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ATOM DTU LoRaWAN868 Get one now !

6–8 Minuten

SKU:K063

This tutorial will show you how to create applications and node devices in TTN and implement data sending and receiving from the device to the cloud

Description

ATOM DTU LoRaWAN868 is a LoRaWAN Programmable Data

Transmission Unit (DTU) suitable for 868MHz frequency. The module adopts the ASR6501 scheme, which supports long-distance communication and has both ultra-low power consumption and high sensitivity. The module integrates the LoRaWAN protocol stack and adopts a serial communication interface (using AT command set for control). When used, it can be used as a collection node to access a large number of gateways for data collection and management. Integrate SMA external antenna interface to improve the communication quality and signal stability of the device. Unlike the DTU which generally only has the function of data transparent transmission, the ATOM DTU series adopts a more open architecture design. The controller ATOM LITE can modify the program at will according to the actual business. The whole machine reserves a variety of interfaces (RS485, I2C, custom interface) for user expansion, which is convenient for the rapid access of sensors and actuators. With its own guide rail clamping structure, it is perfectly embedded in various industrial control sites. A cost-effective solution for small data collection nodes.

Product Features

- ASR6501

- Operating frequency: 868MHz

- Serial communication: UART 115200bps (AT command)

- With super anti-interference ability, able to work normally in complex interference environment

- RS485 communication interface (with 12V input interface, internal integrated DCDC step-down 5V)

- Modbus Master/slave

- Strong signal access capability

- External antenna: SMA antenna interface

- Grove expansion interface: -I2C x1 -Custom x1

- Self-contained rail clamping

Includes

- 1x ATOM LITE

- 1x ATOM DTU LoRaWAN868

- 1x SMA antenna

- 1x SMA red cap

- 1x M2 hexagon wrench

- 1x M2x16 screw

- 1x 3.96-4P terminal

Application

- Automatic remote meter reading

- Intelligent traffic intelligent parking lot

- Remote irrigation and environmental monitoring

Specifications

Resources	Parameter
Communication chip	ASR6501
Operating frequency	868MHz
LoRaWAN Version	v1.0.1
Minimum receiving sensitivity	-137dBm (SF=12/BW=125KHz)
Maximum transmit power	+21dBm
communication	UART 115200bps
Net weight	32g
Gross weight	40g
Product Size	64 * 24 * 29mm
Package Size	91 * 42 * 24.5mm

Hook up

Rail buckle
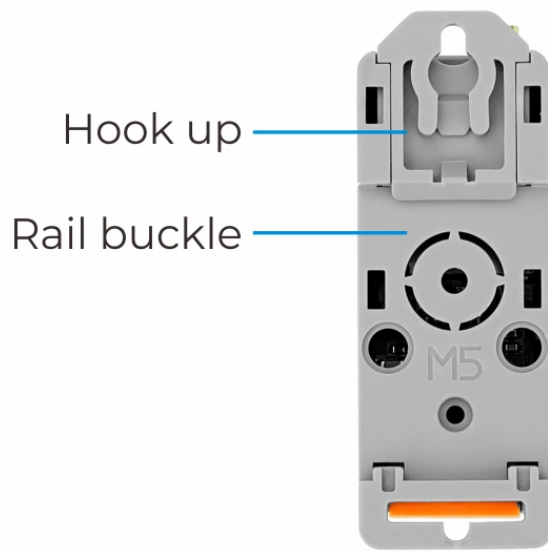
868MHz supported countries

Albania/Andorra/Armenia/Austria/Bahrain/Bangladesh/Belarus/ Belgium/Myanmar/Bosnia and Herzegovina/Brunei Darussalam/Bulgaria/Cambodia/Cambodia/Croatia/Cyprus/ Denmark/Egypt/Estonia/ Finland/France/Germany/Germany Guatemala/Hungary/Iceland/Iran/Ireland/Italy/Laos/Latvia/ Lebanon/Liechtenstein/Lithuania/Luxembourg/Macedonia, the former Federal Republic of Yugoslavia/Malta/Moldova/ Montenegro/Morocco/Netherlands/Netherlands/New Zealand/ Nigeria/Norway/Oman/Pakistan/Poland/Portugal/Qatar/ Romania/Saudi Arabia/Serbia/Singapore/Slovenia/South Africa/ Spain/Sweden/Switzerland/Tunisia/Turkey/Ukraine/UAE/UK/ Vietnam
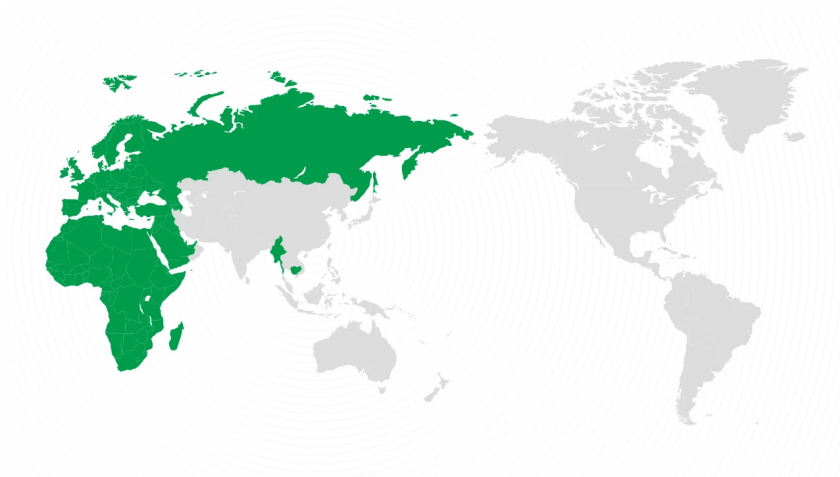
Pin mapping
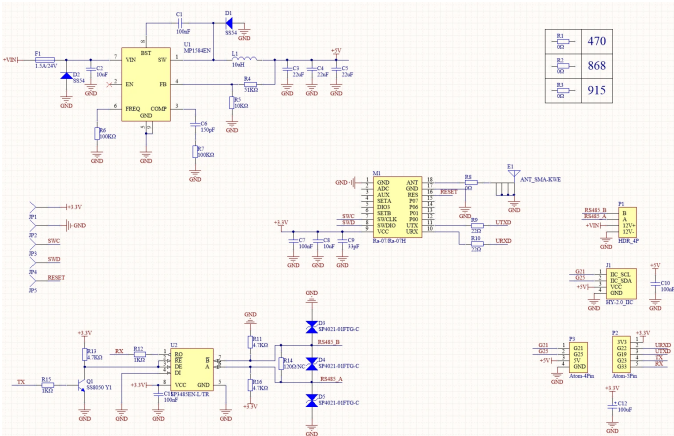
- LoRaWAN868

ATOM	G22(TX)	G19(RX)	5V	GND
LoRaWAN868	RX	TX	VIN	GND

- RS485

ATOM	G23	G33	5V	GND
RS485	TX	RX	VIN	GND

- I2C

ATOM	G25	G21	5V	GND
I2C	SDA	SCL	VIN	GND

Schematic

- [LoRaWAN868 AT command set](#)

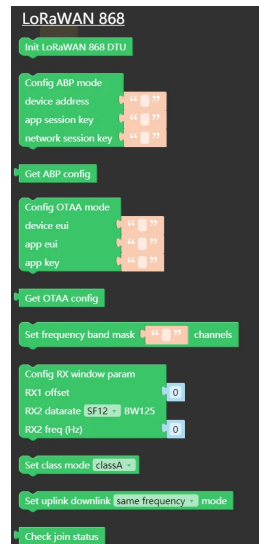- [LoRaWAN Regional parameters](#)

Example

Arduino

- Examples
- [ATOM DTU LoRaWAN ABP](#)

- [ATOM DTU LoRaWAN OTAA](#)

- [ATOM DTU LoRaWAN ModBus RTU Master](#)

- [ATOM DTU LoRaWAN ModBus RTU Slave](#)

- Libraries
- [ArduinoModbus](#)

- [Arduino485](#)

- [UNIT_LoRaWAN](#)

- [M5Atom](#)

- [FastLED](#)

UIFlow

Feature Introduction

`Init LoRaWAN 868 DTU` Initialize the module

`Config ABP mode device address app session key network session ket` Configure ABP mode to access the network

`Get ABP config` Get network access information in ABP mode

`Config OTAA mode device eui app eui app key` Configure OTAA mode to access the network

`Get OTAA config` Get network access information in OTAA mode

`Set frequency band mask channels` Set the frequency band mask channel

`Config RX window param RX1 offset RX2 data rate BW125 RX2 freq(Hz)` Set the RX window parameters

`Set class mode` Set the class mode

`Set uplink downlink mode` Set up and down link mode

`Check join status` Check the status of joining the network
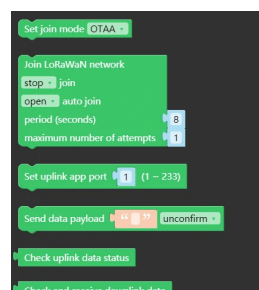
`Set join mode` Set the mode of access to the network

`Join LoRaWAN network join auto join period (seconds) maximum number of attempts` Set the information of device access to the network

`Set uplink app port (1 ~ 233)` Set the uplink application port (1 ~ 233)

`Send data payload` Send data payload to the server

`Check uplink data status` Check the status of uplink data

`Check and receive downlink data` Check and receive downlink data
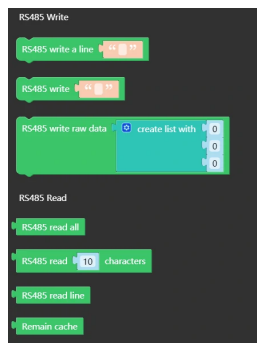
`RS485 write a line` Write a line of data
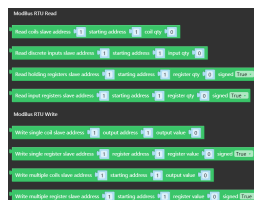
`RS485 write` Data input

`RS485 write raw data create list with` Write raw data in list form

`RS485 read all` Read all data of RS485

`RS485 read characters` Read the number of characters of RS485

`RS485 read line` Read the data of a line of RS485

`Remain cache` Remain cache of RS485

`Read coils slave address starting address coil qty` Read the data of the coils

`Read discrete inputs slave address starting address input qty` Read the data of the discrete inputs

`Read holding registers slave address starting address register qty signed` Read the data of the holding registers

`Read input registers slave address starting address register qty signed` Read the data of the input registers

`Write single coil slave address output address output value` Write data to a single coil

`Write single register slave address register address register value signed` Write data to a single register

`Write multiple coils slave address starting address output value` Write data to multiple coils

`Write multiple register slave address starting address register value signed` Write data to multiple register

Usage