19-Inch Rackmount 32-Port Serial Server

Model: FCT-1700-G1C1S32

32 serial ports · dual IP / dual MAC
Electrical/optical combo · MQTT / JSON · OLED display



Product Overview

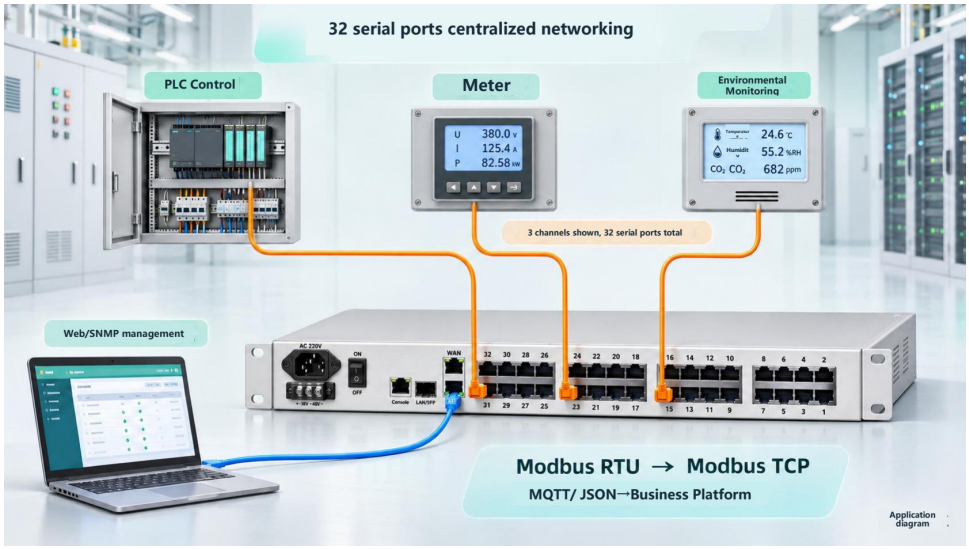
- 19-inch rack-mounted serial networking devices for server rooms and control centers transmit 32 RS-232 / RS-422 / RS-485 channels over Ethernet, suitable for PLC control, building automation, healthcare automation, measuring instruments, and environmental power monitoring.RS-485 has independent shielded lines per channel, 2.5 kV electrical isolation between grounds, reducing ground potential difference interference and limiting fault propagation.
- The OpenWrt platform uses a heterogeneous Cortex-A35 and Cortex-M4 processor. The 2 independent network interfaces have separate IP and MAC addresses. One is a shared copper/fiber combo interface for multiple networks or network failover.
- Supports Socket, virtual serial port, Modbus RTU to TCP, and MQTT / JSON integration. No fan, low power consumption, wide temperature and pressure range design, passed strict industry standard tests, suitable for industrial environments with strict EMC requirements.

Key Features

- **Device Aggregation** 32 serial ports with independent networking, up to 4 TCP / UDP sessions per port
- **High-speed serial port** RS-232: up to 256 kbps; RS-485/422: up to 1.5 Mbps.
- **Platform Integration** MQTT multi-topic publish/subscribe, Modbus to JSON, scheduled reporting
- On-site selection of fixed formats and hybrid options; three-in-one mode selectable per port via Web
- **Easy Maintenance** OLED display IP and serial port types; Web / SNMP and remote upgrade.
- **Flexible Power Supply** AC220V, DC-48V, DC24V options; supports dual power supply backup
- **Port Surge Protection** Power supply/serial port 6 kV; network port 4 kV; isolation 2.5 kV per serial port.

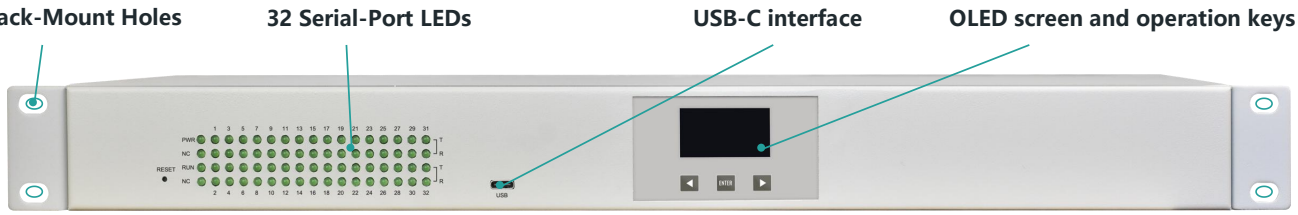
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Typical application: Centralized serial device networking

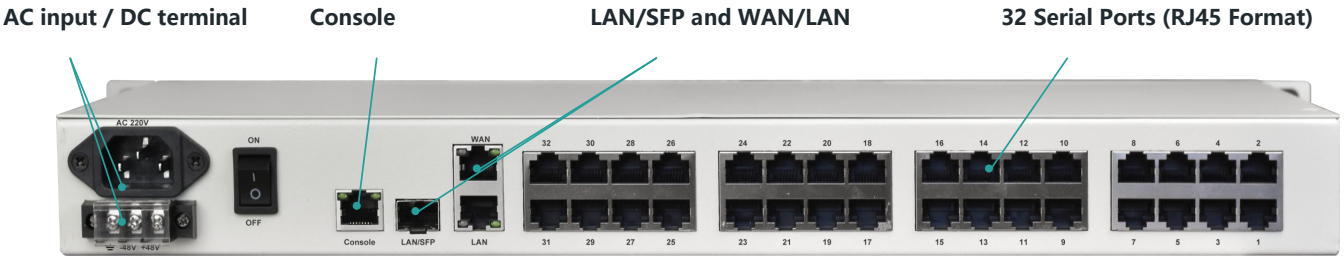


Indicated as 3 terminal connections, total 32 serial ports; when multiple sessions access the same terminal, please coordinate with the upper-level system

Interfaces and Installation



Front: PWR / RUN, RESET, and serial port indicators; OLED displays IP address and serial port type

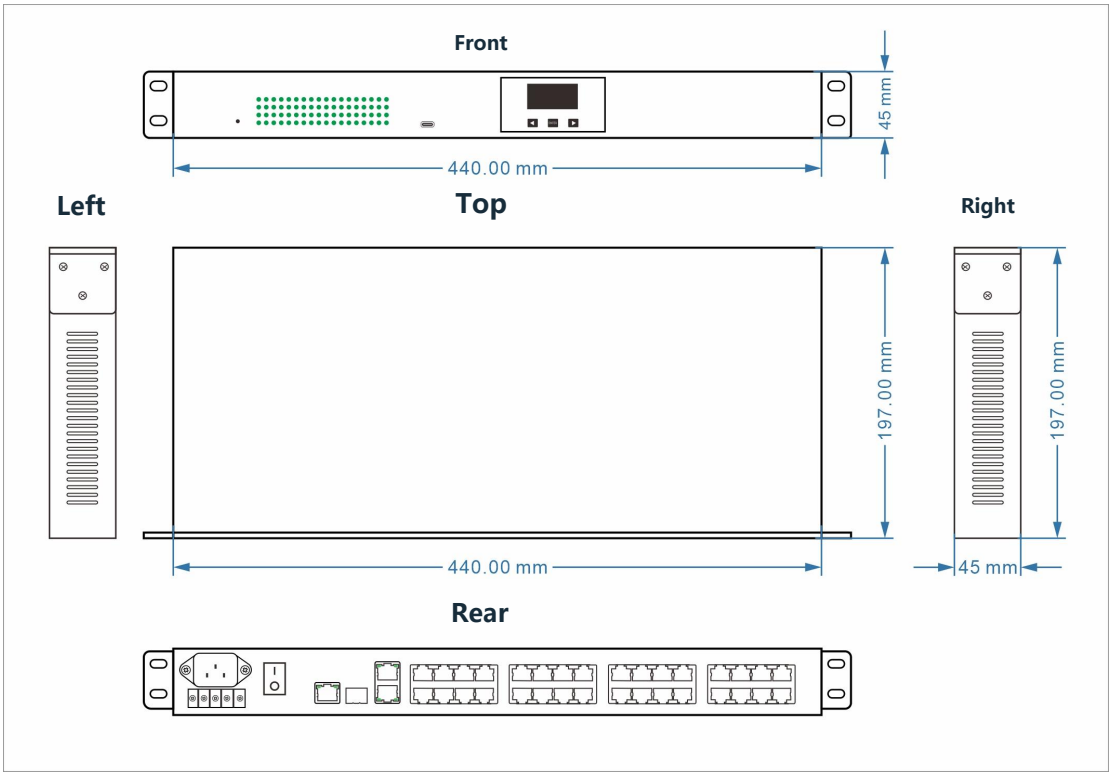


The power supply photo shows the AC + DC appearance; actual input depends on order configuration.

2 independent networks: WAN copper port + LAN copper/copper fiber combo; LAN copper port and fiber port multiplexed

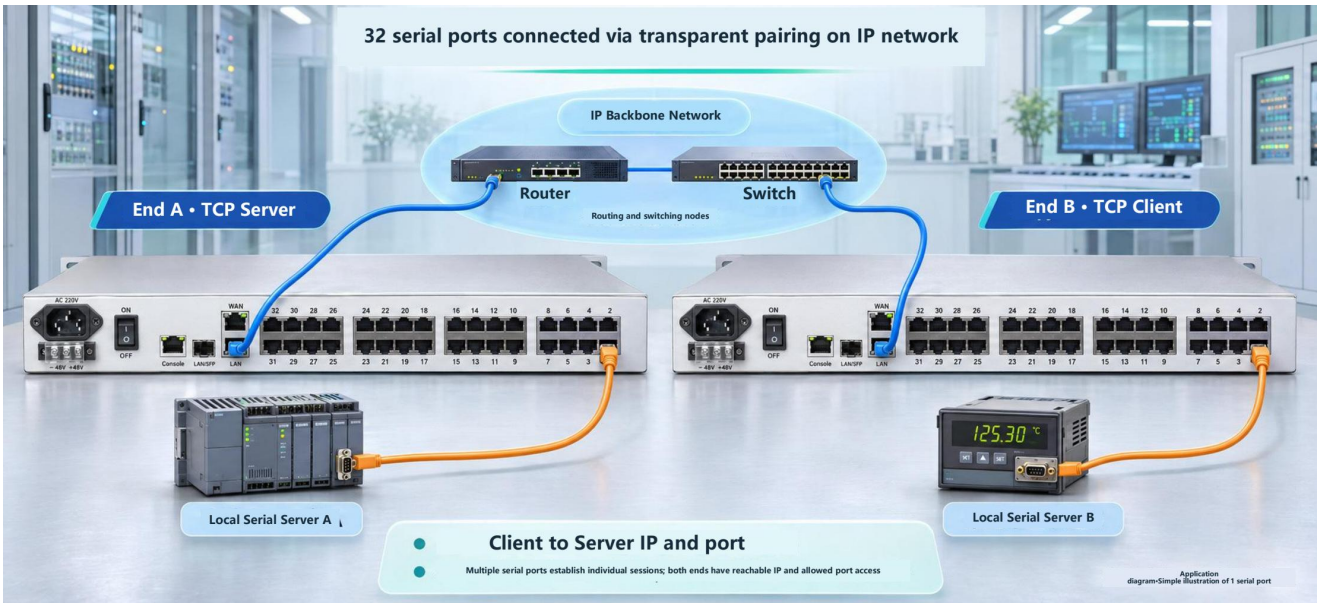
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Dimensions and Mounting



Physical dimensions: 440 × 197 × 45 mm (width × depth × height per engineering drawing); 19-inch 1U rack format.

Serial device connected via transparent IP network



IP addresses and corresponding ports for Client-to-Server connection; multiple serial ports establish separate sessions per channel. Both ends must be connected to local serial devices, and the network must meet routing accessibility and port access requirements.

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Technical Specifications

Hardware and Electrical

Item	Specification and Conditions
Processor	dual-core Cortex-A35 + Cortex-M4 heterogeneous processor
Operating System	OpenWrt
Network Interface	2 × 10/100/1000Base-T RJ45; 1 × Gbps optical interface, combined with 1 copper Ethernet port; dual IP, dual MAC.
Ethernet standard	IEEE 802.3ab、IEEE 802.3z; Full/half-duplex auto-negotiation, MDI/MDIX
MAC address table	Can learn 4096 MAC addresses
Fiber port configuration	1 fiber port; single fiber / dual fibers Optional SC / FC / ST / LC (SFP)
Fiber wavelength	Multi-mode 850 / 1310 nm; Single mode 1310 / 1550 nm
Fiber optic transmission	No relay, 0～80 km, depending on optical module and link configuration; typical transmission power (single mode) 100 μW～0.93 mW
Number of serial ports / Standard	32 RS-232 / RS-422 / RS-485 channels; one standard fixed at factory, or selectable via Web for each channel in a three-in-one configuration.
Serial port speed	RS-232：300 bps～256 kbps; RS-485/422：300 bps～1.5 Mbps; Supports non-blocking line-speed communication
Serial port standard	EIA/TIA-232，ITU-T V.28; EIA/TIA-422，ITU-T V.11; EIA/TIA-485，ISO/IEC8284
Maintenance / Display	1 Console, 1 USB-C; OLED display for IP address and serial port type
Power Supply Selection	AC220V / DC-48V / DC24V; Supports dual power sources: AC＋DC, AC＋AC, DC＋DC
Structure / Weight	19-inch 1U rack format; fanless, low power consumption; Physical size: 440 × 197 × 45 mm; Weight: 1.9 kg/unit
Operating / Storage temperature	All operating within −40 ℃ to +85 ℃
Humidity / reliability	Working humidity: 0%–95% (no condensation); MTBF ＞100,000 hours

Communications and Management

Item	Specifications & Features
Network Protocol	TCP、UDP、ARP、ICMP、HTTP、DNS、DHCP、SNMP、Telnet、SSH、MQTT
Operating Mode	Modbus TCP, TCP Server, TCP Client, UDP Server, UDP Client, Modbus to MQTT
Modbus Conversion	Modbus RTU to Modbus TCP Read serial device data via network
MQTT / JSON	Multi-topic subscription and publishing; MQTT transparent transmission, Modbus to JSON; JSON issued by parsing server, supports scheduled reporting
Cloud platform connection	Supports MQTT protocol integration with platforms such as Huawei Cloud, Alibaba Cloud, and Mobile Cloud
Encrypted transmission	Supports encryption of serial data using SSL security protocols
Session Access	Up to 4 TCP / UDP sessions per channel; Standard TCP/IP Socket access; TCP supports monitoring or management by up to 4 users.
UDP communication	Supports single-machine or multi-machine communication to meet simultaneous monitoring or management needs of multiple users
Network and Recovery	Supports over gateways and across routes; virtual serial port driving; automatic connection restoration after network interruption.
Framing and monitoring	Flexible configuration of serial data framing; Supports monitoring of serial port status and parameters
Configuration and Maintenance	Windows configuration tools, SSH, Telnet, Web, SNMP; access control, quick configuration, online upgrade; local and remote system firmware upgrade.
Deployment Conditions	The cross-routing requires IP accessibility and must comply with the access policy. Multiple users require coordination via upper-level system request
RS-232 signal	RXD、TXD、GND
Four-wire Serial Port	RS-422 / RS-485: TxD＋、TxD－、RxD＋、RxD－、GND
RS-485 two-wire	A (corresponding to TX＋), B (corresponding to TX－), GND

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Port Protection and Channel Isolation

Protection for power, serial ports, and network ports reduces the risk of transient overvoltages caused by lightning induction and switch operations entering and damaging the interfaces via cables; each serial port provides 2.5 kV isolation.

Interface / Test	Rating / Test Conditions	Protection Notes
Power Interface	Open-circuit peak voltage = 6 kV (open-circuit peak voltage)	Surge protection to reduce the risk of transient overvoltage from power lines.
All serial ports	Open-circuit peak voltage = 6 kV (open-circuit peak voltage)	Surge protection and isolation; 2.5 kV isolation for each serial port
RJ45 Ethernet interface	4 kV (open-circuit peak voltage)	Reduces the risk of lightning-induced surges and switch operation surges transmitted via network cables.
Serial port optical isolation	2.5 kV per channel	Each serial port provides optical isolation.
RS-485 separate ground	2.5 kV electrical isolation	Each RS-485 line has independent shielding and grounding; grounds of different lines are isolated from each other.
AC connection isolation	AC220V / AC380V	When a serial port is directly connected to the above voltage, other serial port devices on the isolation side will not be damaged; non-serial port normal operating input voltage.

Test Standards for Surge Protection:GB/T 17626.5 (IEC 61000-4-5) surge immunity test;**Open-circuit voltage waveform:**10/700 μs; **Test source impedance:**40 Ω。

Surge test voltage is not the continuous operating input voltage, and does not indicate resistance to direct lightning; grounding and wiring still need to be completed according to engineering requirements on-site.

Ordering Information

Model composition: FCT (Flying Smooth product prefix) — 1700 (series code) — G1 (1 Gigabit copper port) — C1 (1 copper/fiber combo port) — S32 (32 selectable 3-in-1 serial ports); configuration options are defined item by item according to the order.

NO	Name	Definition / Ordering Notes
1	Base model	FCT-1700-G1C1S32 is the basic model of this device, indicating a 32-channel serial device server; serial, optical link, and power configurations must be specified item by item in the order.
2	Serial port configuration	D = RS-485, R = RS-232, X = RS-422, and S = selectable 3-in-1. The number after each code gives the port count, up to 32 ports in total. Fixed interfaces can be mixed. Set each 3-in-1 port in the web UI.
3	Ethernet / fiber port	2 independent networks (one of which is electrical/optical combo); the fiber port must specify the speed, single/multi-mode, single/double-fiber, interface, wavelength, and distance.
4	Power Supply Configuration	AC220V, DC-48V, DC24V; single power supply or AC + DC / AC + AC / DC + DC dual power supplies.
5	Complete order example	FCT-1700-G1C1S32: 32 selectable 3-in-1 serial ports, 2 independent network interfaces including 1 copper/fiber combo port, and dual 220 VAC / −48 VDC power inputs. Confirm the fiber interface and link specifications when ordering.

Please confirm the serial port format, optical link configuration, power supply combination, and supporting cables during ordering. The serial ports use RJ45 interfaces, and wiring follows the defined format; they are not connected as Ethernet ports.

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