

D120 Serial to Cellular Gateway Datasheet



>>| Product Introduction

We short name Serial to GPRS Gateway as GPRS DTU IP Modem. And Serial to CDMA Gateway as CDMA DTU IP Modem.

D120 Series DTU modem enables various kinds of legacy devices with serial port to communicate over cellular network and the Internet easily and freely. It not only works as a cellular modem, but also can construct a smooth "cellular Data Tunnel" between Host and Remote side, ensuring an efficient communication for data transmission and remote device management.

With the selectable RS232/TTL/RS485/RS422 serial port, D120 Series DTU modem is an ideal solution for factory automation, environmental monitoring and remote device management etc. Meanwhile, it is supplied with simple Software interface that streamline application development process, freeing system integrators from dealing with complex communication protocols of GPRS/CDMA and the Internet. Users do not need to change the existing system, saving cost and time for field maintenance, and making it a perfect solution for data transmission.

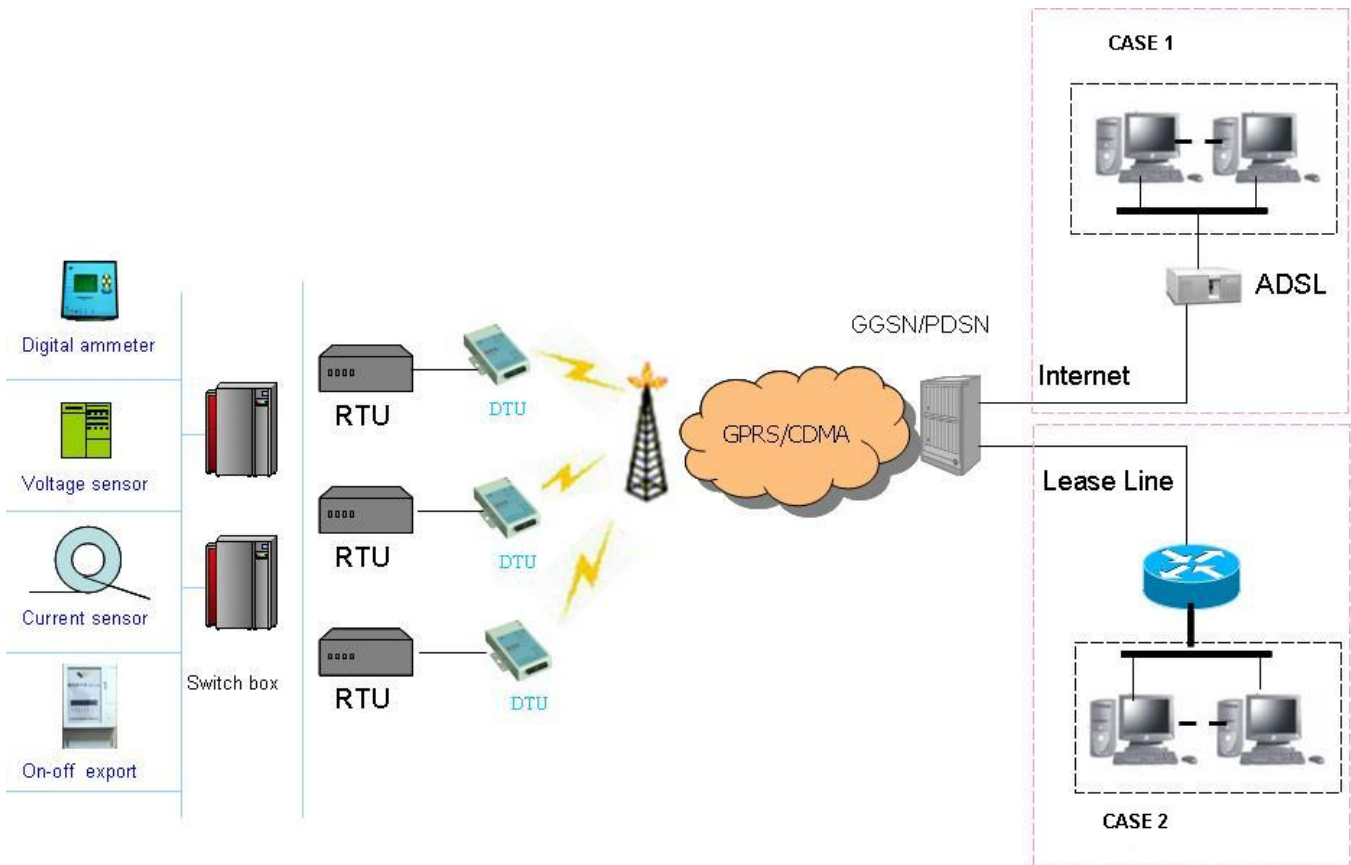
The difference between DTU modem and normal modem

Item	DTU Modem	Normal Modem
Dial up	Support automatically dialup; Online always; trigger to dialup, schedule to dialup	Need machine/pc back platform to dialup
TCP/IP, PPP	Yes	Yes
Interface	RS232/RS485	RS-232
Bandwidth	20~40Kbit/s	20~40Kbit/s
Coverage	Same as GSM network	Same as GSM network
Transparent Data transmission	Yes	No
VDPN	Yes	Yes

Point to Point	Yes	Depends on network
Point to Multipoint	Yes	No
Center to Multipoint	Yes	No
Dynamite IP Address Mapping	Yes	No
Multi-protocol	Yes	No
Applications	Utilities, traffic control, finance and industry supervision	Mobile Internet access for PC

DTU: Data Transmission Unit. Some one calls it as IP modem, or serial IP modem.
It is called as DTU modem by some users.

>>| Typical Topology



>>| Industrial Application

- Remote Data Monitor and Control

- CCTV, security surveillance
- Water, gas and oil flow metering and schedule
- AMR (automatic meter reading)
- Power station monitoring and control
- Remote POS (point of sale) terminals, ATM,
- Traffic signals monitor and control, Traffic info guidance
- Oil field, weather forecast, environmental protection, street lamp monitoring and control
- Early Warning of Mountain Torrent
- Fleet management
- Power distribution network supervision
- Central heating system supervision
- Weather station data transmission
- Hydrologic data acquisition
- Vending machine
- Telemetry, SCADA
- Vehicle logistics and diagnostics controlling
- Parking meter and Taxi Monitor
- Telecom equipment supervision (Mobile base station, microwave or optical relay station)

>>| Benefits and Features

- Industrial design with intelligent software capabilities, making it a reliable GPRS solution for data collection and transmission
- Plug-and-play design with easy-to-use software interface for easy integration
- No need to build expensive fixed line network, saving cost substantially
- Easily manage and control distributed remote devices over the air
- Built-in Watch Dog
- Real-time Clock (RTC)
- Remote firmware upgrade over the air (OTA)
- Connect to any serial device to GPRS and the Internet
- Support TCP,UDP, DNS,PPP,DHCP and so on.
- Reliable GPRS network connectivity, providing fast and cost-effective long-range
- Always-On-Line/on Demand
- Sleep mode supported
- wake up Remotely (SMS or Voice call)
- Support APN
- Industrial design with surge protection
- Local and remote configuration over the air
- Multi-destination IP support

>>| Basic Features

- Embedded PPP, TCP/IP stack
- Transparent data conversion and transmission
- Supports static data service center IP address
- Supports DNS and dynamic data service center IP address
- Supports GPRS/EDGE customized APN or CDMA VPDN
- Supports peer to peer, center to multi-point data transmission
- Supports Xmodem protocol and firmware updating
- Optimized EMC design
- Wide range power input
- Smart power management
- Power on/off control
- Industrial class pluggable terminal block
- Standard antenna and SIM interface
- Reliable, flexible, easy to use and management

>>| Enhanced Features

- Industrial design for different application environments
 1. Industrial class components
 2. Embedded RTOS
- Built-in multiple communication protocols
 1. PPP, TCP/IP, UDP/IP
 2. E-Lins DDP, protocol, ensuring the data channel reliability
 3. E-Lins AT+ protocol, satisfying the customized applications
- Flexible data communication
 1. Supports layer 2 and 3 data communication
 2. Supports RS-232 transparent communication:
UDP/IP or TCP/IP Client/Server
 3. Supports both RS-232 and Ethernet communication
- Multiple operation model
 1. Always online: automatic online while it powered on, automatic redial and keep-alive while the line dropped.
 2. Data triggered online
 3. Ring and SMS triggered online
 4. Online control interface with the connected device
 5. GPRS/CDMA and SMS backup and switch
 6. Data loop testing
- Multiple data service center communications
 1. Supports up to 4 data service center communication
 2. Supports main/backup data service center communication

3. Supports customized setting for each data service center

➤ Flexible data communication

1. Supports TCP/IP Server/Client, UDP/IP, DDP, SMS, AT
2. Self-define transparent or protocol communication
3. Self-define last packet idle interval and MTU
4. Self-define customized data frame separator
5. Self-define re-connecting interval
6. Self-define online report interval
7. Self-define heart-beating data frame

➤ Parameters configuration and remote management

1. Built-in Chinese or English configuration tool
2. PC based configuration tool
3. Remote configuration via data service center
4. Remote configuration by SMS
5. Configuration via AT+ command

➤ Full function data service center development kits

1. Full function development package
2. Complete set of Chinese and English version demo source code (VB, VC, C#, Delphi)
3. Complete function data service center software for transparent data transmission
4. Powerful data service center testing tool

>>|Specification

Wireless	
GSM/DCS	<p>Frequency bands:</p> <ul style="list-style-type: none"> Rx (GSM 850): 869 to 894 MHz Rx (E-GSM 900): 925 to 960 MHz Rx (DCS 1800): 1805 to 1880 MHz Rx (PCS 1900): 1930 to 1990 MHz Tx (GSM 850): 824 to 849 MHz Tx (E-GSM 900): 880 to 915 MHz Tx (DCS 1800): 1710 to 1785 MHz Tx (PCS 1900): 1850 to 1910 MHz <p>Transmit power:</p> <ul style="list-style-type: none"> Class 4 (2 W) at GSM 850 and E-GSM Class 1 (1 W) at DCS and PCS
CDMA1x	800/1900Mhz, 450Mhz optional
GPRS	<p>GPRS multislots class 10</p> <p>Multislots class 2 supported</p>

	PBCCH support Coding schemes: CS1 to CS4
Bandwidth	GPRS 4:1 Down-link: 85.6kbps Up-link: 21.4kbps GPRS 3:2 Down-link: 64.2kbps Up-link: 42.8kbps
Protocol	
Protocol Support	TCP/IP
Interface	
Antenna	50Ω SMA female interface
Serial Port	DB9 (RS232, RS485, RS422, TTL option) 2400~115200bps 300~115200bps optional
LED	Power LED Ring LED Data LED
UIM/SIM	1.8V/3V
Power	
Power supply	DC5V-25V , typical DC 9V1A
Power Consumption	Peak: 0.8A@+9VDC Average: 30mA@+9VDC Idle: 3.5mA@+9VDC
Software	
User Interface	AT Command set
Embedded Development Environment	Support(32M FLASH and 16M RAM) Open AT API develop kit
Physical	
Operating Temperature	work temperature: -30~85℃
Humidity	90% Maximum (Non-condensing)
Dimensions	Item (L x B x H): 75mm x 50mm x 16mm(5.3"x3.7"x1.4") Packaging (L x B x H): 260mm x 190mm x 65mm(10.3"x7.5"x2.6")
Weight	Item: 550g Packaging: 690g
Electronic Compatibility	Anlistatig test: Class 3 Radio electromagnetism test: Class 3
Others	
Warranty	1 Year
Package Contents	The D120 Series DTU Modem DB9 Serial Cable DC 9V/1A Power Adapter Antenna CD-ROM with Product Documentation

Model	
D120gz	GPRS DTU IP Modem, 2400~115200bps baud rate
D120gw	GPRS DTU IP Modem, 300~115200bps baud rate
D120c	CDMA DTU IP Modem

