



E220-xxxXBX-SC series evaluation kit  
user manual

New Package Compatible Sub-1G Wireless Module Kit





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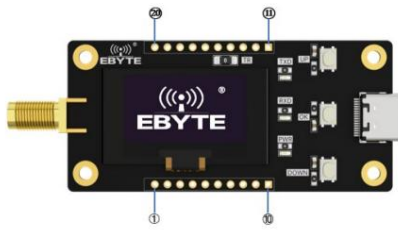
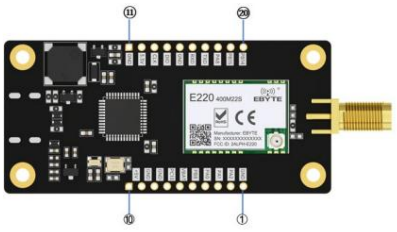
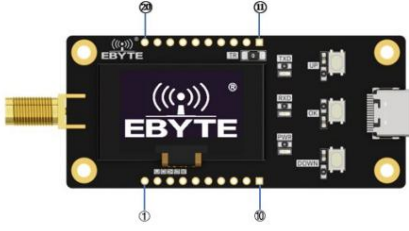
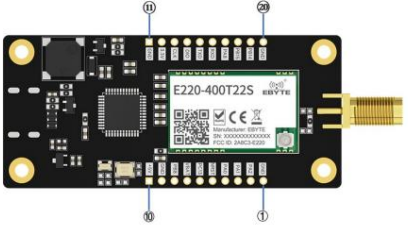
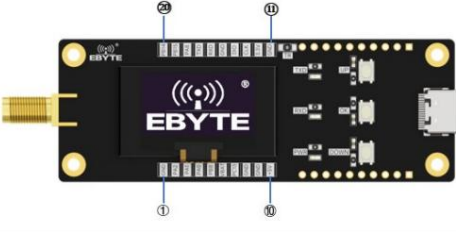
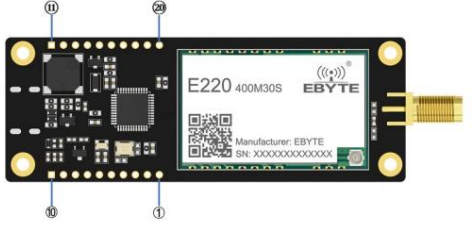
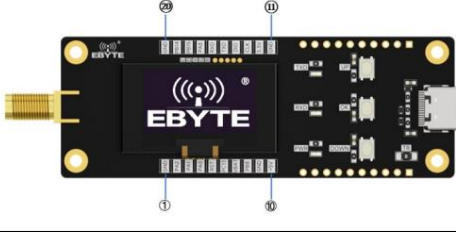
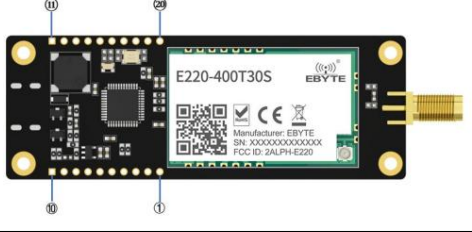
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# 1.1 Firefly

	Beauty	huang	shovel
	E220-xxxMBL-SC		
China's largest city in the world	E220-xxxTBL-SC		
	E220-xxxMBH-SC		
China's largest city in the world	E220-xxxTBH-SC		

### SC series evaluation kit designed to help users speed up evaluation

Since the two-way thread can be adjusted by the developer according to the actual needs, it can easily connect multiple external devices through the cable, which makes it easier for the developer to carry out secondary development.

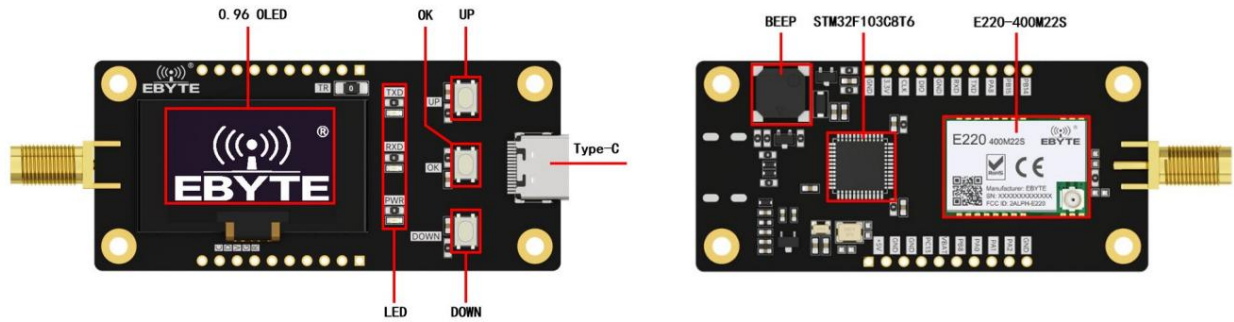
This kit provides complete software application examples, helping customers get started quickly with wireless data communication development. Can be loaded with different types of Sub-1G wireless networks according to customer needs.

The module that already supports the module has pin compatible packaging, and can be quickly replaced.

## 1.2 Firefly

Exx-xxxMBL/MBH-SC			Exx-xxxTBL/TBH-SC		
Yellow River		Yellow River	Yellow River		Yellow River
1	GND	Photo Gallery	1	GND	Photo Gallery
2	PA2	MCU_PA2	2	PA2	MCU_PA2
3	PA1	MCU_PA1	3	PA1	MCU_PA1
4	PA0	MCU_PA0	4	PA0	MCU_PA0
5	PB8	MCU_PB8 Plus	5	NRST	MCU Assembly
6	VBAT	MCU_VBAT	6	PC13	MCU_PC13 Package Contents
7	PC13	MCU_PC13 Package Contents	7	VBAT	MCU_VBAT
8	GND	Photo Gallery	8	PB8	MCU_PB8 Package Contents
9	GND	Photo Gallery	9	GND	Photo Gallery
10	+5V	5V power supply	10	+5V	5V power supply
11	GND	Photo Gallery	11	GND	Photo Gallery
12	3.3V	3.3V power backup	12	3.3V	3.3V power supply
13	CLK	S.W.C.L.K.	13	CLK	SWCLK
14	DIO	SWDIO	14	DIO	SWDIO
15	GND	Photo Gallery	15	TXD	MCU_TXD data output pin
16	RXD	MCU_RXD data input pin	16	RXD	MCU_RXD data input pin
17	TXD	MCU_TXD data output pin	17	PA8	MCU_PA8 Package Contents
18	PA8	MCU_PA8	18	PB15	MCU_PB15 Package Contents
19	PB15	MCU_PB15 Package Contents	19	PB14	MCU_PB14 Reference
20	PB14	MCU_PB14 Reference	20	GND	Photo Gallery

### 1.3 Ice Cream



Reference table top E220-400MBL-SC,SC series other models hardware functions are the same.

<b>huh</b>	0.96 OLED	Show current configuration test parameters and version information etc.
<b>huang</b>	UP/UP	Up key, up select or plus, support multiplexes when setting frequency and power
	OK	Confirm key, enter next page or exit last page
	↓/DOWN	Down key, select down or reduce, support multiple points when setting frequency and power.
<b>thailand</b>	TXD	Transmission indicator, flashes once when sent
	RXD	Receive indicator, flashes once when received
	PowerW	power indicator, power light
<b>thailand</b>	TR	Remove test resistance, enter current table test module current
<b>Green leaf</b>	BEEEP	China's first female soldier

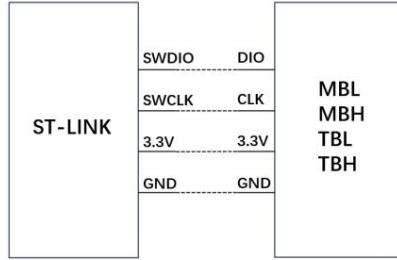
### 1.4 Ice age

Beautiful life of the house	Blue			huang
	MBL-SC	TBL-SC	MBH-SC TBH-SC	
1 test board size 30*64mm	30*68mm	2 production	30*85mm	
process 3 antenna	Beautiful life, Beautiful life			Guaranteed batch consistency and reliability
interface 3 power	SMA			
interface	Type-C			USB Type-C
4 Big Tits	3.3V~5.5V			Recommended use of rechargeable power supply for battery testing and evaluation
5 Lifestyle	-40 ~ +85°			
6 Lifestyle	10%~90%			
7 Redhead	-40 ~ +125°			

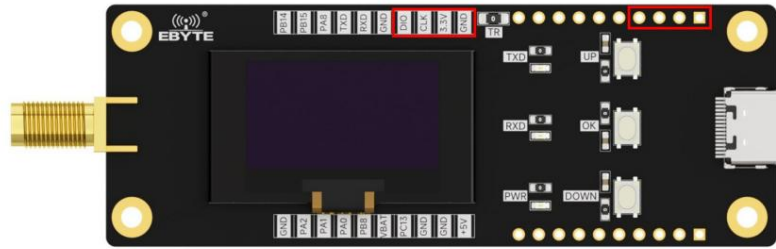
## 1.5 Lifestyle

Beautiful view of the house	SPI	1	E22-400M22S	E22-400/900MBL-SC
		2	E22-900M22S	
		3	E32-400M20S	E32-400/900MBL-SC
		4	E32-900M20S	
		5	E220-400M22S	E220-400/900MBL-SC
		6	E220-900M22S	
	USB Type-C	7	E22-400T22S	E22-400/900TBL-SC
		8	E22-900T22S	
		9	E32-433T20S	E32-433/900TBL-SC
		10	E32-900T20S	
		11	E220-400T22S	E220-400/900TBL-SC
		12	E220-900T22S	
Ice Cream Sandwich	SPI	13	E22-400M30S	E22-400/900MBH-SC
		14	E22-900M30S	
		15	E32-400M30S	E32-400/900MBH-SC
		16	E32-900M30S	
		17	E220-400M30S	E220-400/900MBH-SC
		18	E220-900M30S	
	USB Type-C	19	E22-400T30S	E22-400/900TBH-SC
		20	E22-900T30S	
		21	E32-433T30S	E32-433/900TBH-SC
		22	E32-900T30S	
		23	E220-400T30S	E220-400/900TBH-SC
		24	E220-900T30S	

### 1.6 Home Remedy



M series: E22-400MBH-SC



T series: E22-400TBL-SC



Via ST-LINK y MCU yyyyyyyyyy yyyyy



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## 2.1 Ice Cream

### 2.1.1 STM32CubeMX

Download free v6.9.2

MX About

**STM32CubeMX**

Version 6.9.2  
<https://www.st.com/stm32cubemx>  
 Copyright (c) 2010-2024 STMicroelectronics

life.augmented

STM32 Cube

STM32 firmware version 1.8.5

Embedded Software Packages Manager

STM32Cube MCU Packages and embedded software packs releases

Releases Information was last refreshed less than one hour ago.

RealThread	RoweBots	SEGGER	WES	emotas	portGmbH	wolfSSL
STM32Cube MCU Packages		STMicroelectronics		Cesanta	EmbeddedOffice	Infineon
Description	Installed Version	Available Version				
STM32F1						
STM32Cube MCU Package for STM32F1 Series	1.8.5	1.8.5				
STM32Cube MCU Package for STM32F1 Series (Size : 160.4 MB)		1.8.4				

Details

Patch Release

**STM32CubeF1 Firmware Package V1.8.5 / 07-April-2023**

Main Changes

- Patch release to fix known defects and enhancements implementation.
- All source files: updates disclaimer to add reference to the new license agreement.

### 2.1.2 MDK-ARM

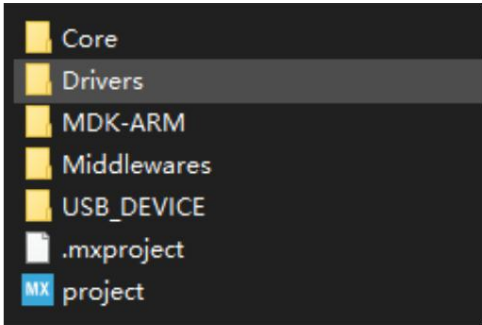
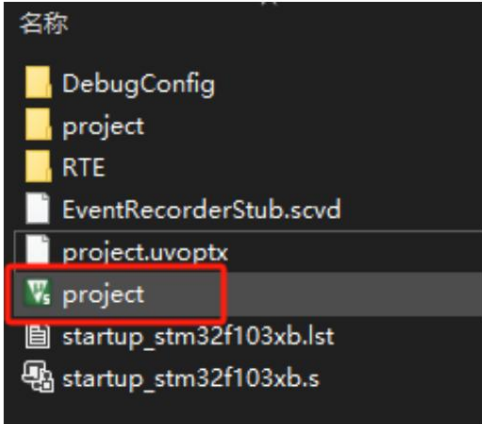
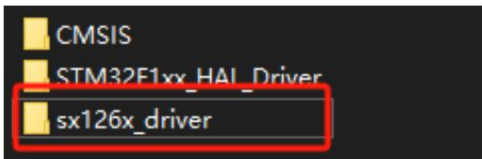
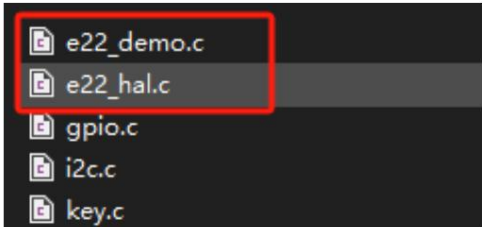
Keil 5.31.0

About µVision

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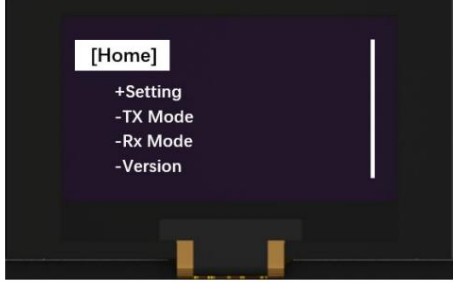
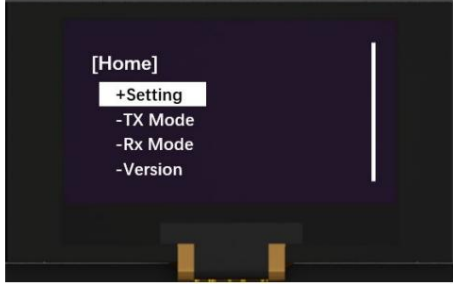




## 2.2 Ice age

	ÿÿ	shovel
1.	The file directory can be downloaded from the website to the example project, open the directory as shown below	
2	City Light	
3	City Lightning	<p>Drivers folder Compatible with compatible chip drivers sx126x/sx127x/llcc68</p> 
4	Snow Cupid	<p>Core/Src folder with corresponding exx_demo example</p> 




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3.1 Breaking news

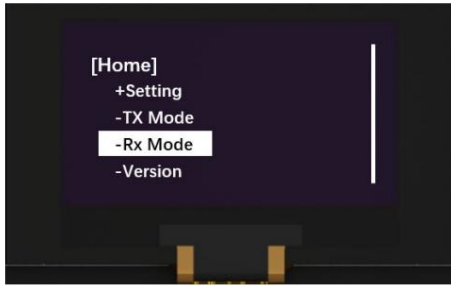

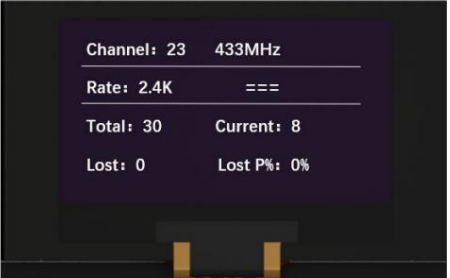
ÿÿ	
1 stone	<p>DescriptionAfter power on default enter home page, all configuration parameters restore default state.</p> 
2 Forest	<p>By clicking the Entity Validation button, you can enter the corresponding options page.</p> 
3 City of Heaven	<p>M series setting page contains multiple LoRa parameters, can be adjusted according to needs, air speed calculation is recommended Use Semtech official LoRa calculation tool.</p> <p>The only difference between T series and M series is that the air speed configuration method is different.</p> <p>After configuration, select [Exit] and confirm. Return to top page</p>  <p>M The owner of the house is:</p>  <p>T The owner of the building is:</p>  <p>Color:</p>

		M			T		
LoRa SF	Green leaf	Air speed combination SFyBW5CR forward Lightning.			Work Mode Work	Mode Select	Module Work Mode
LoRa-BW	China's first swan				Rate Mode Select	Rate Mode	SkySpeed
LoRa-CR	yuki	Channel Working	Channel Select	Channel			
Frequency Working	frequency select	frequency point	TX Power Transmit	Power Configuration	Transmit Power		
TX-Power	transmit power configuration transmit power			TX Count Send	Number Configuration	Send Number	
TX Count	send count	configuration send count	Back Color Background	color yy	Screen background color		
Back Color Background	color yy	Screen background color					

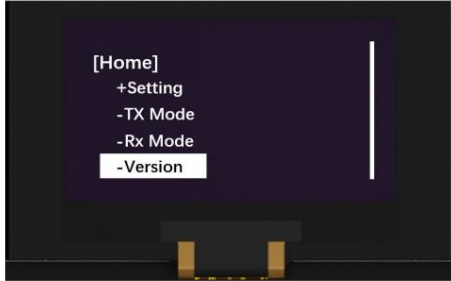
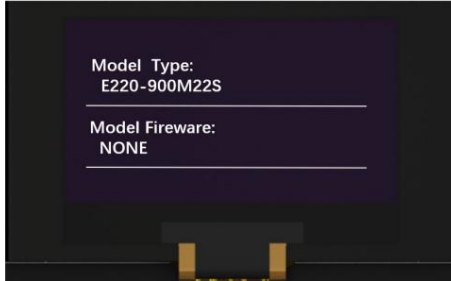
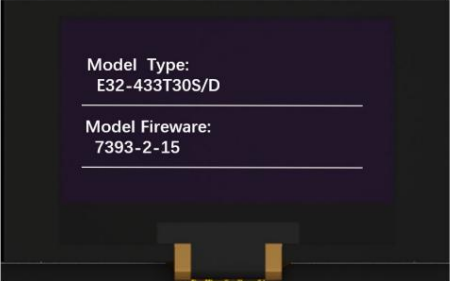
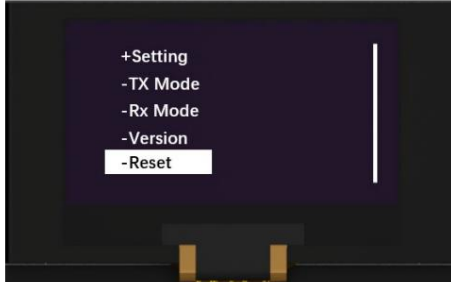

  

4	Anglina Jolie	<p>Tx Mode automatically starts after entering sending data package according to user setting parameters(default single package 10 bytes).</p> <p>Press "confirm" button on the page and then exit and return to the top page</p> <p>After sending is complete, press "Down" button to open sending again.</p>  <p>M series TX send interface as follows:</p>  <p>T series TX send interface as follows:</p> 
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5	squirrel	<p>After entering Rx Mode, automatically start according to user setting parameters, wait to receive wireless data.</p> <p>Press "confirm" button on the page and then exit and return to the top page</p> <p>After sending, press "DOWN" button to start receiving again.</p>  <p>M series RX receiving interface as follows:</p>  <p>T series RX receiving interface as follows:</p> 
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<p>6 Show Cupid</p>		<p>Display basic information such as model model, M series module without internal firmware, then display NONE</p>  <p>M series version information interface as follows:</p>  <p>T series version information interface as follows:</p> 
<p>7 swan</p>		<p>Select Reset, OK to confirm, reset settings and return to home page.</p>  



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### 4.1 Anti-corruption protection system

• When there is straight line communication obstruction, the communication distance will be correspondingly reduced.

• Temperature, humidity, same frequency interference, will lead to increased data packet loss rate.

• Ground absorption/ reflection radio wave, near the ground the test effect is poor.

• Sea water has extremely strong absorption radio wave ability, hence the seashore testing effect.

• If there is a metal object near the antenna, or placed inside a metal case, the signal attenuation may be very serious.

• Power register setting error/ air speed setting/ air speed setting/

• Low power supply voltage is lower than the recommended value at room temperature, voltage is low, power is low, power is low.

• The matching degree of the antenna and module is poor or the quality of the antenna itself is problematic.

### 4.2 Watermelon Seed

• Please check the power supply, ensure it is within the recommended power supply voltage, if exceeding the maximum value may cause permanent damage to the module.

• Please check power stability, voltage cannot fluctuate frequently.

• Please ensure that the installation process uses anti-static operation, high-frequency device is sensitive to static electricity.

• Please ensure that the humidity during installation and use is not high, some components are moisture sensitive devices.

• If there are no special requirements, it is not recommended to use at high or low temperatures.

### 4.3 Redhead

• Nearby there are similar frequency signal interference, away from interference or modified frequency, channel interference.

• If the power supply is not ideal, it may cause some code, so as to ensure the reliability of the power supply.

• Extension line, feed line quality difference or too long, will also cause high error code rate.

Natural beauty

green	firecracker	Home > Products >	green light
1.0	2024-9-2	Cosmetics > Cosmetics > Cosmetics	Lei

Yellow River



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