

# USR-BLE100 Hardware Manual

File Version: V1.0



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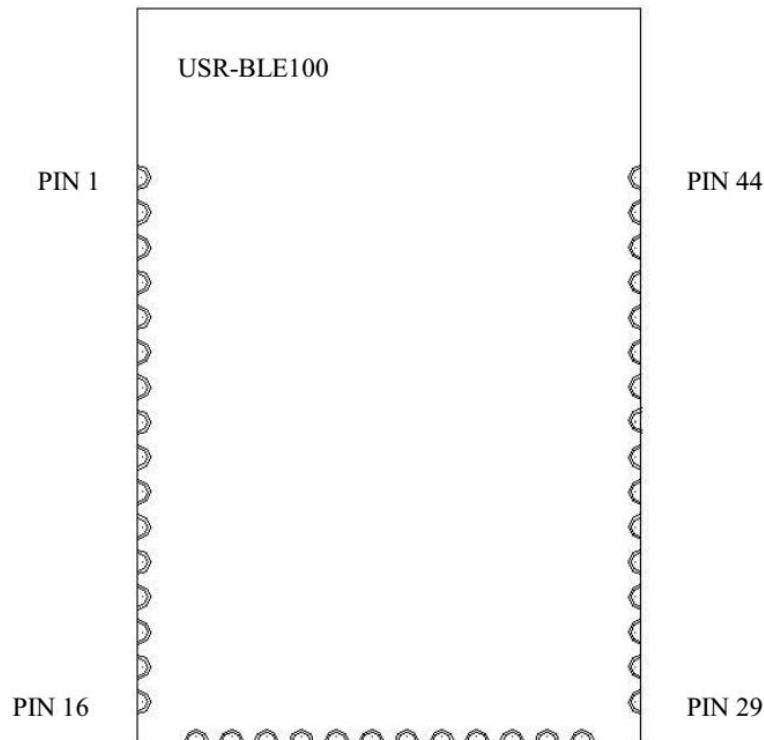
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# 1. Product Overview

## 1.1. Brief Introduction

USR-BLE100 is an ultra-low power v4.1 Bluetooth module, which supports standard bluetooth BLE protocol. This module support master and slave, user not only can use both master and salve for transparent transmission, also can make wireless data transmission to the traditional low-end serial device and the device controlled by MCU.

## 1.2. Pin Defination



Pin	Name	Signal Type	Defination
1	GND	P	Power Ground
2	RF	O	RF signal output
3	NC	N	Not connect
4	Reset	I	Reset, take affect in "0"
5	GPIO1	O	GPIO1
6	GPIO2	O	GPIO2
7	GPIO3	O	GPIO3

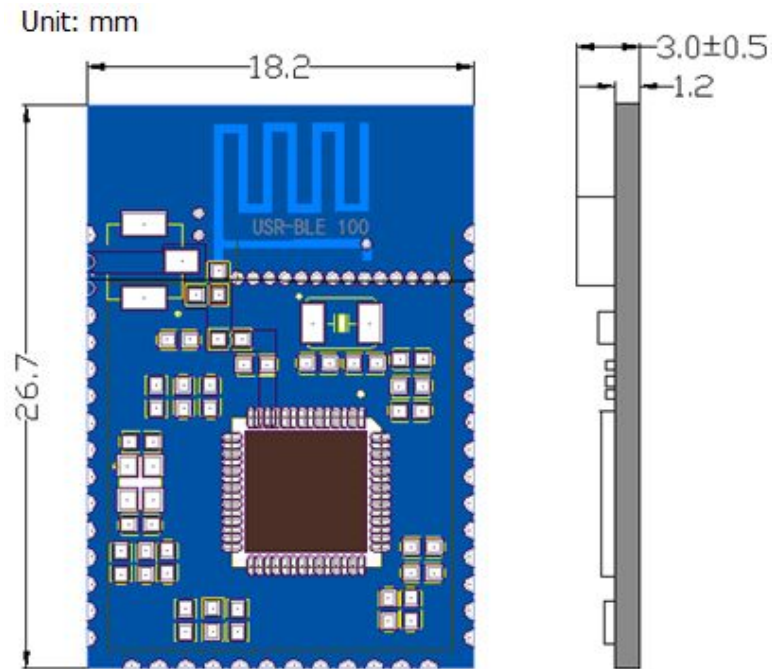
8	NC	N	Not connect
9	I2C_SDA	O	I2C Data Pin
10	I2C_SCL	O	I2C Clock Pin
11	GND	P	Power Ground
12	GND	P	Power Ground
13	VCC	P	Power VCC, positive, range from 1.9v~5.5v
14	VCC	P	Power VCC, positive, range from 1.9v~5.5v
15	GPIO8	N	GPIO8
16	NC	N	Not connect
17	GND	P	Power Ground
18	PWM1	O	PWM Output Pin 1
19	UART0_TX	O	UART0 transmit
20	UART0_RX	O	UART0 receive
21	nReload	I	Reload to default settings for 1s Reload to factory defaults for above 3s
22	AD	O	AD collection
23	LED	O	Indicator light
24	UART0_CTS	O	UART0 CTS signal
25	UART0_RTS	O	UART0 RTS signal
26	SWDATA	O	Burn Data
27	SWCLK	O	Burn Clock
28	GND	P	Power Ground
29	GND	P	Power Ground
30	UART1_TX	O	UART1 transmit
31	UART1_RX	O	UART1 receive
32	PWM2	O	PWM output 2
33	SPI_SS1	I	SPI send request
34	SPI_SCLK	I	SPI clock
35	SPI_MISO	I	SPI MISO function
36	SPI_MOSI	I	SPI MOSI function
37	SPI_SS0	I	SPI chip selection
38	Wake_Up	I	Wake up
39	UART1_CTS	O	UART1 CTS signal
40	USRT1_RTS	O	UART1 RTS signal
41	NC	N	Not connect
42	NC	N	Not connect
43	NC	N	Not connect
44	GND	P	Power Ground

**<Note>**

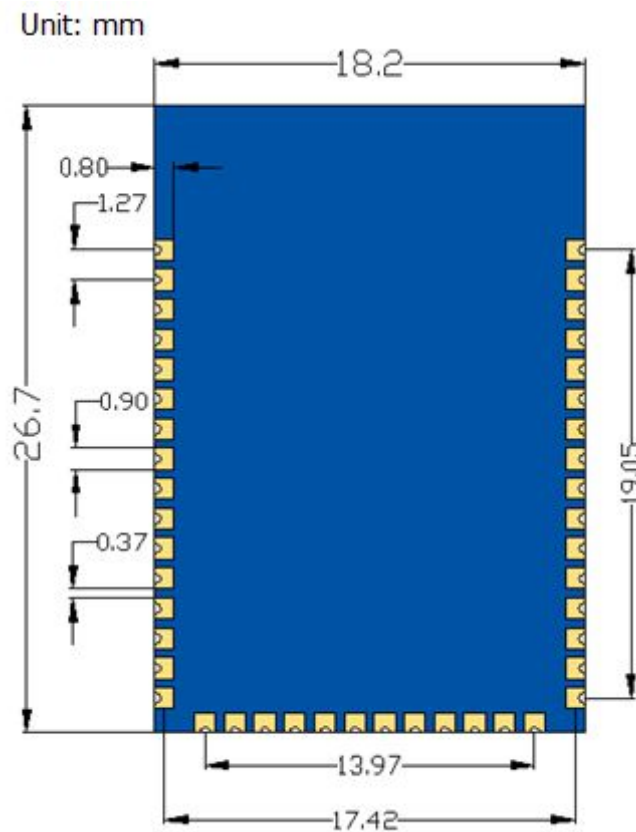
The module minimum system recommend to use: PIN VCC, GND, UART0\_TX, UART0\_RX, LED, Reset, Reload, Wake\_Up.

### 1.3. Dimensions

Module size: 18.2\*26.7\*2.8mm, error±0.2mm, pin size as follows:

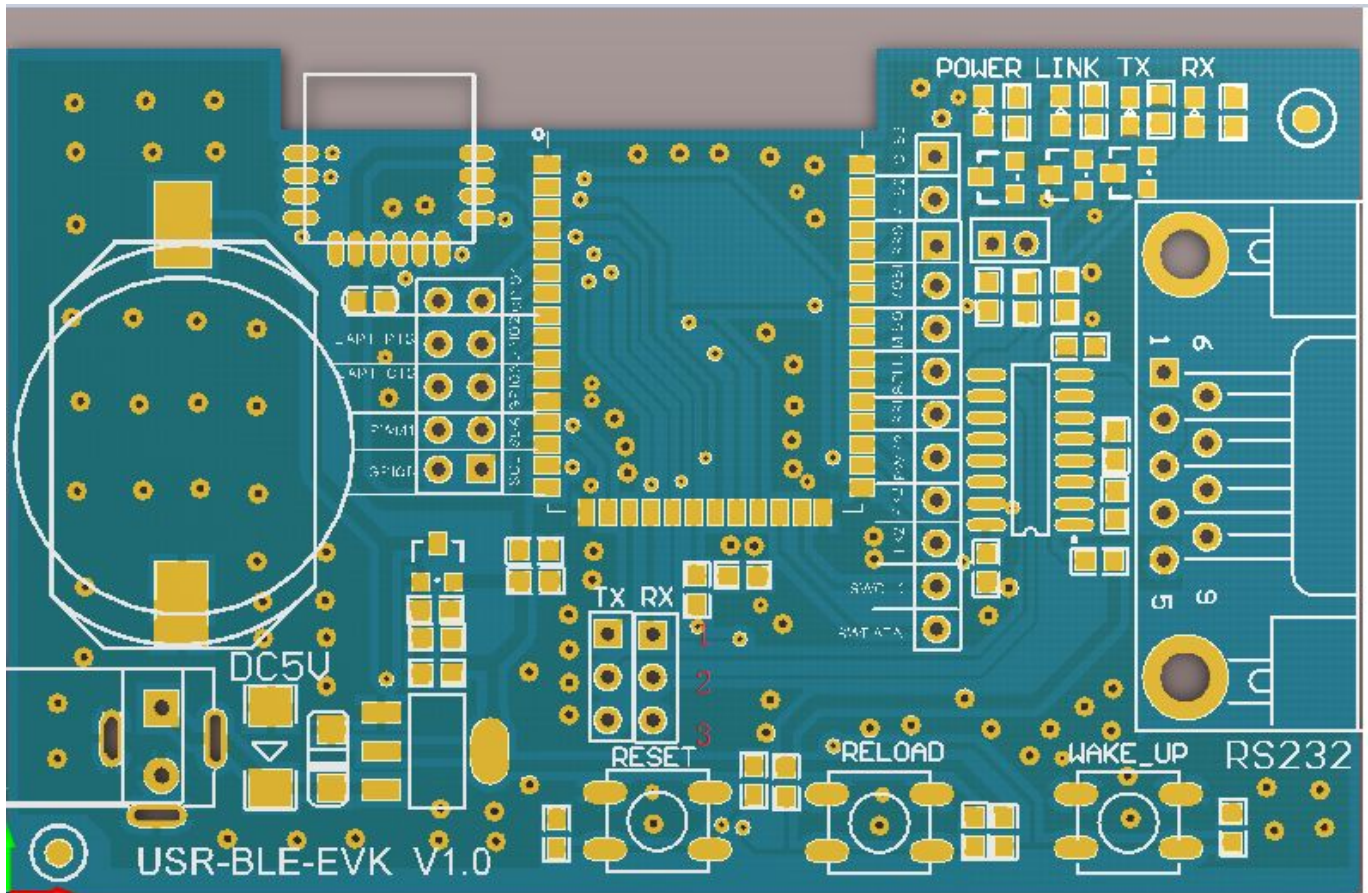


### 1.4. Encapsulation Size



## 1.5. Evaluation Kit

USR Team also supply evaluation kit for user development, see below image:

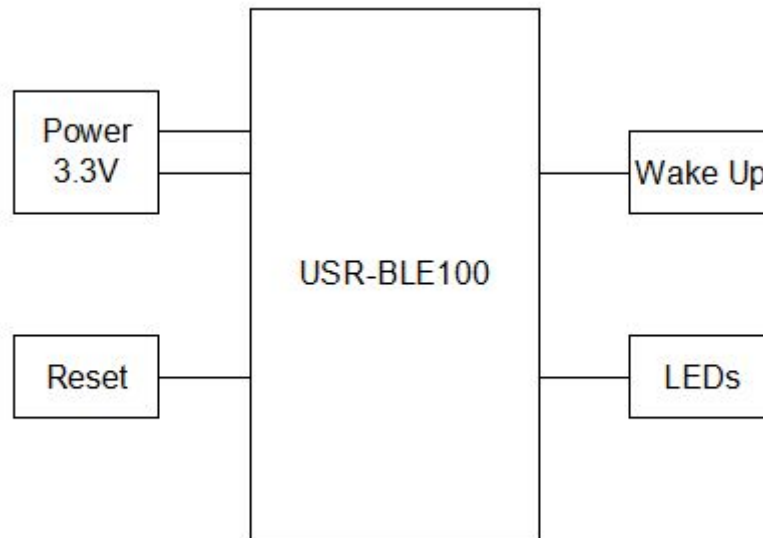


This kit is used for USR-BLE100 and USR-BLE101, with RS232 interface. For USR-BLE100, need to connect the jumper to 1 and 2.

Function	Name	Description
Outer interface	DC Jack	5V power input
	DB9	9 pin female interface
	Battery holder	2032 battery holder
LED	Power	3.3V power
	LINK	Link
	TX	UART0 transmit
	RX	USRT0 receive
Button	RESET	Reset
	RELOAD	Reload
	WAKE_UP	Wake up

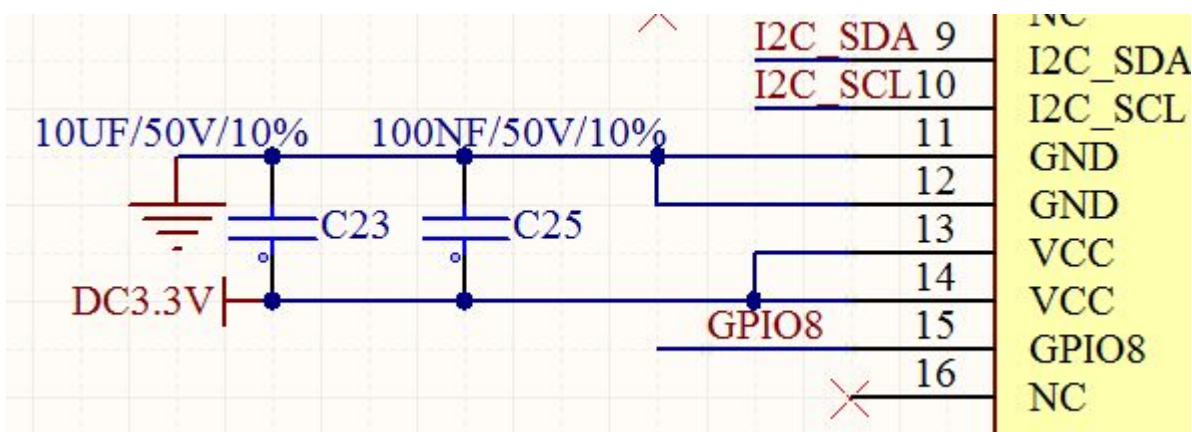
## 2. Hardware Reference Design

### 2.1. Typical Application Connection



### 2.2. Power Interface

Switching power supply recommended. Working voltage VCC range from 1.9V~5.5V, 3.3V recommended. With main power pin to power the module, pin interface in parallel appropriate storage capacitance and high frequency capacitance. Circuit diagram as follows:



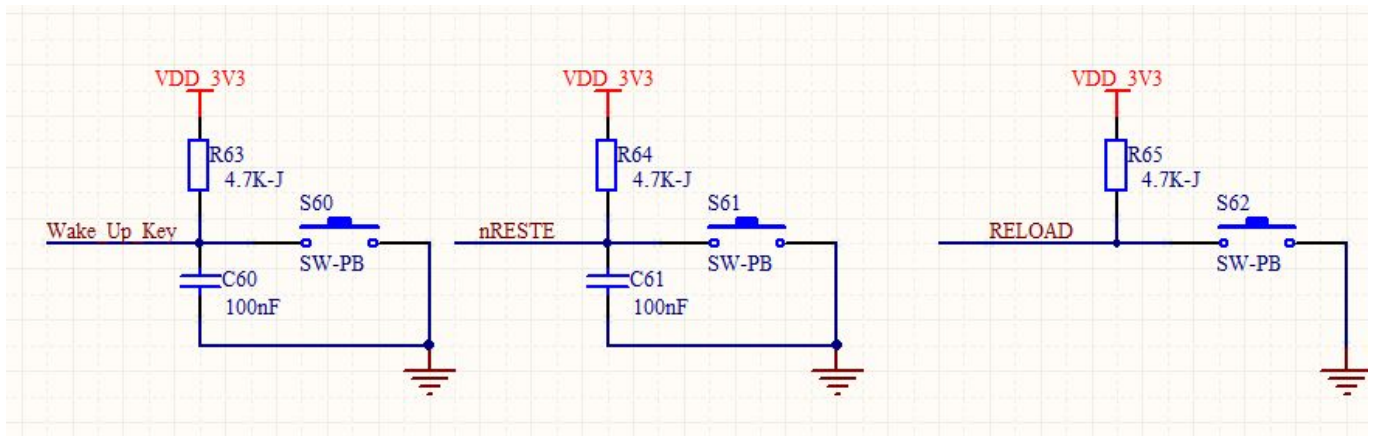
## 2.3. Reset, Reload and Wake up

Module support hardware reset function. nReload pin can connect to outer button or setup pin. When press the button, pull down to “0”, release after 3s, module will reload to factory defaults and restart.

nReset: Module reset signal, take affect in “0”. There is 100K resistor pull up to 3.3V. When module power on or break down, MCU will reset the module, pull down as least 0.5s, then pull up or vacant.

Wake\_Up Key: Can connect to outer button or setup pin. When press the button or pull down to “0”, release after 3s, module will wake up to noamal work mode.

Schematic diagram as follows:





### 3. Contact US

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### 4. Disclaimer

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### 5. Update History

2016-01-05 V1.0 Establish