

# HF2111A

## GPRS DTU User Manual

V 1.0



### Overview of Characteristic

- ◇ Support GPRS(850/900/1800/1900MHz)
- ◇ Support RS232/RS485 to GPRS 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** 12-07-2018. First Version

# 1. PRODUCT OVERVIEW

## 1.1. General Description

The HF2111A support GPRS/GSM

The HF2111A support TCP/IP protocol, with its RS232/RS485 interface, it make traditional UART device easy connecting to IOT.

## 1.2. Device Parameters

Table1. HF2111A Technical Specifications

Item	Parameters
<b>Wireless Parameter</b>	
GPRS Band	GSM850, EGSM900, DCS1800, PCS1900
GPRS Transmit Power	GPRS transmit power GSM850/EGSM900: 5dbm~32.5dbm DCS1800/PCS1900: 0dbm~29.5dbm
GPRS Receiving Sensitivity	<-108.5dBm
GPRS Connection Feature	GPRS multi-slot level is 10 (default) GPRS mobile station level B
GPRS Data Characteristics	GPRS data downlink transmission: up to 85.6 kbps GPRS data uplink transmission: up to 85.6 kbps Encoding format: CS-1, CS-2, CS-3 and CS-4
GPRS Antenna Interface Characteristic Impedance	50 $\Omega$
<b>Serial Port</b>	
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: 2400 bps~460800 bps
Flow Control	No Flow control Half-Duplex(RS485) Hardware RTS/CTS、DSR/DTR(RS232)

<b>Software</b>	
Configuration	Serial AT Command IOTService Serial Port Configuration Software IOTService Network Configuration Software
Firmware Upgrade	UART or OTA Upgrade
<b>Basic Parameter</b>	
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 HF2111A 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

HF2111A is a GPRS solution for serial device networking. Data transmission via GPRS 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. HF2111A Appearance

## 2.2. HF2111A Interface



Figure 2. HF2111A Interface

Table2. HF2111A 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	GPRS SMA Antenna
	RS232	9-PIN RS232
LED Indicator	NET	Network Status LED(Function is reserved) Off: No network connection 2s On -> 2s Off: Network connection is OK 100ms On -> 100ms Off: Network is in transferring



Function	Name	Description
	Active	UART Data Bi-Color LED Blue On: UART data output Green On: UART data input
	Power	3.3V Internal Power Supply LED
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 defination.



Figure 3. RS232 Pin Defination(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 HF2111A are defined as following pictures(mm):

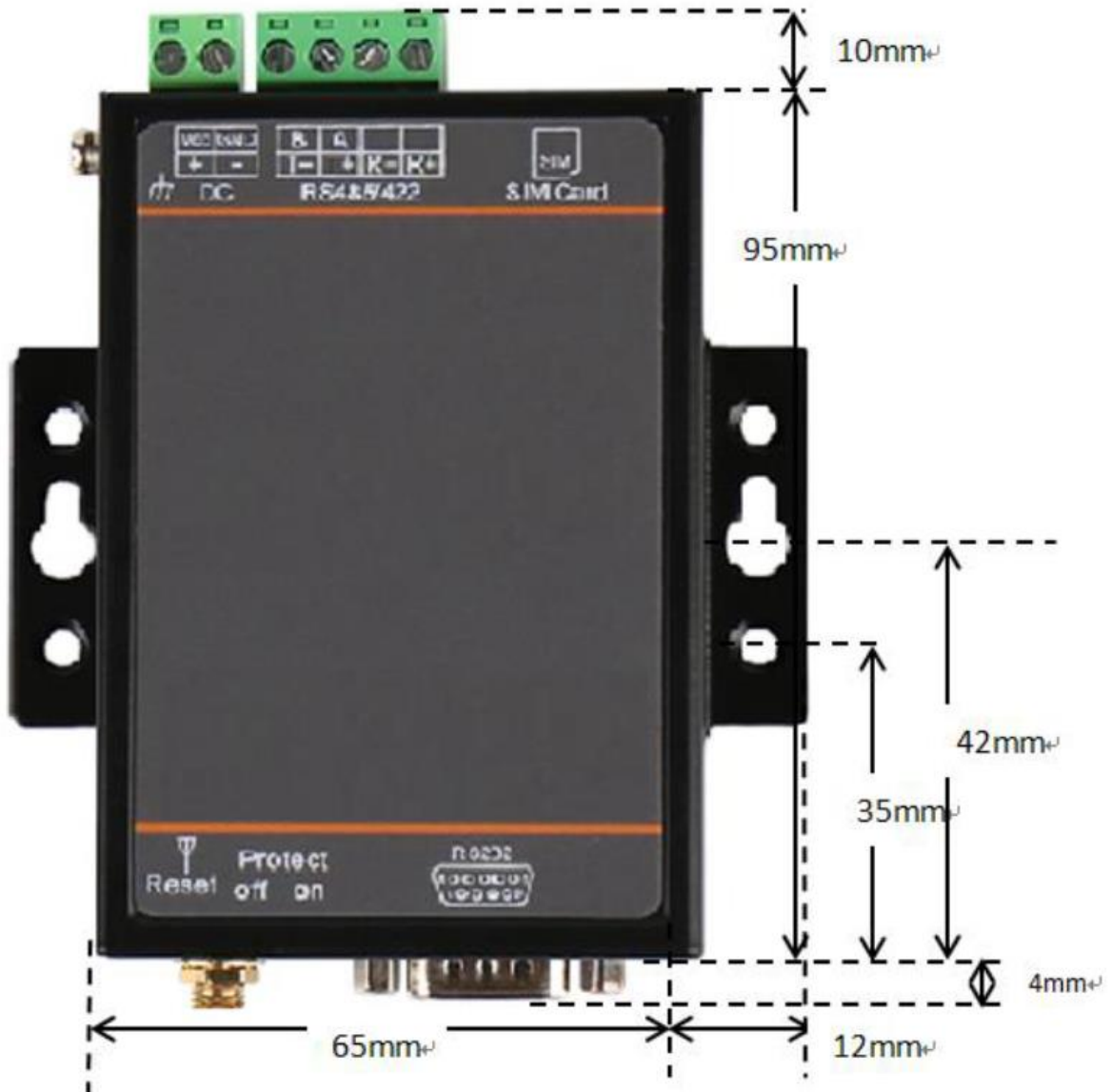


Figure 4. HF2111A Mechanical Size

## 2.6. Product Order Information

Based on customers detailed requirements, we provide different configuration HF2111A, details as below:

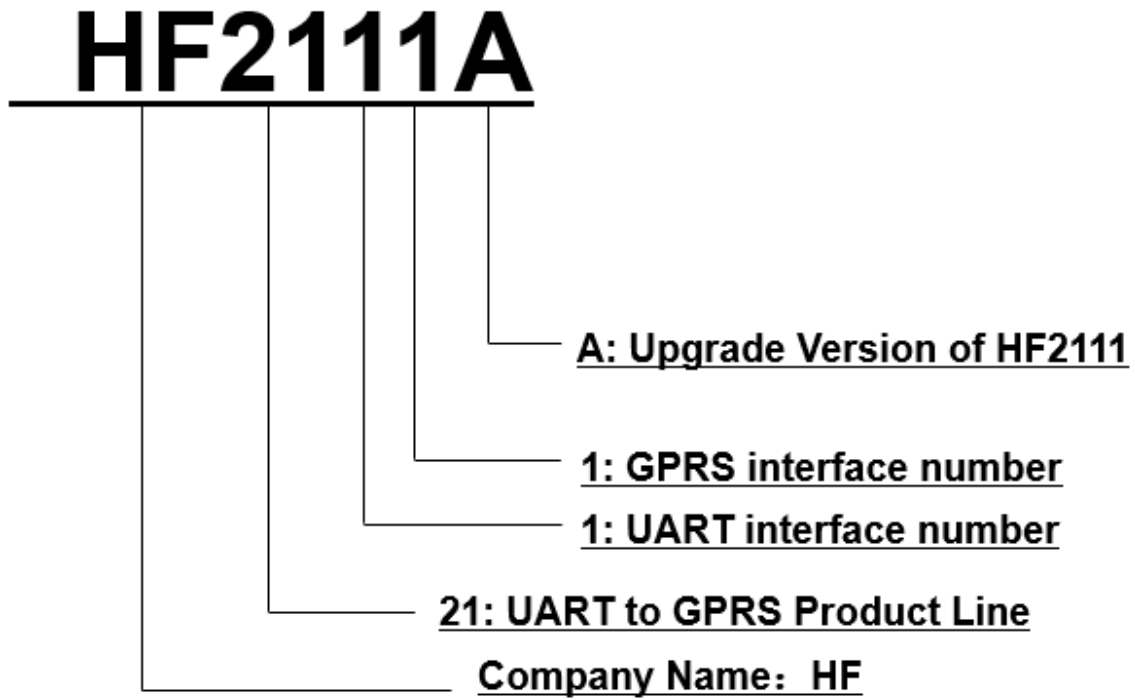


Figure 5. HF2111A Product Order Information

## APPENDIX A: CONTACT INFORMATION

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