

Unit LoRaE220-433

SKU:U170-433



Description

Unit LoRaE220-433 is a LoRa communication unit for the 433MHz frequency band launched by M5Stack, using the LLCC68 chip solution. Compared to the traditional SX1278 solution, the LLCC68 offers advantages such as longer transmission distance, faster speed, and lower power consumption. This unit supports features like over-the-air wake-up, carrier sensing, and communication keys, enabling point-to-point transmission and broadcast modes through convenient serial communication. The module can switch between four different working modes via an onboard DIP switch, allowing users to send and receive data without complex configurations, meeting various communication needs. It is suitable for applications such as home security alarms, building automation, smart homes, and the automotive industry.

| Features

- LLCC68 chip solution
- Maximum transmit power of 22dBm, software-adjustable in multiple levels
- Supports user-defined communication keys
- Supports over-the-air wake-up
- Supports point-to-point transmission, broadcast transmission, and channel listening
- Communication frequency band: supports 433MHz band (410.125 ~ 493.125MHz)
- Onboard DIP switch for communication mode adjustment
- Serial communication

| Includes

- 1 x LoRaE220-433 Unit
- 1 x HY2.0-4P Grove cable (20cm)
- 1 x Rubber duck antenna (@2.5dBi, total length 110mm, SMA male)

| Applications

- Home security alarms and remote keyless entry
- Smart homes and industrial sensors
- Wireless alarm security systems
- Building automation solutions
- Wireless industrial remote controls
- Healthcare products
- Advanced metering infrastructure (AMI)
- Automotive industry applications

| Specifications

Specification	Parameter
LoRa module	E220-400T22S@LLCC68
Supported frequency	Default 433MHz (supports 410.125 ~ 493.125MHz)
Maximum transmit power	22dBm, software-adjustable in multiple levels
Receive sensitivity	-129 dBm
Supply voltage	5V
Communication method	Serial communication (115200)
Working modes	Transmission mode WOR transmit mode WOR receive mode Sleep mode
Antenna	Rubber duck antenna (@2.5dBi, total length 110mm, SMA male)
Operating temperature	0 ~ 40°C
Product Size	71.4 x 24.0 x 8.0mm
Product Weight	19.5g
Package Size	138.0 x 93.0 x 9.0mm
Gross Weight	24.9g

Learn

Working Mode Configuration

Unit LoRaE220-433 Working Modes

Working Mode (0-3)	M0, M1	Mode Description
0: Transmit/Receive Mode	M0:OFF, M1:OFF	Normal data packet transmission and reception mode
1: WOR Transmit Mode	M0:ON, M1:OFF	Transmit WOR data packets, this mode also supports data reception (supports over-the-air wake-up)
2: WOR Receive Mode	M0:OFF, M1:ON	Disables data transmission, this mode only supports WOR data packet reception
3: Parameter Configuration Mode	M0:ON, M1:ON	Switch to configuration mode to set module transmit power, channel, address, etc.



M0 M1
ON
1 2

WOR Transmit
Mode

M0 M1
ON
1 2

WOR Receive
Mode

Working Modes

M0 M1
ON
1 2

Transparent
Mode

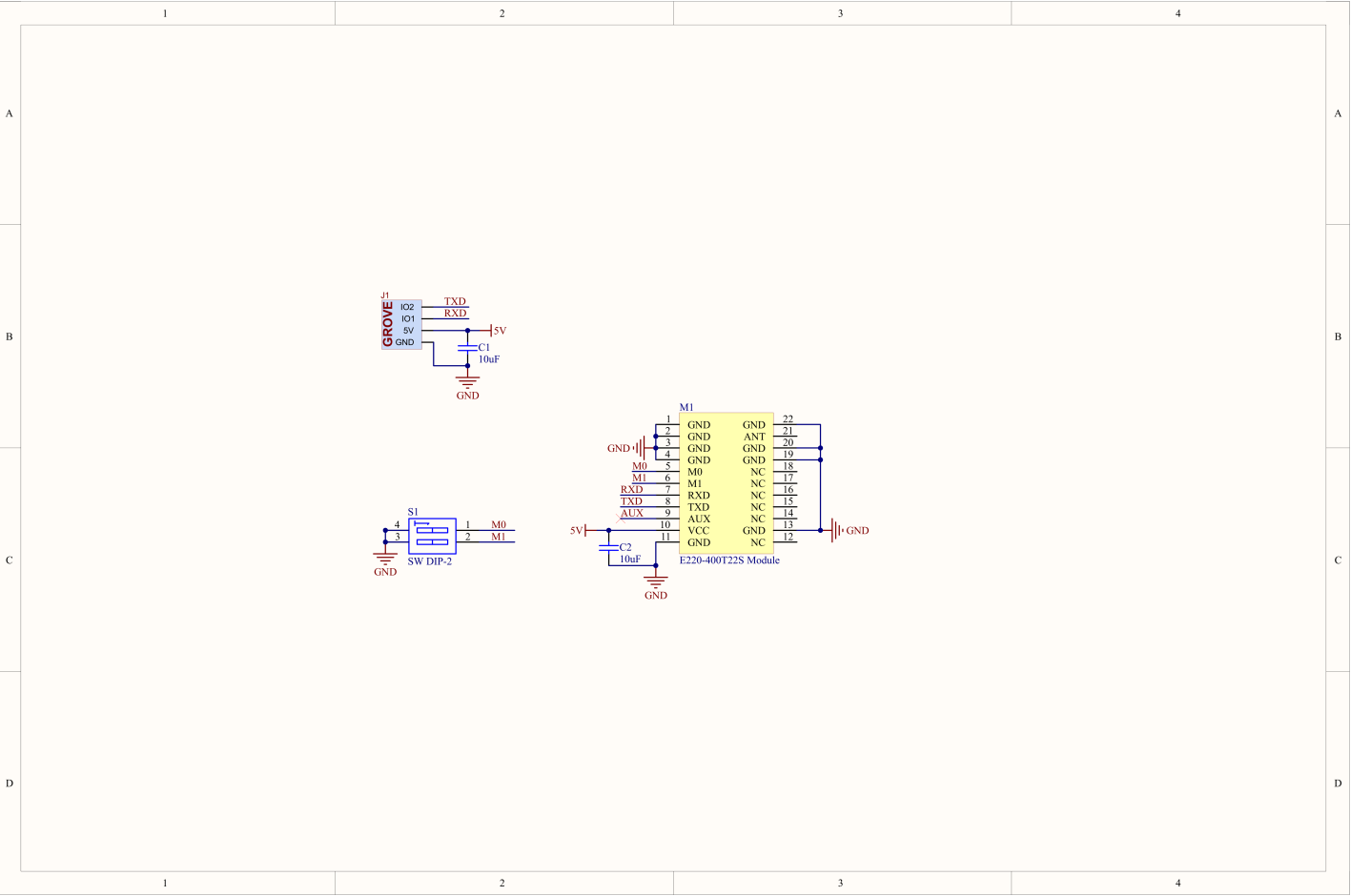
M0 M1
ON
1 2

Configuration
Mode

Due to the switch labeling, "ON" in the table above corresponds to state "0" in the datasheet, and "OFF" corresponds to state "1".

Note: Do not exceed the supply voltage of 5.5V, as exceeding this may permanently damage the module.

Schematics

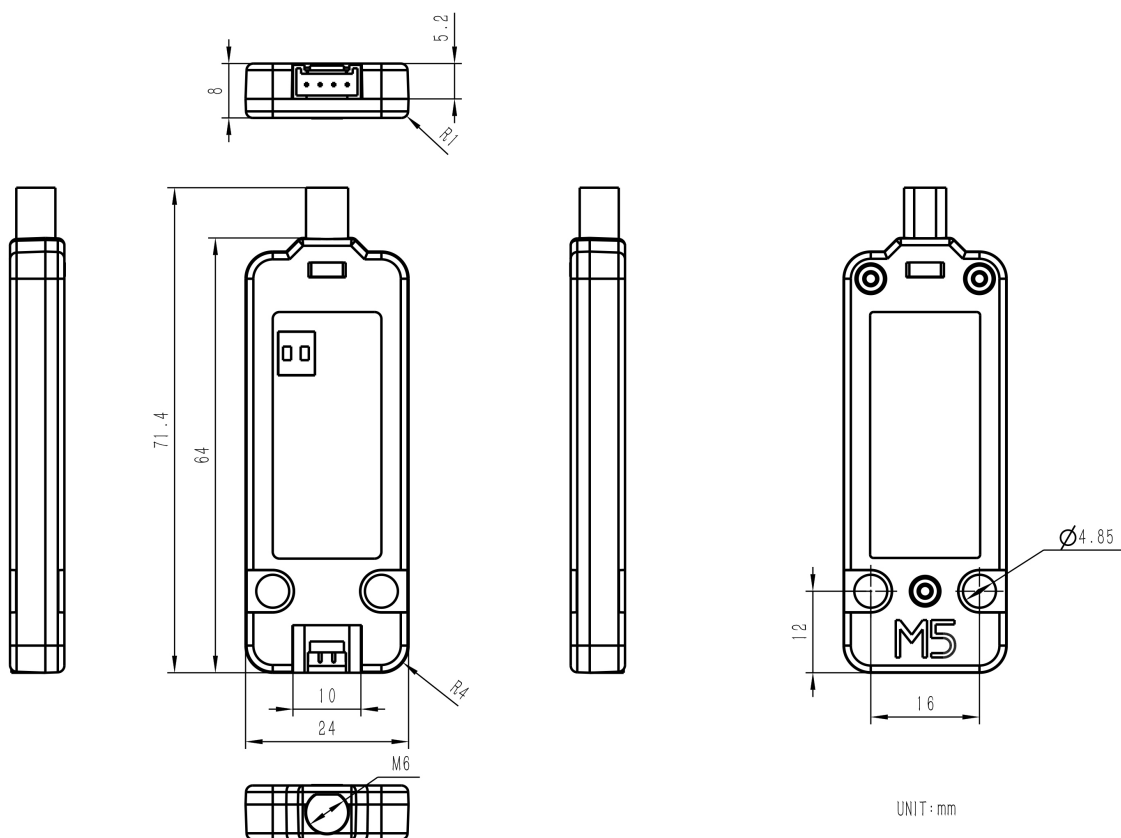


PinMap

Unit LoRaE220-433

HY2.0-4P	Black	Red	Yellow	White
PORT.C	GND	5V	UART_RX	UART_TX

Model Size



Datasheets

- [LORA Module_E220-400T22S](#)

Softwares

Arduino

- [Unit LoRaE220-433 Arduino Library](#)

UiFlow2

- [Unit LoRaE220-433 UiFlow2 Docs](#)

Video

[U170-433 LoRaE220-433 Unit 视频.mp4](#)

Product Comparison

LoRa Unit

Product Name	SKU	Chip Solution	Frequency	Max Transmit Power	Receive Sensitivity	Data Rate	Theoretical Range	Antenna Interface	Protocol Type
LoRaE220-433 Unit	U170-433	E220-400T22S@LLCC68	433 MHz	22 dBm	-129 dBm	2.4k-62.5 kbps	5 km	External rubber duck antenna	LoRa
LoRa-e220-JP unit	U170	E220-900T22S@LLCC68	920 MHz	13 dBm	-124 dBm	1.7k-62.5 kbps	5 km	External rubber duck antenna	LoRa

Product Name	SKU	Chip Solution	Frequency	Max Transmit Power	Receive Sensitivity	Data Rate	Theoretical Range	Antenna Interface	Protocol Type
LoRaWAN Unit 868MHz	U117	ASR6501@ SX1262	868 MHz	21 dBm	-136 dBm	0.3k-37.5 kbps	2-5 km	External rubber duck antenna	LoRaWAN
Unit LoRaWAN9 15	U115	ASR6501@ SX1262	915 MHz	21 dBm	-136 dBm	0.3k-37.5 kbps	2-5 km	External rubber duck antenna	LoRaWAN
Unit LoRaWAN4 70	U116	ASR6501@ SX1262	470 MHz	21 dBm	-136 dBm	0.3k-37.5 kbps	2-5 km	External rubber duck antenna	LoRaWAN

LoRa Module

Product Name	SKU	Chip Solution	Frequency	Max Transmit Power	Receive Sensitivity	Data Rate	Theoretical Range	Antenna Interface	Protocol Type
Module- LoRa868_V 1.1	M029-V11	Ra- 01H@SX12 76	868 MHz	19 dBm	-148 dBm	UP to 300 kbps	2-5 km	External rubber duck antenna	LoRa
Module- LoRa433_V 1.1	M005-V11	Ra- 02@SX127 8	433 MHz	18 dBm	-141 dBm	UP to 300 kbps	2-5 km	External rubber duck antenna	LoRa

Product Name	SKU	Chip Solution	Frequency	Max Transmit Power	Receive Sensitivity	Data Rate	Theoretical Range	Antenna Interface	Protocol Type
COM.LoRa WAN470	M031-C2	ASR6501@ SX1262	470 MHz	21 dBm	-136 dBm	0.3k-37.5 kbps	2-5 km	External rubber duck antenna	LoRaWAN
COM.LoRa WAN868 v2.0	M031-C4	ASR6501@ SX1262	868 MHz	21 dBm	-136 dBm	0.3k-37.5 kbps	2-5 km	External rubber duck antenna	LoRaWAN
COM.LoRa WAN915	M031-C3	ASR6501@ SX1262	915 MHz	21 dBm	-136 dBm	0.3k-37.5 kbps	2-5 km	External rubber duck antenna	LoRa/LoRa WAN

LoRa Atom DTU

Product Name	SKU	Chip Solution	Frequency	Max Transmit Power	Receive Sensitivity	Data Rate	Theoretical Range	Antenna Interface	Protocol Type
ATOM DTU LoRaWAN9 15	K061	ASR6501@ SX1262	915 MHz	21 dBm	-136 dBm	0.3k-37.5 kbps	2-5 km	External rubber duck antenna	LoRaWAN
ATOM DTU LoRaWAN8 68	K063	ASR6501@ SX1262	868 MHz	21 dBm	-136 dBm	0.3k-37.5 kbps	2-5 km	External rubber duck antenna	LoRaWAN
ATOM DTU LoRaWAN4 70	K062	ASR6501@ SX1262	470 MHz	21 dBm	-136 dBm	0.3k-37.5 kbps	2-5 km	External rubber duck antenna	LoRaWAN