

HF2411

4G DTU User Manual

V 1.0



Overview of Characteristic

- ✧ Support LTE-TDD, LTE-FDD, WCDMA, TD-SCDMA, GPRS
- ✧ Support RS232/RS485 to 2G/3G/4G Data Transmission, UART baud rate Up to 460800bps
- ✧ Supports Max 3 Channel TCP/UDP connections, Each Connection Supports 1400 Bytes of Data Cache
- ✧ Support Multiple Working Modes: Network Transparent Transmission Mode, HTTP Mode
- ✧ Support IOTService Tool, Remotely and Dynamically Modify Module Parameters
- ✧ Support SMS AT Command Configuration
- ✧ Supports Registration Packet, Heartbeat Packet Function, and Packet Supports Combination of ICCID, IMEI, IMSI, Software Version, GPRS Connection Status.

- ✧ Support NTP
- ✧ Support Modbus TCP to Modbus RTU
- ✧ Support IOTBridge for Remote Control and Config
- ✧ Support IOTBridge Working Time Setting, For Example, Only Works From 10:00 to 10:30 to Save the Data Traffic
- ✧ Support UART, Network OTA Upgrade Firmware
- ✧ Size: 95 x 65 x 25mm
- ✧ 9~36VDC Wide Power Supply

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HISTORY

V 1.0 11-28-2018. First Version

1. PRODUCT OVERVIEW

1.1. General Description

The HF2411 support LTE-TDD, LTE-FDD, WCDMA, TD-SCDMA, GPRS full network. 4G network support maximum download data rate 150Mbps, upload data rate 50Mbps.

The HF2411 support TCPIP protocol, with its RS232/RS485 interface, it make traditional UART device easy connecting to IOT.

1.2. Device Parameters

Table1. HF2411 Technical Specifications

Item	Parameters
System Information	
Processor/Frequency	Cortex-M3/96MHz
Operating System	FreeRTOS
2G/3G/4G Interface	
Transmit Power	LTE-TDD: Class 3(23dBm+1/-3dB) LTE-FDD: Class 3(23dBm±2dB) WCDMA: Class 3(24dBm+1/-3dB) TD-SCDMA: Class 3(24dBm+1/-3dB) GSM900: Class 4(33dBm±3dB) DCS1800: Class 1(30dBm±3dB) GSM900 8-PSK: Class E2(27dBm±3dB) DCS1800 8-PSK: Class E2(26dBm±3dB)
Receive Sensivity	FDD B1: -96dBm(10M) FDD B3: -96dBm(10M) FDD B5: -96dBm(10M) FDD B8: -96.5dBm(10M) TDD B38: -96dBm(10M) TDD B39: -97dBm(10M) TDD B40: -96.5dBm(10M) TDD B41: -96dBm(10M) WCDMA B1: -110dBm WCDMA B8: -111dBm TDSCDMA B34: -109dBm TDSCDMA B39: -109dBm GSM 900M: -109dBm GSM 1800M: -109dBm
LTE	Maximum Support non-CA CAT4 Support 1.4~20MHz RF Bandwidth Downstream Support Multiple Users MIMO FDD: Maximum Upstream Rate 50Mbpsm Maximum Downstream Rate 150Mbps TDD: Maximum Upstream Rate 35Mbpsm Maximum Downstream Rate 130Mbps
WCDMA	3GPP R8 DC-HSPA+ 16-QAM,64-QAM and QPSK Modulation Maximum Upstream 5.76Mbps

	Maximum Downstream 42Mbps
TD-SCDMA	CCSA Release 3 Maximum Upstream 2.2Mbps Maximum Downstream 4.2Mbps
GSM/GPRS	R99: CSD Transmission Rate: 9.6Kbps/14.4Kbps GPRS: Support GPRS multi-slot class 12 Code Method: CS-1/CS-2/CS-3/CS-4
Serial Port	
Port Number	1
Interface Standard	RS232: DB9 RS485: 5.08mm connector Choose either RS232 or RS485.
Data Bits	7,8
Stop Bit	1,2
Check Bit	None,Even,Odd
Baud Rate	TTL: 1200 bps~460800 bps
Flow Control	No Flow control Half-Duplex(RS485) Hardware RTS/CTS、DSR/DTR(RS232)
Software	
Configuration	Serial AT Command IOTService Serial Port Configuration Software IOTService Network Configuration Software
Firmware Upgrade	UART or OTA Upgrade
Basic Parameter	
SIM Card	Standard SIM card(1.8V/3V)
Size	95mm x 65mm x 25mm
Operating Temp.	-40 ~ 85°C
Storage Temp.	-45 ~ 105°C, 5 ~ 95% RH (no condensation)
Input Voltage	9~36VDC
Working Current	~300mA@9V

1.3. Key Applications

The HF2411 module connects the serial device to the Internet and conforms to the TCP/IP protocol for transmitting serial data.

- Remote device monitoring
- Production asset tracking and monitoring
- Security field
- Industrial sensors and controllers
- Health medical equipment
- ATM equipment
- Data acquisition equipment
- UPS power management equipment
- Telecommunication equipment
- Data display device

- Hand-held device
- Attendance system and terminal equipment

2. HARDWARE INTRODUCTION

HF2411 is a 4G solution for serial device networking. Data transmission via 2G/3G/4G makes product integration very easy. This product meets EMC Class B security level and can pass relevant certification tests in various countries.

2.1. Appearance



Figure 1. HF2411 Appearance

2.2. HF2411 Interface



Figure 2. HF2411 Interface

Table2. HF2411 Interface Definition

Function	Name	Description
External Interface	DC	DCPower 9~36V Input
	RS485/RS232	RS485 A+ Connector RS485 B- Connector RS232 Rxd Connector RS232 Txd Connector Use either RS485 or RS232(Can not work both)
	SIM Card	Standard Sim Card Slot
	Earth	Connect to Protect GND
	Antenna	4G SMA Antenna
	RS232	9-PIN RS232
	NET	Network Status LED

Function	Name	Description
Indicator		0.2s On -> 1.8s Off: Search the network 1.8s On -> 0.2s Off: Network standby (Reserved) 0.125s On -> 0.125s Off: Network Communication OK
	Link	Socket Status Bi-Color LED Blue On: Socket A channel connection is OK Green On: Socket B channel connection is OK
	Active	UART Data Bi-Color LED Blue On: UART data output Green On: UART data input
	Power	3.3V Internal Power Supply LED
	Mode	Network working mode LED On: Connect to 4G LTE network Off: Other 2G/3G network
	Signal	Network signal strength LED On: Strong signal(≥ 22) 0.9s On -> 0.9s Off: Medium signal($22 > \text{Signal} > 15$) 0.3s On -> 1.2s Off: Weak signal($15 > \text{Signal} > 4$) Off: low signal (usually no antenna connected)
Button	Reload	Long press 3 seconds down and loose to restore parameters to factory setting
Switch	Protect	Parameter Protect (Function is Reserved)

2.3. RS232 Interface

Device serial port is male(needle), RS232 voltage level(can connect to PC directly), Pin Order is consistent with PC COM port. Use cross Cable connected with PC(2-3 cross, 7-8 cross, 5-5 direct), see the following table for pin definition.



Figure 3. RS232 Pin Definition(Male/Needle Type)

Table3. RS232 Interface

Pin Number	Name	Description
2	RXD	Receive Data
3	TXD	Send Data
5	GND	GND
7	RTS	Request to Send
8	CTS	Clear to Send

2.4. RS485 Interface

RS485 use two wire links, A(DATA+), B(DATA-). Connect A(+) to A(+), B(-) to B(-) for communication. Suggest to connect GND together when interference is very severe.

The RS485 interface support maximum 32 485 device, device. The cable maximum length is 1200 meters. Need to add 120Ohm terminal resistor for over 300 meters.

2.5. Mechanical Size

The dimensions of HF2411 are defined as following pictures(mm):

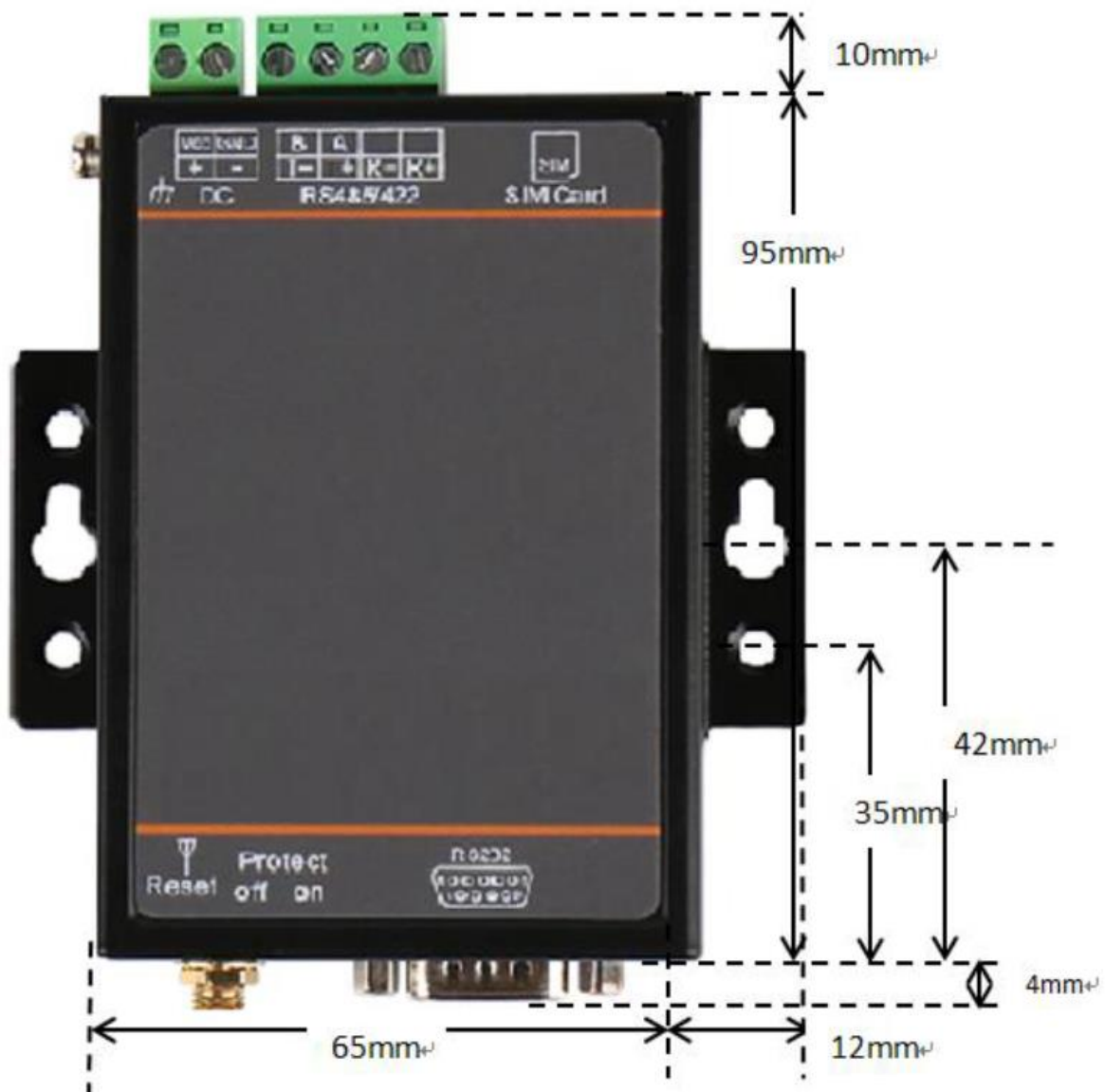


Figure 4. HF2411 Mechanical Size

2.6. Product Order Information

Based on customers detailed requirements, we provide different configuration HF2411, details as below:

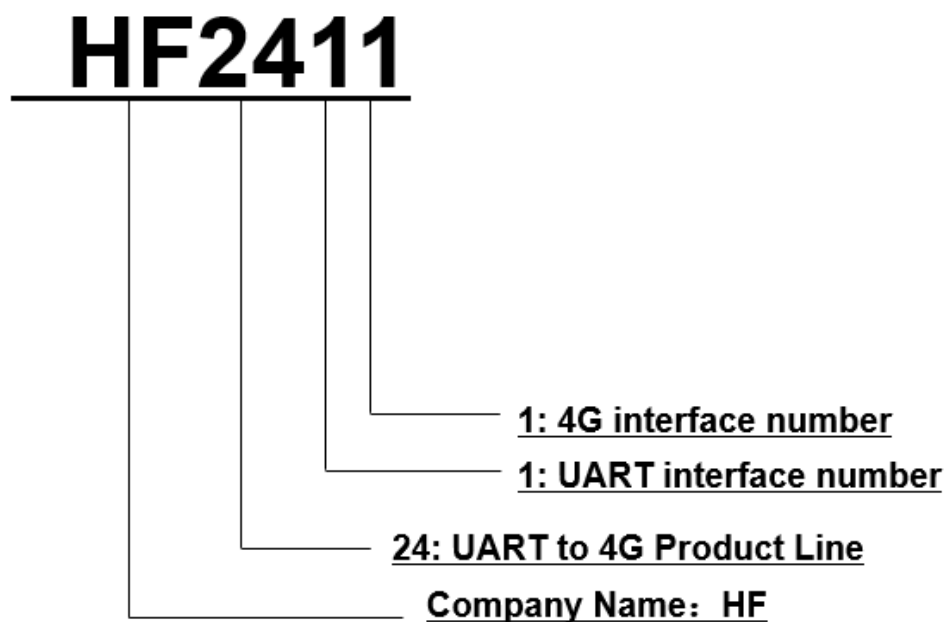


Figure 5. HF2411 Product Order Information

APPENDIX A: CONTACT INFORMATION

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