16CH-RS485 /422-ETH(VI)

16× Isolated RS485/422 Ports to 2×1G Fiber/Copper Ports Rack Mount Serial Server

- 16 × isolated RS485/422 ports to 2 × 1G fiber/copper combo ports
- Support UDP, TCP, Modbus, HTTPD, WebSocket, MQTT, DDP/DC, and virtual serial port
- Modbus RTU/ASCII to Modbus TCP protocol conversion, support Modbus RTU/ASCII over TCP transparent transmission
- Support the standard MQTT protocol and can connect to Alibaba Cloud, OneNet, Tencent Cloud, Huawei Cloud, and other cloud platforms
- AC85~264V/DC110~370V power input
- High-strength metal shell, IP40-rated housing protection
- Fanless enclosure heat dissipation, −40°C ~ +70°C working temperature range



Product Description

16CH-RS485/422-ETH(VI) is a rack-mount Serial-to-Ethernet server with enhanced isolation, powered by a high-performance 32-bit ARM Cortex-A8 processor at 800 MHz. It features an external hardware watchdog and industrial-grade ESD, Surge, and EFT protection on the power supply, Ethernet interfaces, and serial ports, ensuring reliable operation in harsh environments.

This serial server provides 16 × independent RS485/422 serial ports, each configurable with different operating modes and baud rates from 600 bps to 460800 bps. It also offers 2 × 1G Ethernet ports, supporting both copper and SFP fiber options. With a built-in TCP/IP protocol stack, **16CH-RS485/422-ETH(VI)** enables traditional RS485/422 devices to connect to Ethernet easily and securely.

This industrial serial server from **Valtoris** supports web-based configuration and a comprehensive set of network management functions, including serial/network operation modes, serial forwarding, NIC mode, DNS, access control, IP/MAC filtering, log management, email alarms, SNMP alarms, serial port restart, and system management.

It supports a wide range of communication modes such as UDP Client/Server/Multicast, TCP Client/Server, Modbus RTU/ASCII Master-Slave, Modbus TCP, RealCOM_MCP/CCP/MW, Pair Connection Master-Slave, HTTP Client, WebSocket Client, MQTT, and DDP/DC, enabling flexible Serial-to-Ethernet and Modbus TCP conversions.

Designed with industrial-grade components, **16CH-RS485/422-ETH(VI)** provides wide-voltage and wide-temperature operation, lightning protection, strong EMC immunity, high reliability, and stable performance, making it well-suited for long-term operation in demanding industrial IoT scenarios.

Product Features

- Adopt a 32-bit ARM Cortex-A8 processor running at up to 800 MHz
- Provide 2 × Gigabit Ethernet combo ports supporting copper or SFP fiber, configurable as two independent network segments or cascading ports
- Support selectable baud rates from 600 bps to 460800 bps
- Support UDP Client, UDP Server, and UDP Multicast modes for point-to-point, point-to-multipoint, or multipoint-to-multipoint fast communication
- Support TCP Client and TCP Server modes with up to 8 simultaneous connections for each mode, and support RFC2217 for dynamic modification of serial parameters
- Support Pair Connection Master/Slave mode, enabling paired operation with simple configuration
- Support Modbus RTU/ASCII Master/Slave and bidirectional conversion between Modbus TCP and Modbus RTU/ASCII
- Support Modbus slave readahead, with automatic learning of up to 32 RTU or 16 ASCII commands per port for fast response
- Support RealCOM_MCP/CCP/MW modes for mapping network ports to local virtual COM ports
- Support HTTPD Client mode to perform GET and POST communication with HTTP servers
- Support WebSocket Client mode for bidirectional communication with WebSocket servers
- Support DDP/DC mode to encapsulate serial data into DDP/DC protocol for communication with DDP/DC servers
- Support multiple serial data framing mechanisms based on length or time to convert serial data into Ethernet packets for various real-time requirements
- Support registration packets and heartbeat packets for connection authentication and link status detection
- Support Modbus Virtual ID to map real slave IDs to virtual IDs and avoid ID conflicts
- Support web and SSH access control with IP and MAC address filtering
- Support event alarms for device reboot, login events, configuration changes, and password updates, with email and SNMP alarm reporting
- Support statistics for serial communication parameters, operating modes, and transmitted/received frame counts
- Support local log storage, network log storage, USB log backup, and serial log output

Technical Specifications

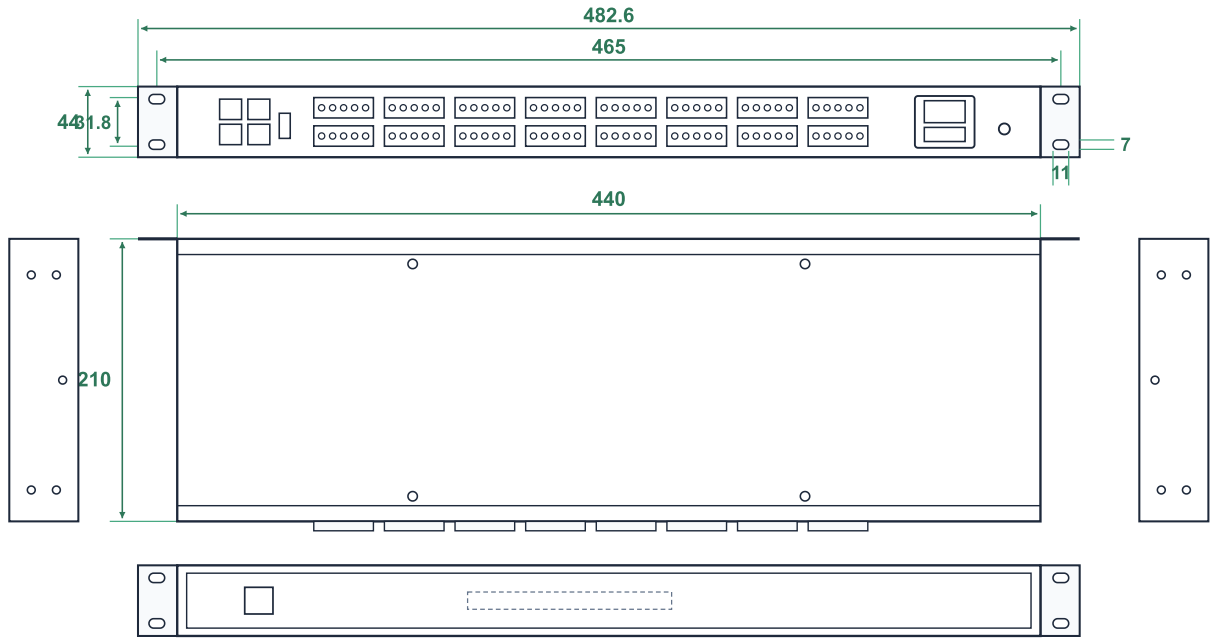
Parameter	Description
Software	
Network Protocol	IP, TCP/UDP, ARP, ICMP, DHCP Client, DNS, HTTP, RFC2217, NTP, TELNET, SNMP, TFTP
IP Obtaining Method	Static IP/DHCP
DNS	Support
User Configuration	Web-based configuration and basic network parameter configuration via CONSOLE port
Simple Transparent Transmission	UDP Client, UDP Server, UDP Multicast, TCP Client, TCP Server, RealCOM, Pair Connection
Modbus	Modbus RTU/ASCII to Modbus TCP
Serial Port Packaging Mechanism	Support flexible serial data framing, adjustable by packet length or time interval, with a maximum packet length of 1460 bytes
TCP Server Connection	A single serial port supports up to 8 simultaneous TCP Client connections.
Network Buffer	Transmit: 16 Kbytes, Receive: 16 Kbytes
Serial Buffer	Transmit: 2 Kbytes, Receive: 2 Kbytes
Heartbeat Package	Support TCP Keep-alive mechanism, customize heartbeat packet content
Registration Package	Support customizable registration packet content.
RFC2217	Support
HTTPD Client	Support
WebSocket Client	Support
MQTT	Support Alibaba Cloud MQTT and other standard MQTT cloud platforms, including OneNet Multi-Protocol, OneNet IoT Suite, Huawei Cloud, and Tencent Cloud
RealCOM	Support
Data Encryption	Support DES, 3DES, AES, RC2, RC4, RC5, Blowfish and multiple padding modes, using the OpenSSL-1.1.1q encryption library
SSL Encryption	Support TLS 1.0, TLS 1.1, TLS 1.2
Serial Forwarding	Support disable, bidirectional forwarding, unidirectional forwarding, and unidirectional receive
DDP/DC	Support
Transmission Delay	<10ms

Parameter	Description
Supporting Software	Network management configuration tool and virtual COM software
Interface	
Gigabit Ethernet Port	2 × 10/100/1000 Base-T(X) auto-sensing RJ45 copper ports or 1000 Base-X SFP ports optional. The copper ports support full/half duplex and auto MDI/MDI-X. The SFP ports support 100/1000 Mbps.
Serial Port	Port type: 16 × RS485/422 Connection: 5-pin 5.08 mm pitch terminal block Baud rate: 600~460800 bps Data bits: 5, 6, 7, 8 Stop bits: 1, 2 Parity: None, Odd, Even, Mark, Space Isolation voltage: 2 kVAC/3 kVDC
USB	1 × Type-A USB 2.0 port, for log storage
CONSOLE	1 × RJ45 port, RS232 signal, used for device debugging and command line configuration
Button	One-click restart, factory reset
Status LEDs	Power supply indicator, running indicator, alarm, Ethernet port indicator, serial port indicator
Power Supply	
Input Voltage	AC85~264V / DC110~370V
Power Consumption	<6.5W@AC220V
Connection	AC socket with switch (three-pin type)
Physical Characteristic	
Dimensions	482.6 × 44 × 210 mm (including mounting brackets, excluding connectors)
Installations	19 inch 1U rack mount installation
IP Code	IP40
Working Environment	
Operating Temp	−40°C ~ +70°C
Storage Temp	−40°C ~ +85°C
Relative Humidity	5%~95% (non-condensing)
Industrial Standard	

Parameter	Description
EMC	IEC 61000-4-2 (ESD): Level 4 (contact discharge ±8kV, air discharge ±15kV) IEC 61000-4-5 (Surge): Level 3 (Power supply: common mode ±2kV, differential mode ±2kV; RS485: common mode ±4kV, differential mode ±4kV; Ethernet port: common mode ±6kV, differential mode ±2kV) IEC 61000-4-4 (EFT): Level 4 (power supply: ±4kV; Ethernet port, serial port: ±2kV)
Certification	CE, FCC, RoHS

Dimensions

Unit: mm (482.6 × 44 × 210 mm including mounting brackets)



Ordering Information

Standard Model	1G Fiber/Copper Combo Port	RS485/422	Input Voltage
16CH-RS485/422-ETH(VI)	2	16	AC85~264V / DC110~370V

Contact Us

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