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F7946 GPS+Dual-Module ROUTER TECHNICAL SPECIFICATION

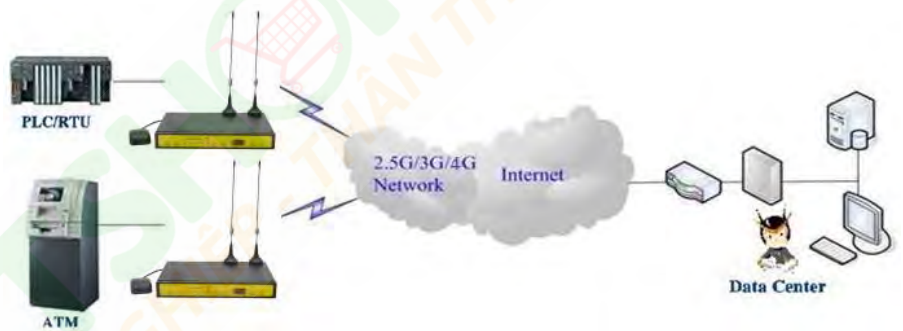


General

F7946 GPS+Dual-Module ROUTER is a kind of cellular terminal device that provides large data transmission function by public LTE/WCDMA/TD-SCDMA/EVDO network and GPS function.

It adopts high-powered industrial 32-bits CPU and embedded real time operating system. It supports RS232 (or RS485/RS422), Ethernet port that can conveniently and transparently connect devices to a cellular network, allowing you to connect to your existing serial, Ethernet with only basic configuration.

It has been widely used on M2M fields, such as intelligent transportation, smart grid, industrial automation, telemetry, finance, POS, water supply, environment protection, post, weather, and so on.



Product Feature

Design for Industrial Application

- ◆ High-powered industrial cellular module
- ◆ High-powered industrial 32bits CPU
- ◆ High-powered industrial GPS module
- ◆ Adapt Dual Module design to ensure the stable and reliable of the router
- ◆ Support low-consumption mode, including sleep mode, scheduled online/offline mode, scheduled power-on/power-off mode(optional)
- ◆ Housing: iron, providing IP30 protection.
- ◆ Power range: DC 5~36V

Stability and Reliability

- ◆ Support hardware and software WDT
- ◆ Support auto recovery mechanism, including online detect, auto redial when offline to make router always online

- ◆ Ethernet port: 1.5KV magnetic isolation protection
- ◆ RS232/RS485/RS422 port: 15KV ESD protection
- ◆ SIM/UIM port: 15KV ESD protection
- ◆ Power port: reverse-voltage and over-voltage protection
- ◆ Antenna port: lightning protection(optional)

Standard and Convenience

- ◆ Support standard RS232(or RS485/RS422), Ethernet port that can connect to serial, Ethernet devices directly
- ◆ Support standard WAN port and PPPOE protocol that can connect to ADSL directly
- ◆ Support intellectual mode, enter into communication state automatically when powered

- ◆ Provide management software for remote management
- ◆ Support several work modes
- ◆ Convenient configuration and maintenance interface (WEB or CLI)

High-performance

- ◆ Support master module, standby module and WAN (PPPOE, ADSL) (optional) triple link backup
- ◆ Support multiple WAN access methods, including static ip, DHCP, L2TP, PPTP, PPPOE, 3G /4G
- ◆ Support VPN client(PPTP, L2TP, OPENVPN, IPSEC and GRE)(only for VPN version)
- ◆ Support VPN server(PPTP, L2TP, OPENVPN, IPSEC and GRE)(only for VPN version)
- ◆ Support local and remote firmware upgrade, import and export configure file
- ◆ Support NTP, RTC embedded
- ◆ Support multiple DDNS provider service

- ◆ Support VLANs, MAC Address clone, PPPoE Server
- ◆ Support the GPS positioning function
- ◆ encryption, Support RADIUS authentication and MAC address filter
- ◆ Support multi online trigger ways, including SMS, ring and data. Support link disconnection when timeout
- ◆ Support APN/VPDN
- ◆ Support DHCP server and client, firewall, NAT, DMZ host, URL block, QoS, traffic, statistics, real time link speed statistics etc
- ◆ Full protocol support, such as TCP/IP, UDP, ICMP, SMTP(optional), HTTP, POP3(optional), OICQ(optional), TELNET, FTP(optional), SNMP, SSHD, etc
- ◆ Schedule Reboot, Schedule Online and Offline, etc

Product Specification
Cellular Specification

Cellular Module	Industrial cellular module
Standard and Band	Main module: LTE FDD 2600/2100/1800/900/800MHz(Band 1/3/7/8/20)700/850/1700/1900/2100MHz (Band 2/4/5/13/17/25)(optional) LTE TDD 2600/1900/2300MHz(Band 38/39/40) (800/1400/1800MHz(Band27/61/62)(optional) DC-HSPA+/HSPA+/HSDPA/ HSUPA/WCDMA/UMTS 2100/1900/900/850/800MHz(Band 1/2/5/6/8) TD-SCDMA 2010/1900MHz(A/F frequency band,Band 34/39) CDMA2000 1X EVDO Rev A 800MHz,800/1900MHz(optional),EVDO Rev B 800/1900MHz(optional) 450MHz (optional) EDGE/GPRS/GSM 850/900/1800/1900MHz Standby module : LTE FDD 2600/2100/1800/900/800MHz(Band 1/3/7/8/20)700/850/1700/1900/2100MHz (Band 2/4/5/13/17/25)(optional) LTE TDD 2600/1900/2300MHz(Band 38/39/40) (800/1400/1800MHz(Band27/61/62)(optional) DC-HSPA+/HSPA+/HSDPA/ HSUPA/WCDMA/UMTS 2100/1900/900/850/800MHz(Band 1/2/5/6/8) TD-SCDMA 2010/1900MHz(A/F frequency band,Band 34/39) CDMA2000 1X EVDO Rev A 800MHz,800/1900MHz(optional),EVDO Rev B 800/1900MHz(optional) 450MHz (optional) EDGE/GPRS/GSM 850/900/1800/1900MHz
Bandwidth	LTE FDD: Download speed 100Mbps, Upload speed 50Mbps

	LTE TDD: Download speed 61Mbps, Upload speed 18Mbps DC-HSPA+: Download speed 42Mbps, Upload speed 5.76Mbps TD-HSPA+: Download speed 4.2Mbps, Upload speed 2.2Mbps EVDO Rev. A: Download speed 3.1Mbps, Upload speed 1.8Mbps
TX power	<23dBm
RX sensitivity	<-97dBm

GPS Specification

Item	Content
GPS Module	Industrial GPS module
Receiver Type	50-channel GPS L1(1575.42MHz)C/A code SBAS: WAAS,EGNOS,MSAS,GAGAN Support GALILEO
Max. update rate	4 Hz
Accuracy	Position: 2.5m CPE SBAS: 2.0m CPE
Acquisition	Cold starts: 29S Warm starts: 29S Aided starts: <1S Hot starts: <1S
Sensitivity	Tracking: -160dBm Reacquisition: -160dBm Cold starts: -144dBm
Timing accuracy	RMS: 30ns 99%: <60ns Granularity: 21ns
Time pulse	Configurable, 0.25 to 1000Hz

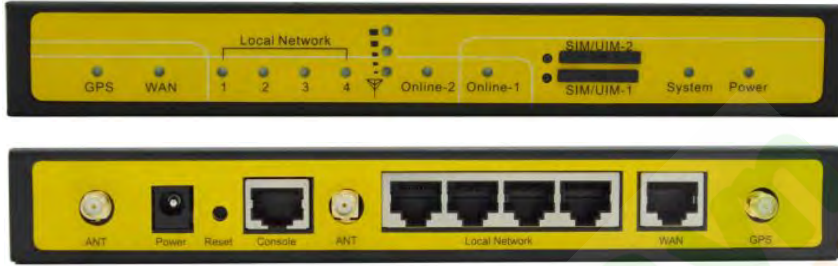
Hardware System

Item	Content
CPU	Industrial 32bits CPU
FLASH	16MB(Extendable to 64MB)
DDR2	128MB

Interface type

Item	Content
WAN	1 10/100 Mbps WAN port(RJ45), auto MDI/MDIX, 1.5KV magnetic isolation protection
LAN	4 10/100 Mbps Ethernet ports(RJ45), auto MDI/MDIX, 1.5KV magnetic isolation protection
Serial	1 RS232(or RS485/RS422) port, 15KV ESD protection Data bits: 5, 6, 7, 8 Stop bits: 1, 1.5(optional), 2

	Parity: none, even, odd, space(optional), mark(optional) Baud rate: 2400~115200 bps
Indicator	"Power", "System", "Online-1", "Online-2", " Local Network ", "WAN", "GPS", "Signal Strength"
Antenna	Cellular: 2 Standard SMA female interface, 50 ohm, lightning protection(optional) GPS: Standard SMA female interface, 50 ohm, lightning protection(optional)
SIM/UIIM	Standard 3V/1.8V user card interface, 15KV ESD protection
Power	Standard 3-PIN power jack, reverse-voltage and overvoltage protection
Reset	Restore the router to its original factory default settings



Power supply

Item	Content
Standard Power	DC 12V/1.5A
Power range	DC 5~36V

Consumption

Working condition	Consumption
Standby	290~360mA@12VDC
Communication	340~610mA@12VDC
Schedule Shutdown	2.57~4.2mA@12VDC

Physical Characteristics

Item	Content
Housing	Iron, providing IP30 protection
Dimensions	207x135x28 mm
Weight	825g

Environmental Limits

Item	Content
Operating Temperature	-35~+75°C (-31~+167°F)
Storage Temperature	-40~+85°C (-40~+185°F)
Operating Humidity	95% (unfreezing)