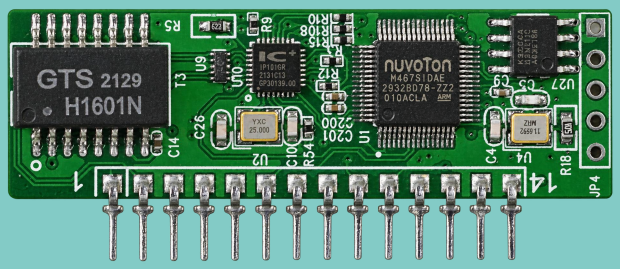
Industrial Single-Port TTL Serial Server Module

Model: FCT-1000-F1T1

1-channel TTL · 1-channel Fast Ethernet
Supports MQTT · Power supply: DC 3.3 V
Network port with 4 kV surge protection · TTL has ESD protection only



Product Overview

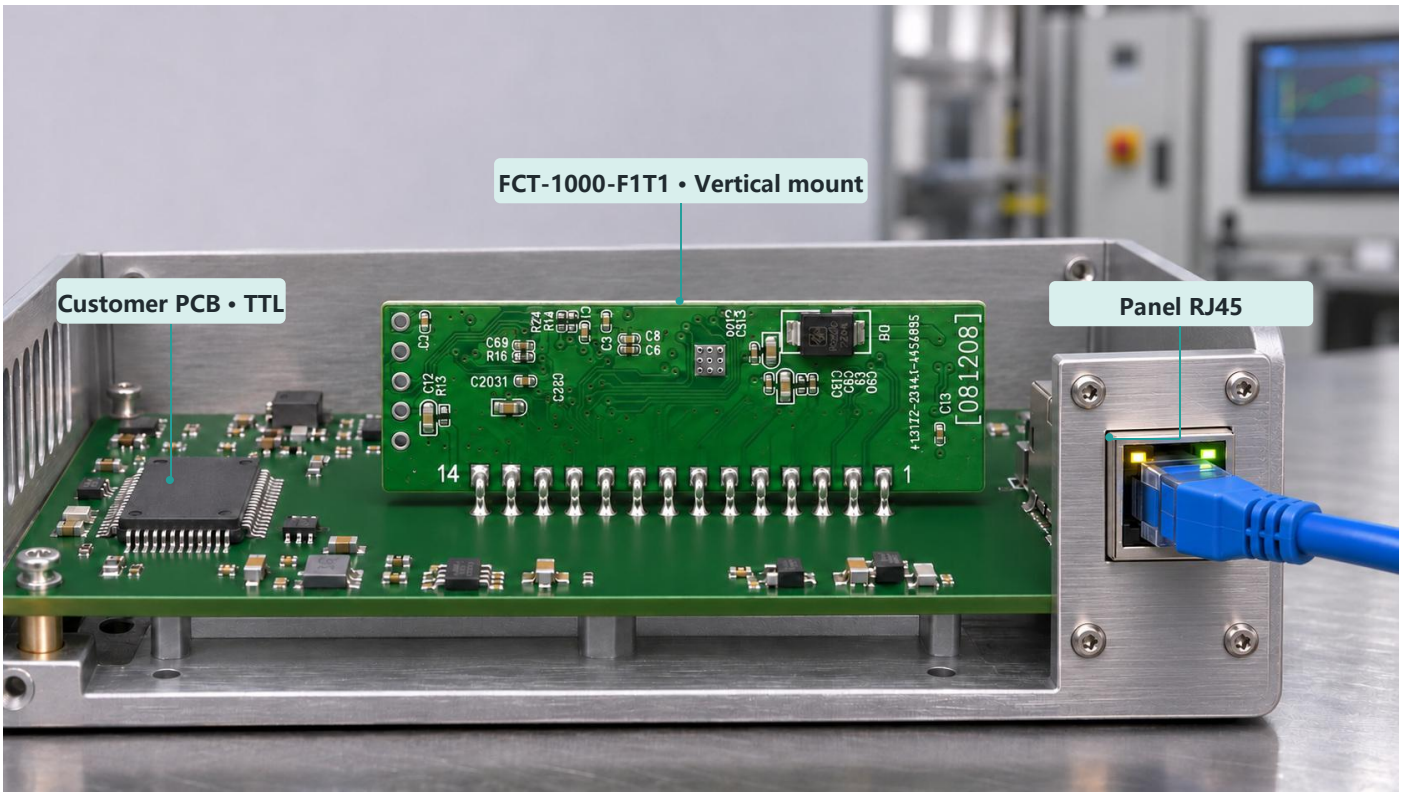
- Connect 1 host-board TTL serial port to Fast Ethernet. Access embedded controllers over the network or connect to MQTT platforms.
- 14-pin single-row header, 2.54 mm pitch; DC 3.3 V supply. Integrates into control boards or a matching carrier board.
- RS-232/422/485 devices require an external level-conversion circuit and selection of the matching interface in Web settings.

Key Features

- **Platforms** Supports transparent transmission via MQTT, serial port, and Modbus RTU to Modbus TCP.
- **Concurrency** A single serial port supports up to 4 TCP or UDP sessions.
- **Configuration** Supports Web, Telnet, Windows tools, and SNMP; supports local and remote upgrades.
- **Protection** Ethernet port provides common-mode 4 kV surge protection; TTL interface provides only ESD protection.

Address: 7F, Building 2, NO.9 XiYuan 2nd Road, West Lake Technology Park, Hangzhou, China.
Website: www.fctele.com Email: service@fctele.com Tel.: +86 18966484617

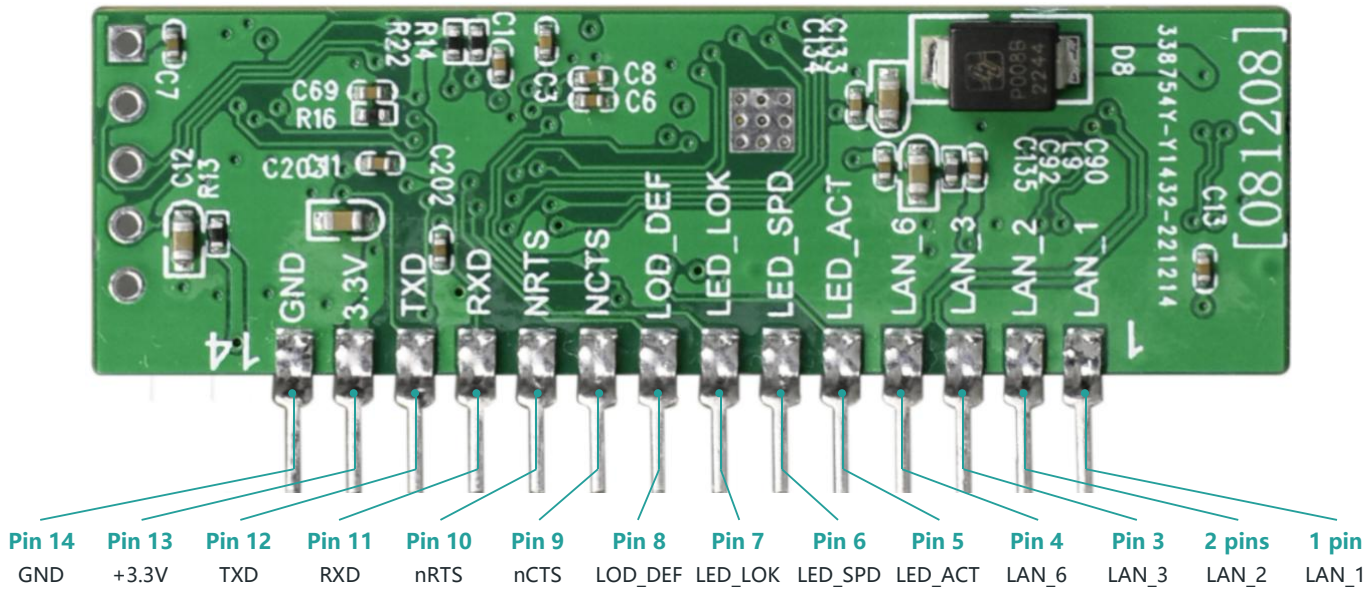
Typical application: Embedded networking for industrial control boards



Application diagram. The module is vertically soldered to the customer’ s PCB using a 14-pin header. LAN_1/2/3/6 is directly connected to pins 1/2/3/6 of the onboard RJ45 via PCB traces, and the network cable is inserted from outside the panel.
TTL cross-connection: Module TXD (pin 12) → customer RXD, customer TXD → module RXD (pin 11). Both GND are grounded together, with DC 3.3 V provided by the customer’ s PCB.

Interfaces and Installation

Back of the module • Labeled one by one for 14 pins

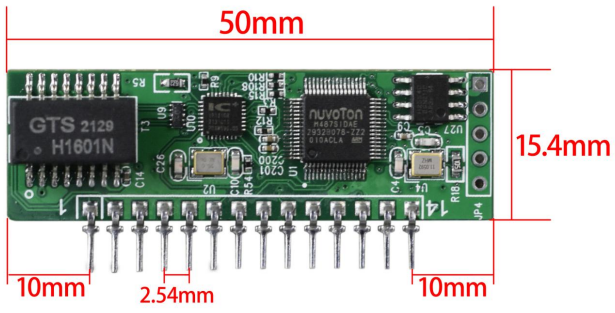


Pin 14	Pin 13	Pin 12	Pin 11	Pin 10	Pin 9	Pin 8	Pin 7	Pin 6	Pin 5	Pin 4	Pin 3	2 pins	1 pin
GND	+3.3V	TXD	RXD	nRTS	nCTS	LOD_DEF	LED_LOK	LED_SPD	LED_ACT	LAN_6	LAN_3	LAN_2	LAN_1

From left to right in the back view: 14 pins to 1 pin. For specific functions and connections, refer to the pin definition.

Address: 7F, Building 2, NO.9 XiYuan 2nd Road, West Lake Technology Park, Hangzhou, China.
Website: www.fctele.com Email: service@fctele.com Tel.: +86 18966484617

Dimensions



Height: 10.2 mm

Module size: 50 × 15.4 × 10.2 mm, pin pitch: 2.54 mm. Please verify the board pad locations with the physical device.

Pin definition

Pin number	Name	Function and connection	Pin number	Name	Function and connection
1	LAN_1	Connects to pin 1 of the RJ45 board.	8	LOD_DEF	Low voltage during power-on enables module factory parameters recovery.
2	LAN_2	Pin 2 of the backplane RJ45 connector.	9	nCTS	TTL handshake signal for external RS-232/RS-485 flow control.
3	LAN_3	Pin 3 of the backplane RJ45 connector.	10	nRTS	TTL handshake signal for external RS-232 flow control.
4	LAN_6	Pin 6 of the backplane RJ45 connector.	11	RXD	TTL data reception input.
5	LED_ACT	Link/activity indicator. Always on when the link is established, blinking when data is present.	12	TXD	TTL data transmission output.
6	LED_SPD	Rate indicator. Lit at 100 Mb/s, off at 10 Mb/s.	13	+3.3V	Power supply: DC 3.3 V, rated current of at least 400 mA.
7	LED_LOK	Lights up after TCP or UDP serial session establishment.	14	GND	Power supply and signal reference ground.

Technical Specifications

Item	Specifications and Instructions
Processor	ARM Cortex-M4, main frequency 240 MHz.
Ethernet	1-channel IEEE 802.3 Ethernet, 10BASE-T/100BASE-TX, 10/100 Mb/s adaptive. Auto-negotiation full/half-duplex, Auto MDI/MDIX, 4096 MAC address entries. Modules connect to the backplane RJ45 via a header pin.
TTL serial port	1-channel, signals: RXD, TXD, GND, nCTS, nRTS. Rate: 300 bps–921.6 kbps. Supports line-rate non-blocking communication, automatic baud rate scanning matching, custom baud rate, and flexible framing.
Agreement and Operation Mode	TCP, UDP, ARP, ICMP, HTTP, DNS, DHCP, SNMP and MQTT. TCP Server/Client, UDP Server/Client, Modbus TCP, and Modbus RTU-to-Modbus TCP conversion.
Session and Deployment	Up to 4 TCP or UDP sessions. Supports standard TCP/IP Sockets, UDP single-machine or multi-machine communication, virtual serial ports, cross-gateway and routing communication, and automatic reconnection after network loss.
Configuration and Management	Supports access control, quick configuration, serial port status and parameter monitoring, Web, Telnet, Windows tools, and SNMP management. Supports local and remote firmware updates.

Address: 7F, Building 2, NO.9 XiYuan 2nd Road, West Lake Technology Park, Hangzhou, China.
Website: www.fctele.com Email: service@fctele.com Tel.: +86 18966484617

Item	Specifications and Instructions
Power Supply and Structure	DC 3.3 V, total current <400 mA. 14-pin single-row pins, spacing 2.54 mm.
Environment and Reliability	Operating/storage −40 to +85 °C; humidity 0–95% RH, non-condensing. MTBF >100,000 h; every module undergoes factory burn-in testing.

Interface Protection

Interface	Protection Criteria	Description
Ethernet port	Common mode 4 kV	Three-level surge protection.
TTL serial port	ESD protection	Only electrostatic discharge protection provided.

Surge test criteria for network port ITU-T K.21 **Open-Circuit Voltage Waveform** 10/700 μs **Test Source Impedance** 40 Ω

Ordering Information

Model segmentation: FCT - 1000 - F1 - T1

Model segment	Definition
FCT / 1000	Product prefix and series code.
F1	1-line Fast Ethernet interface.
T1	1 TTL serial port.

Full Ordering Code

Full Model Code	Configuration
FCT-1000-F1T1	Module converting 1-channel TTL serial port to 1-channel Fast Ethernet, supports MQTT, DC 3.3 V power supply.

Document version: V1.5 EN Revision date: 2026-11-15

Address: 7F, Building 2, NO.9 XiYuan 2nd Road, West Lake Technology Park, Hangzhou, China.
Website: www.fctele.com Email: service@fctele.com Tel.: +86 18966484617