCP Client/Server modes, establish sessions via TCP protocol, TCP Client supports up to 16 session connections, TCP Server supports up to 32 session connections, serial port baud rate and other communication parameters can be modified dynamically via RFC2217 instruction
- Support Pair Connection Master/Slave mode
- Support Modbus RTU/ASCII Master/Slave modes to realize conversion from Modbus TCP to Modbus RTU/ASCII
- Support RealCOM_MCP/CCP/MW modes, mapping network to local COM
- Support HTTPD Client mode, GET or POST operations can be performed with HTTPD servers
- Support WebSocket protocol
- Support serial port forwarding, realize transparent data transmission between serial port and other serial ports, provide one-way forwarding/receiving, two-way forwarding direction control
- Support multiple data packaging mechanism to enable time or length based data conversion from serial to Ethernet
- Support serial port data frame filter based on start and end bytes of the frame
- Support registration package and heartbeat package for verification and status check of the link
- Support Modbus virtual ID, mapping Modbus slave real ID to virtual ID for data communication, avoiding slave ID duplication
- Support DES/ 3DES/ AES/ RC2/ RC4/ RC5/ BlowFish and multiple encryption for data security
- Support SSL (TLS1.0/1.1/1.2) encryption, one-way/two-way verification for link security
- Support HTTP/ HTTPS/ SSH/ TELNET access control, and IP/ MAC address filter
- Support alert for reboot, login events, configuration change, password change via email and SNMP
- Support serial port and CAN port communication parameters, working mode, send and receive frame counts
- Support local log storage, network storage and serial port log output
- Support serial port restart, device reboot/upgrade, factory reset, and NTP client



Specification

Software



Specification

Working Mode	<p>Support Modbus RTU Master, Modbus RTU Slave, Modbus ASCII Master, Modbus ASCII Slave, UDP Client, UDP Server, UDP Multicast, TCP Client, TCP Server, RealCOM_MCP, RealCOM_CCP, RealCOM_MW, Pair Connection Master, Pair Connection Slave, HTTPD Client, WebSocket Client, MQTT modes</p> <p>Support serial to serial port data forward</p> <p>Support SSL encryption, data encryption, transparent transmission/JSON transmission</p> <p>Support Modbus slave virtual address, Modbus readahead, Modbus address mapping batch read/write</p> <p>Support Keepalive, heartbeat package, registration package, head and tail of a</p>
Secure Management	<p>Support password setting</p> <p>Support WEB/ SSH/ TELNET/ HTTPS access control</p> <p>Support IP/ MAC address filter</p> <p>Support alert via Email and SNMP</p> <p>Support certificate upload</p>
System Management	<p>Support device information, serial port information statistics</p> <p>Support independent segment or cascade mode, static address/DHCP</p> <p>Local sys log, remote log, export log via Serial Port</p> <p>Support SNMPv1/v2c/v3</p> <p>Support serial port restart, connection reset after idle for some time</p> <p>Online reboot, upgrade and factory reset</p> <p>Support NTP</p>
Interface	
Ethernet	2×10/100Base-T(X) auto-sensing Ethernet pin, full/half duplex, auto MDI/MDI-X connection, 1.5 kV isolation protection, built-in Ethernet transformer
TTL	<p>Number: 8</p> <p>Type: 3.3V TTL UART (use an external serial port chip to get the extra RS232/485/422 COM port you need)</p> <p>Baud rate: 300bps-460800bps</p> <p>Data bit: 7bit, 8bit</p> <p>Stop bit: 1bit, 2bit</p> <p>Parity bit: None, Odd, Even</p>
CONSOLE	RS232 signal for debugging and command line configuration
Status LEDs	Support the RUN, Ethernet port Link/ACT, Ethernet port Speed, serial port indicator pins
Power Supply	
Input Voltage	DC 3.3V±3%
Power Consumption	< 1W@DC3.3V(full load)



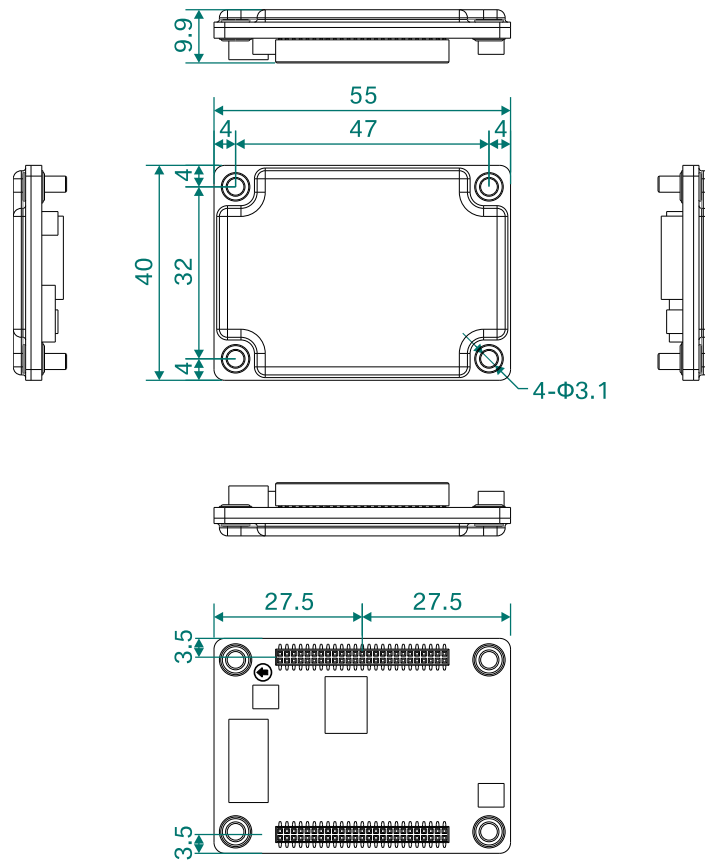
Specification

Connection	2×1.27mm pitch 2*25P surface mounted female header (pins included)
Physical Characteristic	
Dimensions	55×40×9.9 mm
Installations	Embedded mounted
Weight	25g
Working Environment	
Operating Temp	-40°C~+85°C
Storage Temp	-40°C~+85°C
Relative Humidity	5%~95% (non-condensing)
Industry Standard	
Certification	CE, FCC, RoHS



Dimensions

Unit: mm





Ordering Information

Standard Model	10/100M Ethernet Port	TTL UART Port	Input Voltage
IEM308-8D	2	8	DC 3.3V±3%



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