



Telink

Telink TL3218X-EVK64D

User Manual

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Keyword

Feature; 2.4GHz; User manual

Brief

**This is a user manual for Telink
TL3218X-EVK64D**



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Revision History

Version	Change Description
v0.1.0	Initial release.

Internal Only



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1. Product Introduction

This is a user manual for Telink **TL3218X-EVK64D.**

1.1 General description

The Telink **TL3218X-EVK64D, which is based on Telink **TL3218** chip.**

The **TL3218 is a single chip SoC for Bluetooth low energy, The **TL3218** supports standards and industrial alliance specifications including Bluetooth LE, The **TL3218** combines the features and functions needed for high quality wireless IoT equipments into a single System on Chip.**

1.2 Key features

1.2.1 RF Features

**1. Bluetooth in worldwide
2.4 GHz ISM band**

2. Bluetooth LE 1 Mbps and 2 Mbps,

**3. Bluetooth High Accuracy Distance Measurement (AKA
Channel Sounding) pre-standard version**

4. Bluetooth LE AoA/AoD location features

**5. Rx Sensitivity: -97 dBm @ Bluetooth LE 1 Mbps, -94 dBm @
Bluetooth LE 2 Mbps mode, -104.5 dBm @**

**Long Range 125 kbps, -99 dBm @ Long Range 500 kbps; -
103 dBm @ 802.15.4**

6. TX output power: up to +10dBm @ GFSK modulation

7. 50 Ω matched single-pin antenna input

8. RSSI monitoring with +/-1dB resolution

9. Auto acknowledgment, retransmission and flow control

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10. Supports PTA (Packet Traffic Arbitrator) for Wi-Fi co-existence

1.2.2 Power Management Features

Features of power management module include:

1. Power supply

- **VDD (battery): 1.8 V ~ 4.3 V**
- **VBUS (USB): 4.5 V ~ 5.5 V**

2. Embedded LDO and DCDC

- **DCDC for 1.8 V Flash with bypass LDO**
- **DCDC for chip with bypass LDO**
- **Battery monitor for low battery voltage detection**
- **Brownout detection/shutdown and Power-On-Reset**
- **Supports power reduction in different Clock Scenarios**

6. Low power consumption:

- **Whole chip, RX mode: 3.4 mA with DCDC@3.3V**
- **Whole chip, TX mode @ 0dBm: 3.9 mA with DCDC@3.3V**
- **Deep sleep with external wakeup: 0.65 µA**
- **Deep sleep with external wakeup, with 32K RC oscillator on: 0.9 µA**
- **Deep sleep with 32 KB SRAM retention: 1.3 µA**
- **Deep sleep with 32 KB SRAM retention, with 32K RC oscillator on: 1.6 µA**
- **Shutdown mode: 0.37 µA**

1.2.3 Bluetooth LE Features

Bluetooth LE features include:

1. Qualified Bluetooth LE 5.4, main features include:

- **1Mbps, 2Mbps, Long Range S2 (500 Kbps), S8 (125 Kbps)**
- **High duty cycle non-connectable ADV**
- **Extended ADV**
- **LE channel selection algorithm #2**

2. Bluetooth SIG Mesh support

3. Bluetooth based location and indoor positionning support with AoA and AoD (aka Bluetooth 5.4)

4. Bluetooth ISO channel support (aka Bluetooth 5.4) with broadcast and connected mode



2. User manual

2.1 Supply power

The TL7218H-EVK94D supports supply power via USB or other 3.3V power. As shown in figure 1-1, the marker is the USB port. Power can be supplied when USB is plugged in.

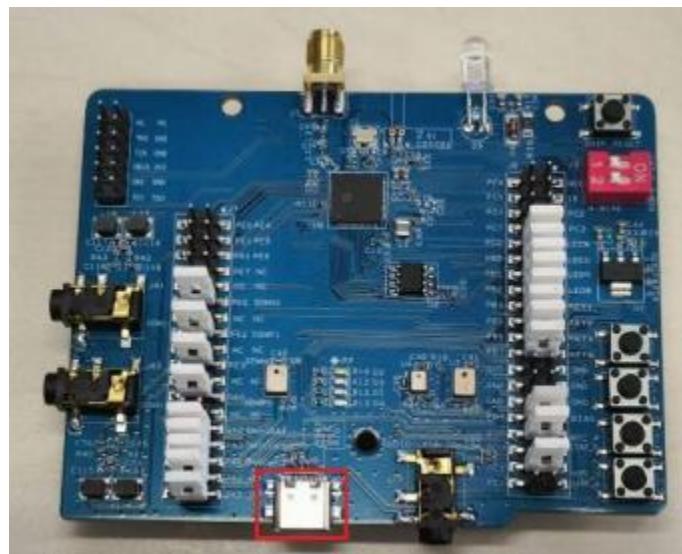


Figure 2-1 USB power supply

NOTICE: As shown in figure 1-2, the marker is the 3.3V and GND port. It is only used for the power supply of downloading firmware, the chip may not work under normal use.





2.2 Download firmware

There is one way to download firmware, SWS burning. But need another burning tool Telink Burning EVK. Telink Burning EVK have 3.3V/SWM/GND port. When using SWS download firmware, connect 3.3V/SWS/GND of dongle to 3.3V/SWM/GND of Burning EVK. The connection mode is shown in Figure 2-2.

2.3 Functions of each module

As shown in figure 2-3, The functions of each module on the board have been marked. There are LED, button , flash and download port on board. The LED lights can indicate what status the TL3218X-EVK64D is in. This makes it an solution for low cost IoT (Internet of Things) and 2.4 Ghz devices. The TL3218X integrates hardware acceleration to support the complicated security operations required by Bluetooth, without the requirement for an external DSP.

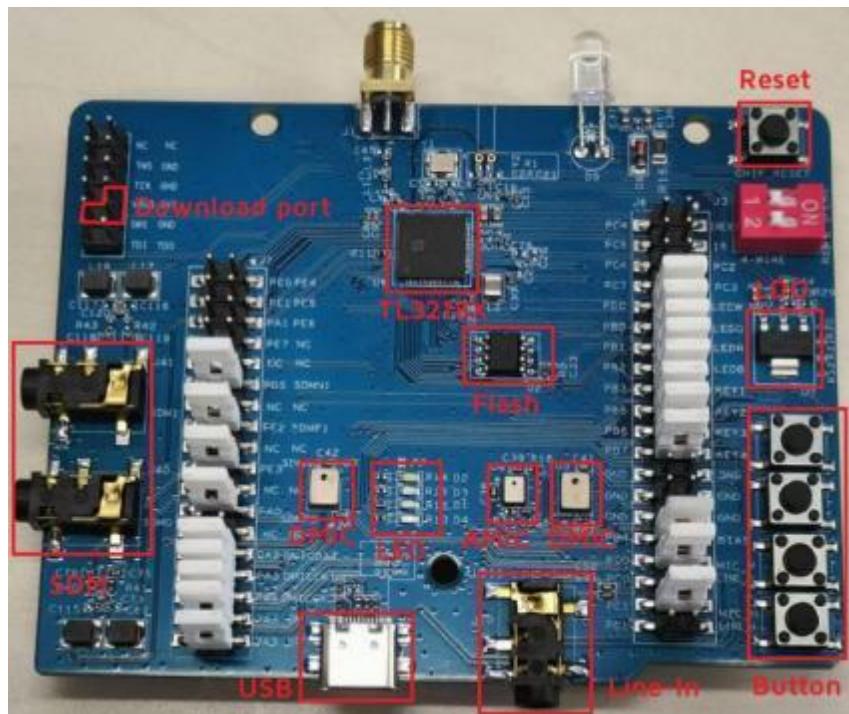


Figure 2-3 The functions of each module

FCC Statement:

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into and outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

The distance between user and products should be no less than 20cm

The EUT is In door use only