ES301 DVK User Guide

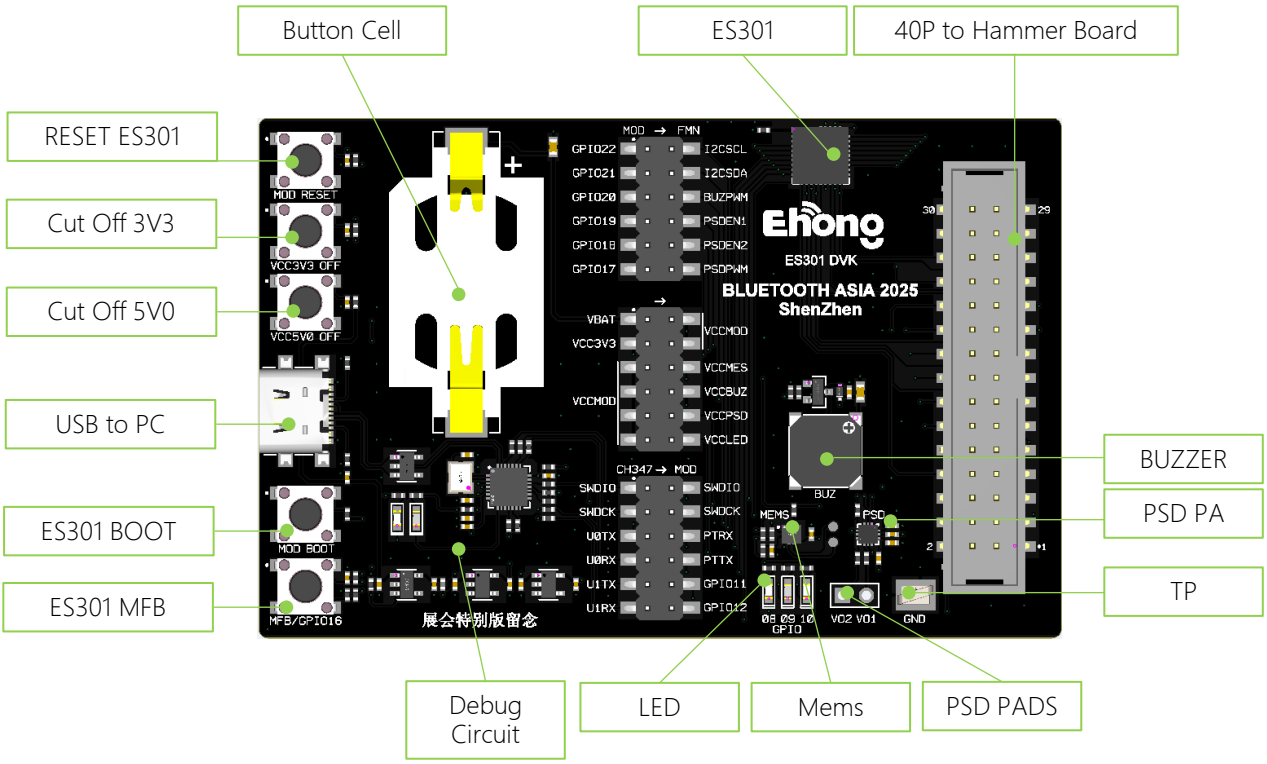
ES301 DVK is a multi-functional development board based on the ES301 Bluetooth LE chip, which has the following features:

- Integrated buzzer, buzzer drive, motion sensor, LED, coin cell battery holder.
- Standard USB TYPE C port connects to a PC for power supply and data transfer.
- Built-in one USB to SWD and two USB to UART interfaces.
- A 2.54MM pitch jumper cap is reserved on the signal line to facilitate current testing and user-defined debugging.
- Reserve a variety of function buttons to facilitate user debugging.
- Integrated support for Ehong Hammer production test system proprietary interfaces.

- Refer to the ES301 specification for more information.

Top View

Bottom View

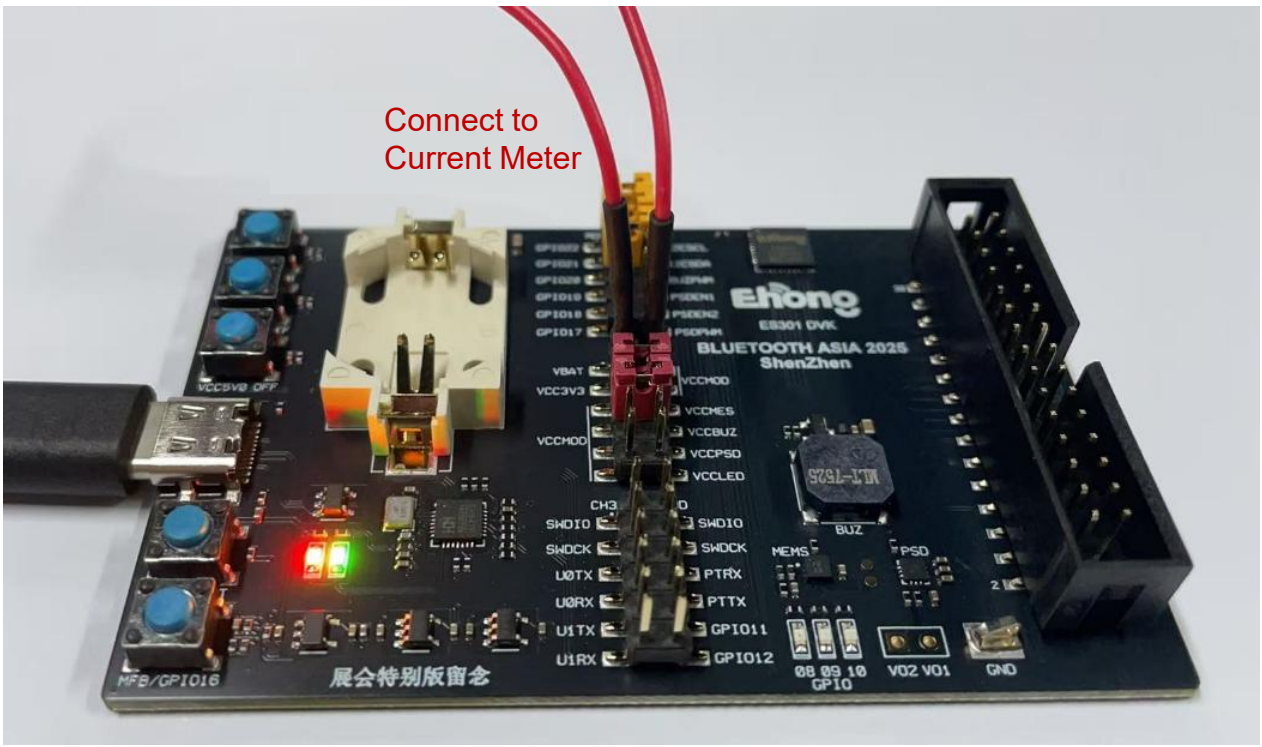


ES301 EVK Signals	
GPIO22 – I2CSCL	ES301 GPIO22 – MEMS I2CSCL
GPIO21 – I2CSDA	ES301 GPIO22 – MEMS I2CSDA
GPIO20 - BUZPWM	ES301 GPIO22 – BUZZER PWM
GPIO19 – PSDEN1	ES301 GPIO19 – PSD PA EN1
GPIO18 – PSDEN2	ES301 GPIO18 – PSD PA EN2
GPIO17 - PSDPWM	ES301 GPIO17 – PSD PA PWM
VBAT	CR2032 HOLDER
VCCMOD	ES301 Power
SWDIO	CH347 SWDIO – ES301 SWDIO Driver Not Ready
SWDCK	CH347 SWDCK – ES301 SWDCK Driver Not Ready
U0TX - PTRX	CH347 UART0 TX – ES301 PTRX
U0RX - PTTX	CH347 UART0 RX – ES301 PTTX
U1TX – GPIO11	CH347 UART1 TX – ES301 GPIO11
U1RX – GPIO12	CH347 UART1 RX – ES301 GPIO12

注:
1. Yellow Jumpers are used for ES301 data signals connection.
2. Red Jumpers are used for ES301 power supply connection.
3. Green Jumpers are used for ES301 debug signals connection.
4. VBAT-VCCMOD or VCC3V3-VCCMOD, DO NOT connected at the same time.

How to use DVK for current consumption measurement.

1. Program an available firmware from Ehong to DVK.
2. Remove Jumpers on GPIO17, 18, 19, VCCPSD, VCCLED and all green jumpers to avoid current leakage.
3. Remove jumper VCC3V3-VCCMOD，use a current meter to do the measurement.



Work Mode	Description		Peak（mA）
Active (RF Working)	RX		3.4mA
	TX	TX Power：-20dBm	3.6mA
		TX Power：0dBm	4.2mA
		TX Power：+4dBm	5.5mA
		TX Power：+7.5dBm	8.5mA
	Beacon	Adv_interval：1S，23Bytes，0dBm	10uA

Power Mode	32kHz RCOSC	Retention SRAM	Wake-up	Current Consumption (Typical)
Power Down	Off	Off	Wake-up by GPIO	0.6uA
Sleep Mode	On	16KB RAM	Wake-up by GPIO, Timer	1.2uA
	On	80KB RAM	Wake-up by GPIO, Timer	1.7uA