LEAGRID™

Product Model LGS2000-F-DTU180-485-WAPI

Product Image

Product Overview

LGS2000-F-DTU180-485-WAPI is an industry-specific DTU (data transmission unit) device based on the nationally produced WAPI chip module, which has the capability of RS232/RS485 industrial bus to WAPI wireless network data transmission and reception, and it is plug-and-play. It helps industry users to easily meet the requirements of RS232/RS485 devices to use WAPI wireless technology for data security transmission and ensure the convenience, security and compliance of network communication of industry devices. For example, it requires a lot of cable deployment and construction to connect multiple devices via RS485, but now the LGS2000-DTU180-485-WAPI can eliminate the serial cable deployment and construction, and directly deploy the LGS2000-DTU180-485-W-API at both ends and connect wirelessly via WAPI in the middle, which will help The LGS2000-DTU180-485-W-API is designed with targeted hardware, such as wide temperature, wide voltage, anti-static, anti-surge pulse, hardware watchdog, etc., which can be applied to extreme application environments and is characterized by high reliability, high security, plug-and-play, easy expansion, no development and strong compatibility. It is suitable for electric power, national defense, transportation, security, industrial automation and other industrial market application scenarios.

Technical Specification

Module main parameters	WLAN capability	Support WAPI STA related capability, expandable to support Soft-AP capability
		Support 2.4GHz, 1T1R RF capability, support AMPDU, AMSDU, etc.
		Supports WAPI security mode, complies with GB 15629.11 series national standards, and has passed WAPI Alliance related testing
		Support 20/40M bandwidth working mode
		Support IEEE 802.11b/g/n rate set, support 11nMSC 0~7, MCS32 physical layer transmission rate gears.
		Support WMM QoS capability with dual carrier modulation (DCM)
		Support STBC, GreenField, Short-GI, support reverse transmission
		Support CTS toself, support HT-immediateCompressedBlockAck, NormalAck, NoAck answering method
	Hardware Capabilities	Developed based on the nationally produced WAPI chip module TH6180, industrial grade design
		The 240MHz main frequency MCU can be used as a master to connect to sensors and other peripherals, or as a slave device to provide WLAN communication capability for other master devices.
		It contains a hardware security cryptographic chip certified by the national authority to guarantee the hardware-level security protection of WAPI certificate private key.
		1 RS485 interface, 1 RS232 interface, 1 DC power supply interface, 1 DC power terminal, 1 2.4GHz RF antenna
		Physical dimensions of the main area of the device：82.5 x62 mm
		5~36V DC power supply
		Operating temperature -40 ~ 85 °C
	Software Capabilities	Running a real-time operating system internally（RTOS）
		Supports rich AT instruction set, easy to use and be integrated
		Support WAPI/TCP/UDP/MQTT/HTTP and other common IoT communication protocols
		Support serial port pass-through, master control, auxiliary control and other working modes
		Provide trusted computing metrics to ensure the security and reliability of equipment use
		Support WAPI certificate online application capability and local generation of private key within the chip
		Support firmware local upgrade or remote OTA upgrade capability
		Support accurate and batch remote management capability of devices
		Scalable docking to support public cloud, private cloud, or other business systems

	Parameters	Conditions	Typical values	Unit
RF parameters	Input Frequency		2.4~2.4835	GHz
	Transmitting power	802.11b11Mbps	19±2	dBm
		802.11b54Mbps	16±2	dBm
		802.11nMCS7 HT20	13±2	dBm
	Reception sensitivity	802.11b1Mbps	-96	dBm
		802.11b11Mbps	-87	dBm
		802.11g54Mbps	-73	dBm
		802.11nMCS7 HT20	-71	dBm
	Adjacent channel suppression	Acceptable error range	±2	dB
		802.11b6Mbps	32	dB
		802.11g 54Mbps	16	dB
		802.11n HT20 MCS0	31	dB
		802.11n HT20 MCS7	12	dB

Module typical application

LGS2000-DTU180-485-WAPI supports multiple operating modes.

1、Data transmission mode
All data is sent and received through the RS232/RS485 serial port and WAPI wireless, without any conversion, minimizing the complexity for users.

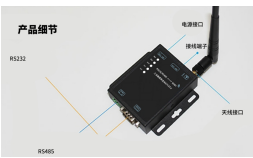
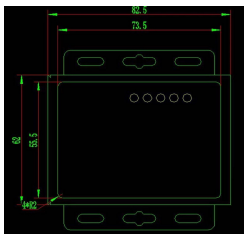
2、AT command mode
The DTU180-485-WAPI supports querying and configuring parameters via AT commands on the serial port.

3、Modbus polling mode
It can realize the interchange of Modbus RTU and Modbus TCP, and easily realize the Modbus protocol of RS485 bus and TCP network

4、Heartbeat monitoring mode
DTU180-485-WAPI Modbus supports serial heartbeat and network heartbeat monitoring
The serial heartbeat packet notifies the serial device that it is active and then actively grabs the device data, typically for monitoring sensor devices that cannot actively push data. sensor devices that cannot actively push data.
Notify the server that it is active via network heartbeat packets and maintain a normal connection to the server by continuously sending network heartbeat packets.

5、Socket distribution mode
DTU180-485-WAPI supports socket distribution protocol, which can send data to different sockets through specific network protocols, and can also
ils.

Product interface and size
Interface



Machanical Drawing