E105-BS21 Development kit User Manual



Chengdu Ebyte Electronic Technology Co.,Ltd.

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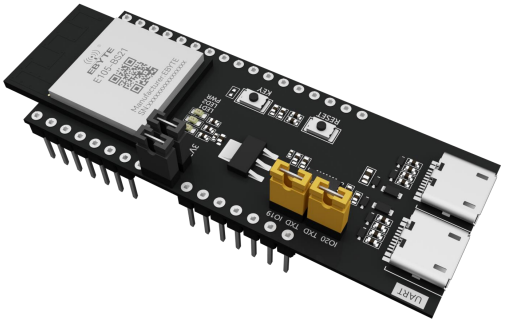
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1. Module introduction

1.1 Features



E105-BS21-TB and E105-BS21X-TB are two entry-level development boards equipped with star flash modules E105-BS21 and E105-BS21X. This development board has a complete star flashing function, and most of the pins on the module have been led out to the two side pins. Developers can easily connect various peripheral devices through jumpers according to actual needs, and the development board can also be plugged into a breadboard for use.

1.2 Parameters

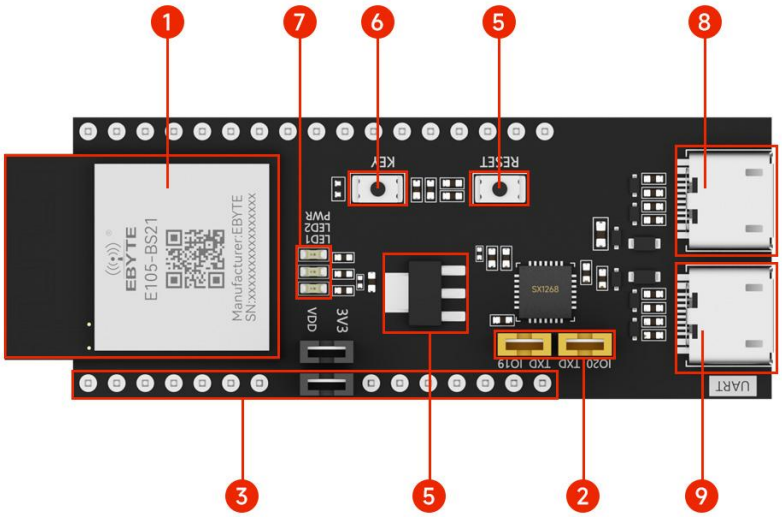
NO.	Name	Value	Remarks
1	Support modules	E105-BS21&E105-BS21X	Star Flashing Module
2	Module size	62.74 * 25.4mm	Including USB connector
3	Production process	Lead free, SMT	To ensure batch consistency and reliability
4	Power supply interface	USB	-
5	Communication interface	UART	-
6	Working temperature	-40 ~ +85℃	Industrial grade
7	Working humidity	10% ~ 90%	Relative humidity, no condensation
8	Storage temperature	-40 ~ +125℃	Industrial grade

2. Function description

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2.1 Components description



Main components

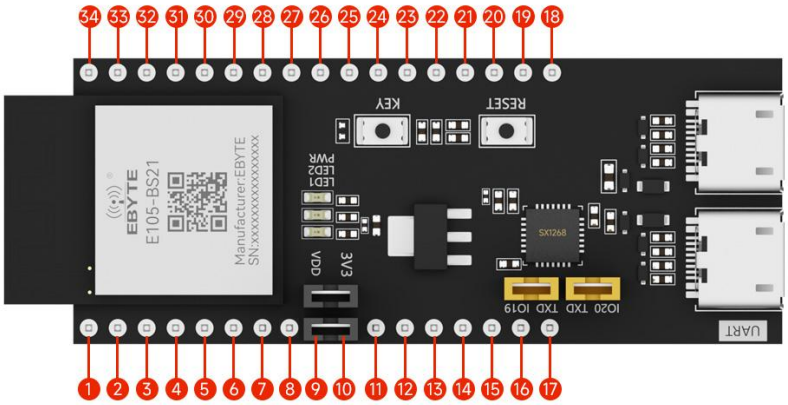
NO.	Main parts	Description
1	E105-BS21&E105-BS21X	E105-BS21 and E105-BS21X are serial to SLE (SparkLink Low Energy) star flash modules based on the Star Flash Protocol 1.0 version. They have the characteristics of small size, low power consumption, long transmission distance, fast transmission speed, strong anti-interference ability, and low latency. They operate in the 2.4GHz frequency band with a maximum RF transmission power of 6dBm.
2	Short circuiting device	Receive and send short-circuit connectors
3	Pin	All available GPIO pins (except for the SPI bus of flash) have been connected to the pin bank of the development board. Please refer to the pin definition for more information.
4	Short circuiting device	Module 3.3V power supply short-circuit device.
5	Reset button	Reset button.
6	KEY button	Normal buttons (not yet open for use).
7	RGB lights	From left to right, it is LED1, LED2 as the data status indicator light, and PWR is the power indicator light.
8	USB interface	The USB interface can be used as a power interface for the development board and can communicate with the chip through the USB protocol.
9	USB to UART interface	Micro USB interface can be used as a power supply interface for development boards, can burn firmware to chips, and can also serve as a communication interface, communicating with chips through an onboard USB to UART bridge.

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2.2 Pin definition

Check front side of E105-BS21-TB&E105-BS21X-TB below,



Current test interface diagram

NO.	Name	Type	Purpose
1	GPIO26	I/0	GPIO
2	GPIO25	I/0	GPIO
3	GPIO27	I/0	GPIO
4	GPIO28	I/0	GPIO
5	GPIO29	I/0	GPIO
6	GPIO30	I/0	GPIO
7	GPIO31	I/0	GPIO
8	GPIO2	I/0	GPIO
9	GND		Module GND
10	VDD		Input 1.8V~3.6V
11	GPIO3	I/0	GPIO
12	GPIO4	I/0	GPIO
13	GPIO5	I/0	GPIO
14	GPIO6	I/0	GPIO
15	GPIO9	I/0	GPIO
16	GPIO10	I/0	GPIO
17	GPIO11	I/0	GPIO
18	USB-		USB negative
19	USB+		USB positive
20	GPIO12	I/0	GPIO
21	GPIO13	I/0	GPIO
22	GPIO14	I/0	GPIO

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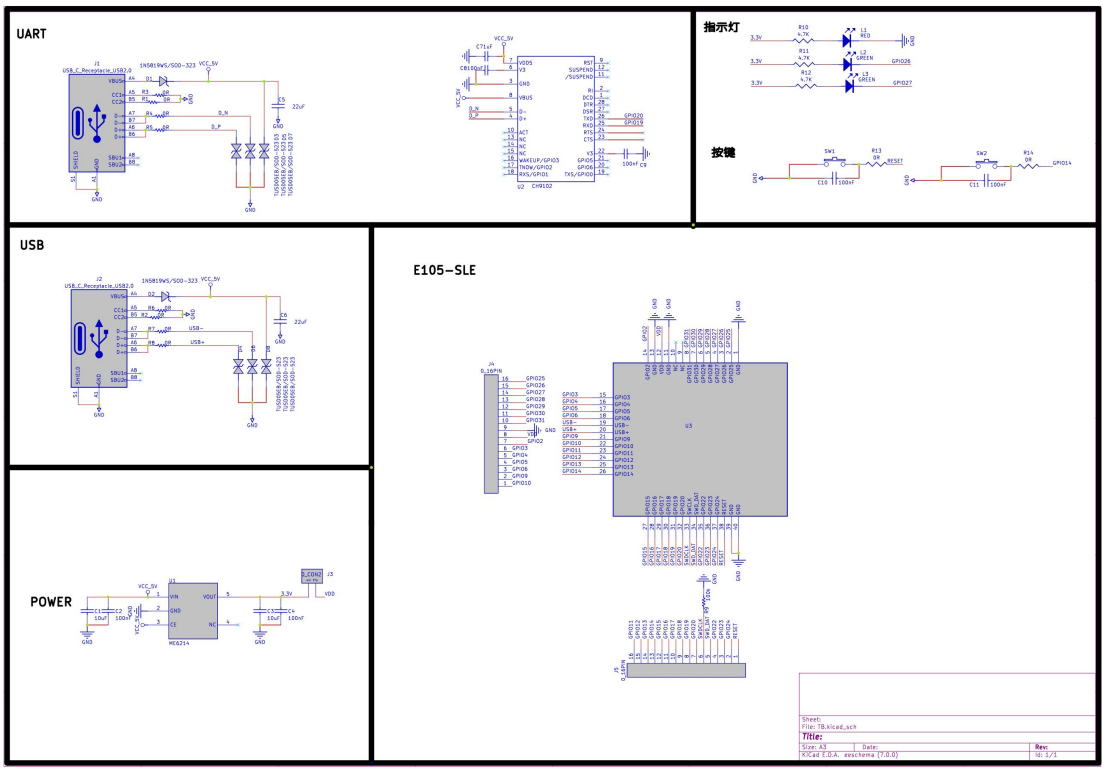
23	GPIO15	I/0	GPIO
24	GPIO16	I/0	GPIO
25	GPIO17	I/0	GPIO
26	GPIO18	I/0	GPIO
27	GPIO19	I/0	Communication serial RXD
28	GPIO20	I/0	Communication serial TXD
29	SWCLK		Debugging pin
30	SWDIO		Debugging pin
31	GPIO22	I/0	GPIO
32	GPIO23	I/0	GPIO
33	GPIO24	I/0	GPIO
34	RESET	I	Reset pin, cannot be suspended, pull down for 10ms to reset, can be used for deep sleep wake-up

Note：1.P：power；I：input；O：output；T：can be set as high resistance

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2.3 Design Schematic



3. Version

Version	Date	Description	Maintained by
1.0	2024-9-11	First version	Hao

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