



Features:

- supports telecom 3G card;
- supports Unicom 4G, 3G, 2G, mobile 4G, 3G, 2G and telecom 4G network
- Provide an Ethernet port, can be used as a 3G router, 3G / 4G and Ethernet communication are optional.
- Realize RS232 / 485 to 3G / 4G, Ethernet.
- supports P2P function, without dynamic domain name, port mapping, easy to use.
- supports Modbus gateway function to realize Modbus TCP to RTU conversion.
- supports multi-host monitoring, and multiple hosts do not interfere with each other when monitoring.

◆ Description:

ITT-SC4781 is the 3G / 4G networking solution launched by Ittelecom after ITT-SC4780. It contains 4 seed models, namely ITT-SC4781 which supports telecommunication card 3G model, ITT-SC4781 which supports Modbus TCP gateway function, ITT-SC4781 which supports mobile Unicom 3G / 4G model ITT-SC4781 and P2P function.

ITT-SC4781 has RS232 / 485 interface, and can send the data collected by RS232 / 485 to the cloud server through 3G / 4G. Users who combine Ittelecom's P2P technology can collect data from the device anytime and anywhere without even building a server. The collection method can also use a virtual serial port. If it is ITT-SC4781, you can also convert the Modbus TCP protocol to Modbus RTU. The user directly uses Modbus TCP to collect data from the RTU device on the computer. ITT-SC4781 is the most powerful P2P Modbus gateways for telecom cards and mobile / unicom cards respectively, which are very suitable for PLC monitoring and field data collection.

The ITT-SC4781 also has an Ethernet port, which can communicate through the network port when there is an Ethernet, saving 3G / 4G traffic. In addition, ITT-SC4781 can also be used as a 3G / 4G router to achieve network port to 3G / 4G.

ITT-SC4781 can be applied to: PLC remote monitoring; industrial remote control, remote sensing, telemetry and public utilities; meteorological data collection; three defenses and hydrological monitoring; finance, vehicle and other industries. The applications of various sub-models are introduced below.

1. Ordinary 3G / 4G DTU

Ordinary 3G / 4G DTU can be used as a TCP Server to be connected by other network devices. Since the IP of ITT-SC4781 in 3G / 4G mode is not fixed, it is generally not used as a TCP Server. More often, it is used as a TCP Client to connect to a Fix the IP (or domain name) server and send the data collected by yourself. The software on the server can request data by



means of rotation training. The RS485 / RS232 of ITT-SC4781 can be connected to the serial device and PLC that need to be collected, send the necessary instructions to the PLC, and upload the returned data to the server.

In this way, the destination IP of ITT-SC4781 must be set to the server's IP, which means that the user must rent a server with a public IP. But for some application users may not have a public network server, because users dial-up Internet access through the router, you must set up "port mapping" and "dynamic domain name" on the router to send ITT-SC4781 data to the server. "Port mapping" and "dynamic domain name" have the following problems: (1) Some routers are standard for telecommunications and cannot be logged in, so some settings cannot be made. (2) "Port mapping" may be too specialized for ordinary users, and the setting is troublesome. (3) The free solution of "Dynamic Domain Name" may have stability and real-time problems. Of course, for users with public network IP servers, the ordinary ITT-SC4781 is also very convenient to use.

2. Multi-host and Modbus gateway

The application model is ITT-SC4781. In addition to the functions of the above common models, these two models have the following two functions: (1) Can be configured as a Modbus gateway. As long as the device / advanced parameters / conversion protocol is set to "Modbus TCP to RTU", it will switch to Modbus gateway mode. The host computer can use Modbus TCP query, while the PLC can use RTU instructions. The Modbus of ITT-SC4781 is a storage Modbus gateway, and the rotation training is more real-time. (2) Multiple hosts. When set as a Modbus gateway, multiple hosts can be queried, and ITT-SC4781 will answer separately to realize multi-host queries; in non-Modbus gateway mode, for the ITT-SC4781 model, as long as more advanced options are checked, "multi-host" support can also be achieved Multi-master query scheduling.

Ittelecom's multi-host technology is a technology developed for multiple machines to monitor one device at the same time. In an ordinary serial server or DTU, when there are two monitoring computers A and B, both A and B can send data to the device, but the data received by the device from the serial port will be sent to A and B at the same time. That is to say, when A and the device communicate, B will receive unwanted data, which will interfere with B's communication. Many software protocols will not be able to adapt to this situation and may not be able to operate.

Ittelecom's multi-host technology can realize communication scheduling between A and B computers. When A communicates with the device, the reply data of the device is only sent to A; when B needs to communicate, it can be quickly switched to B. ITT-SC4781 will enable multiple computers to monitor the same device at the same time. P2P 3G / 4G serial server

3. P2P 3G / 4G serial server

The application model is ITT-SC4781. This model integrates Ittelecom's P2P technology, which can solve the inconvenience of ordinary 3G / 4G DTU requiring "port mapping" and "dynamic domain name".

At the beginning of the communication, the P2P software on the user's computer-ITTVircom first communicates with the Ittelecom P2P server; meanwhile, ITT-SC4781 can also communicate with the Ittelecom P2P server. After the two parties have negotiated, direct communication between ITT-SC4781 and ITTVircom can be established (No need to forward through the P2P server). The software on the user's computer can communicate through the virtual serial port or TCP analog port provided by ITTVircom.

When in use, users only need to enter the serial number of ITT-SC4781 to be monitored in the ITTVircom software to establish a P2P connection. The P2P method allows users to get rid of the troubles of "port mapping" and "dynamic domain name", and does not need to rent a public IP server, which truly realizes convenient monitoring anytime, anywhere. The combination of P2P technology and 3G / 4G wireless technology realizes an innovative monitoring method.

◆ **Product features:**

- Easy to use, users only need to add the serial number of ITT-SC4781 to use the operation, without professional operations such as port mapping.
- No additional investment is required, and users do not need to rent a public network server.
- Support virtual serial port, no need to modify client PLC software, just like local serial port communication.
- Because there is no need to transit through the server, but direct P2P communication, shorten the time of data communication, improve the real-time communication, and reduce the burden on the central server.
- It supports communication with encryption and username verification to ensure the safety of communication.
- Supported 3G / 4G network. (1) Support EVDO / CDMA2000, telecommunication 3G network. (2) Support 5 modes, TD-LTE / FDD-LTE / WCDMA / TD-SCDMA / GSM, including Unicom 4G, 3G, 2G, mobile 4G, 3G, 2G and telecom 4G networks.
- Provide an Ethernet port that can be used as a 3G router. In order to save traffic in the wired network, it can also be used as an Ethernet DTU, that is, a common serial server.
- supports P2P connection, no need of fixed IP and server, which is convenient for communication and connection.
- supports Modbus gateway function, namely Modbus TCP to RTU conversion.
- supports multi-host monitoring, and multiple hosts do not interfere with each other when monitoring.
- The drawer type SIM card installation method can be installed without disassembly.
- The ITT-SC4781 can be controlled to be in a sleep state through a serial port, and can operate with low power consumption.
- Support one-click search and configuration of network port.
- Support to configure ITT-SC4781 parameters on remote server, upgrade ITT-SC4781 program, etc.
- Industrial design: 9 ~ 24V power supply, terminal connection mode, can be equipped with rail mounting accessories

◆ **Technical Parameters : 3G / 4G parameters**

<ul style="list-style-type: none"> • Support mode 	<ul style="list-style-type: none"> ➤ standard EVDO / CDMA2000, telecommunication 3G / 2G network. ➤ Support 5 modes, TD-LTE / FDD-LTE / WCDMA / TD-SCDMA / GSM, Unicom 4G, 3G, 2G, mobile 4G, 3G , 2G and telecom 4G networks.
<ul style="list-style-type: none"> • Transmission rate 	<ul style="list-style-type: none"> ➤ 3G network speed: uplink 5.76Mbps and downlink 7.2Mbps. ➤ 4G network speed: 2Mbps uplink and 68Mbps downlink.
<ul style="list-style-type: none"> • SIM card 	<ul style="list-style-type: none"> ➤ Voltage: 3V, 1.8V; size: large card (small card can be used to buy card sets)
<ul style="list-style-type: none"> • working environment 	<ul style="list-style-type: none"> ➤ Operating temperature, humidity -40 ~ 85 °C, 5 ~ 95% RH ➤ Storage temperature, humidity -45 ~ 165 °C, 5 ~ 95% RH
<ul style="list-style-type: none"> • Electrical characteristics 	<ul style="list-style-type: none"> ➤ Power interface Q2.1 socket can be customized as power terminal input. ➤ Voltage input 9 ~ 24V DC ➤ Electric current Less than 200mA @ 9V
<ul style="list-style-type: none"> • Antenna interface 	<ul style="list-style-type: none"> ➤ 50Ω / SMA glue stick antenna or sucker antenna optional

◆ Technical Parameters : Serial port parameters

• Serial port type	➤ RS-232 / RS-485
• Serial port parameters	➤ Baud rate: 1200 ~ 115200bps; data bits: 5 ~ 9 bits; stop bits: 1 ~ 2 bits; flow control: hard flow control, soft flow control; check bit: none, even, odd, mark, space
• Mechanical properties	➤ Size:Length × width × height = 9.4cm × 6.5cm × 2.5cm