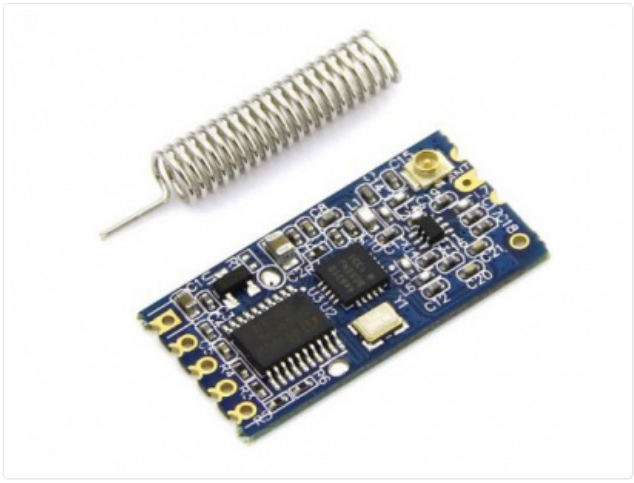
RF Serial Data Link UART, 433 Mhz, 1KM

Model: 4306

Si4463 based, around 1 Kilometer range



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Quantity	Price
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100+	Rs.2,000/-

Based on proven Silab's SI4463 RF Chip and STM8 MCU on single module making it easy to use with serial UART data. The serial RF module is a low cost, high performance transparent FSK transceiver with operating at 433 MHz. It features small size, high output power, high sensitivity, long transmission distance and high communication data rate with auto set up for communication change and data receiving and transmission control. With the UART interface, it is easy to setup the wireless data transmission with only providing the UART data. It is flexible for the users to set the UART baud rate, frequency, output power, data rate, frequency deviation, receiving bandwidth etc parameters. It is your ideal choice for designing wireless data transmission products which can be widely used on wireless data transmission field.

Its wireless working frequency band is 433.4-473.0MHz, multiple channels can be set, with the stepping of 400 KHz, and there are totally 100 channels. The maximum transmitting power of module is 100mW (20dBm), the receiving sensitivity is -117dBm at baud rate of 5,000bps in the air, and the communication distance is 1,000m(1 Km) in open space (600 meters indoor).

The single module can not work on its own, please get two or more of these modules to setup working link. Also note that this module do not work with our 433Mhz Wireless Serial Transmitter Module module.

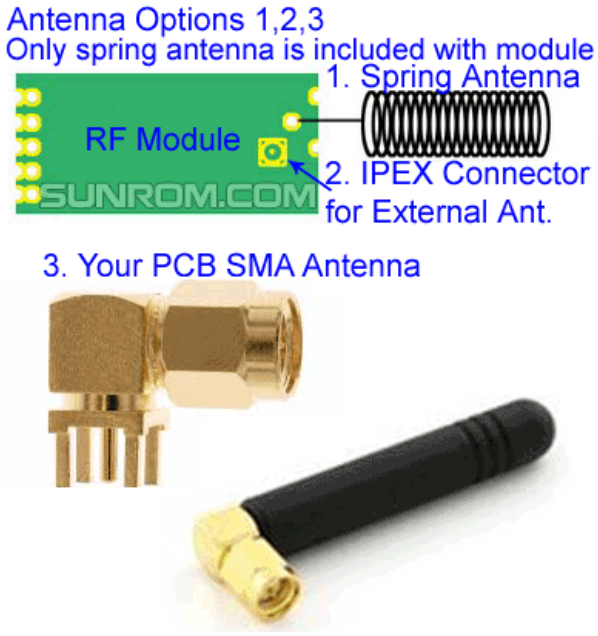
Features

- Frequency band is 433 MHz
- Multiple types of serial port transparent transmission modes have respective features, and the mode is changed by command
- No need to program the modules. Ready to use out of box
- Low current consumption; the idle current is 3.5mA(RX mode) or 100mA(TX mode during transmit maximum output)
- All functions and parameters are changed by command, and can be saved in case of power failure
- The number of bytes sent to serial port of module unlimited to one time

Specification

- Working frequency: 434Mhz433.4-473.0MHz, up to 100 communication channels
- Supply voltage: 3.3V to 5VDC
- Communication distance: 1m to 1000m(1Km open space) (600 mts indoor)
- Serial baud rate: 1.2Kbps to 115.2Kbps □default 9600 Kbps□
- Receiving sensitivity: -117dBm to -100dBm
- Transmit power adjustable: -1dBm to 20dBm
- Interface protocol: UART/TTL
- Operating temperature: -40I to +85I
- Dimensions: 27.8mm x 14.4mm x 4mm

Antenna Options



Application

- Sensor Networks / Data collection
- Wireless metering
- Access control / Identity discrimination
- IT home appliance
- Smart house products / Security Systems
- Remote control / Remote measurement system
- Weather stations

Typical Application

When setting a RF serial data communication between microcontrollers or a microcontroller to PC, the RF modem is most useful and easy to implement.

Pin definition

- VCC = Regulated 3.3V or 5V supply input of atleast 200mA current capacity.
- GND = Ground level of power supply. Must be common ground with microcontroller.
- RXD = Receive Input: Input serial data of 3 to 5V logic level, Usually connected to TXD pin of microcontrollers/RS232/PC.
- TXD = Transmit Output: Output serial data of 3 to 5V logic level, Usually connected to RXD pin of microcontrollers/RS232/PC.
- SET = Setting Mode (Internally Pulled High) - Leave floating(High) is normal mode. To enter config mode pull the pin low either from switch or external MCU and send AT commands to configure.

(Note: If the module is working in transmitting state for a long time, it is suggested that one 1N4007 diode should be connected in series when the power voltage is greater than 4.5V, to avoid heating of built-in LDO of module.)

Operation

This module works in half-duplex mode. Atleast 2 pcs of same unit required to perform test. Means it can either transmit or receive but not both at same time. After each transmission, module will be switched to receiver mode automatically. The data sent is checked for CRC error if any. If chip is transmitting and any data is input to transmit, it will be kept in buffer for next transmission cycle. It has internal buffer for incoming data so they do not get lost when module is active transmiting data.

Configuration (AT Command mode)

There’re 2 ways to make the module enters AT command setup mode

1. When module is working, pull the SET Pin 5 to low for over 3ms;

2. Or when module is off power, pull SET Pin5 to low, and power up the module, this will make module restore back to default status(9600 bps, transparent RS232 transferring mode ready to accept AT commands).

Please note, when finish sending the AT configuration data, user must wait 15ms to make sure the module can finish read the setup data successfully.

Command	Meaning	Example
AT	Test the mode	Shall reply with "OK"
AT+Bx	Change 232's baud rate， can be set to 2400，2400，4800，9600，19200，38400 57600，115200。Default is 9600	Set baud rate to 57600： AT+B57600，Reply OK— B57600
AT+U	232's Pairing & Stop bit set: N：No pairing， O：odd； E：Even。 1：1 bit stop； 2：2 bit stop； 3：1.5 bit stop	To set Odd paring 2 bit stop : AT+UO2，Reply OK— UO2

Note: x in AT command mentioned here means a digital value as parameter.

AT+Axxx - Change module address□ From 000 to 255
Default is 000
Example Set address to 123□AT+A123□ Reply OK□A123

AT+Cxxx Change Frequence chanel□from 001 to 127
Default is 001□Suggest to use 1~100 for stable performance□
Example Set channel to 023□AT+C023 Reply OK□C023

AT+Px Set wireless Power□x is from 1 to 8
Default is 8, 1 □ 8 means -1dBm, 2dBm, 5dBm, 8dBm, 11dBm, 14dBm, 17dBm, 20dBm; Default 8□is 20dBm)
Example Set power to 8(maximum default): AT+P8 Reply OK - P8

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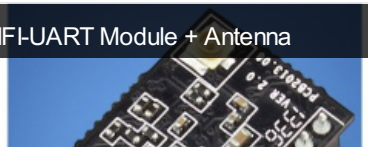

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