



Telink

Telink PDG TL7218X-PDG88D

User Manual

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Keyword

Feature; 2.4GHz; User manual

Brief

This is a user manual for Telink TL7218X PA Dongle

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Revision History

Version	Change Description
V0.1.0	Initial release .

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1. Product Introduction

This is a user manual for Telink Audio PDG TL7218X-PDG88D.

1.1 General description

The Telink PDG TL7218X-PDG88D, which is based on Telink TL7218X chip.

The TL7218X is a wireless SoC for Bluetooth LE 6.0 and 2.4 GHz proprietary. This chip support industrial alliance standards including Bluetooth LE, and 2.4GHz proprietary standard. The TL7218X 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/2.4 GHz RF transceiver in worldwide 2.4 GHz ISM band
2. Bluetooth LE 1 Mbps and 2 Mbps, Long Range 125 kbps and 500 kbps, AoA/AoD, HADM, Hyper-length
3. 2.4 GHz proprietary 1 Mbps/2 Mbps/250 kbps/500 kbps mode
4. Supports flexible 2.4G link layer with configurable packet format
5. Rx Sensitivity: -96 dBm @ Bluetooth LE 1 Mbps (-95.5 dBm @ Low power mode), -93 dBm @ Bluetooth LE 2 Mbps mode, -104.5 dBm @ Long Range 125 kbps, -99 dBm @ Long Range 500 kbps;
6. TX output power: up to +10dBm @ GFSK modulation
7. 50 Ω matched single-pin antenna input
8. RSSI monitoring with +/-1 dB resolution
10. High accuracy distance measurement options with I/Q data samples available for customized extensions (Channel Sounding)
10. Auto acknowledgment, retransmission and flow control
11. Supports full-function Bluetooth LE location features
12. 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
- 3. Battery monitor for low battery voltage detection
- 4. Brownout detection/shutdown and Power-On-Reset
- 5. Supports power reduction in different Clock Scenarios
- 6. IO power supply configurable of 1.8 V or 3.3 V Datasheet for Telink TL7218X
- 7. Low power consumption:
 - Whole chip, BLE Receive: 1.45 mA @ BLE Rx 4.2 V; 1.8 mA @ BLE Rx 3.3 V DCDC mode, 4.9 mA @ BLE Rx LDO mode
 - Whole chip, BLE Transmit: 2.0 mA @ BLE Tx 4.2 V; 2.5 mA @ BLE Tx 0dBm, 3.3 V DCDC mode, 6.8 mA @ BLE Tx 0dBm LDO mode
 - Deep sleep with external wakeup (without SRAM retention): 0.7 μ A
 - Deep sleep with RTC and SRAM retention: 1.9 μ A (with 32 KB SRAM retention)

2. User manual

2.1 Supply power

The TL7218X-PDG88D supports supply power via USB or other 5V power.

As shown in figure 2-1, the marker is the USB port. Power can be supplied when USB is plugged in.



Figure 2-1 USB power supply

As shown in figure 2-2, the marker is the 5V and GND port. 5V power can be supplied through the two ports.

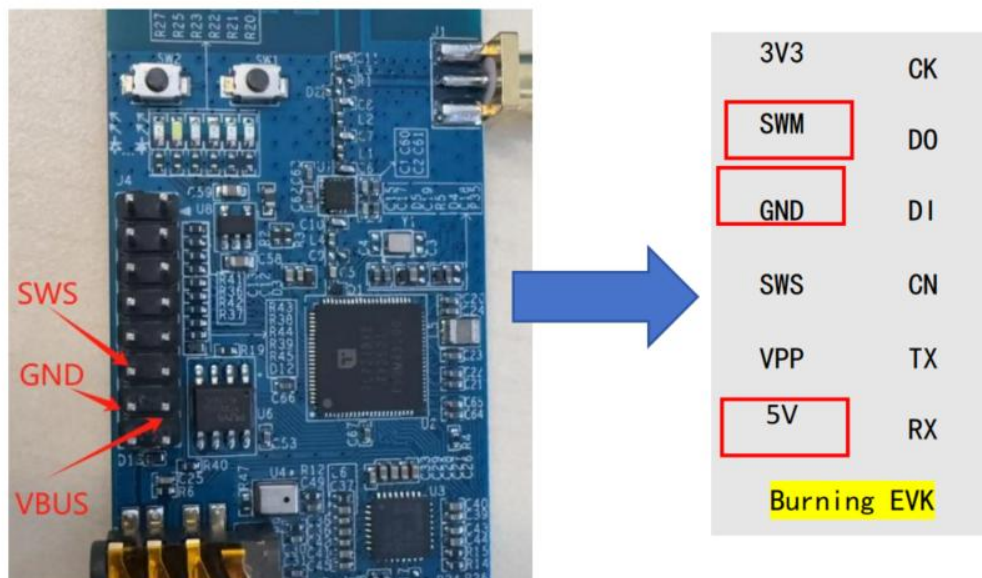


Figure 2-2 5V power supply

2.2 Download firmware

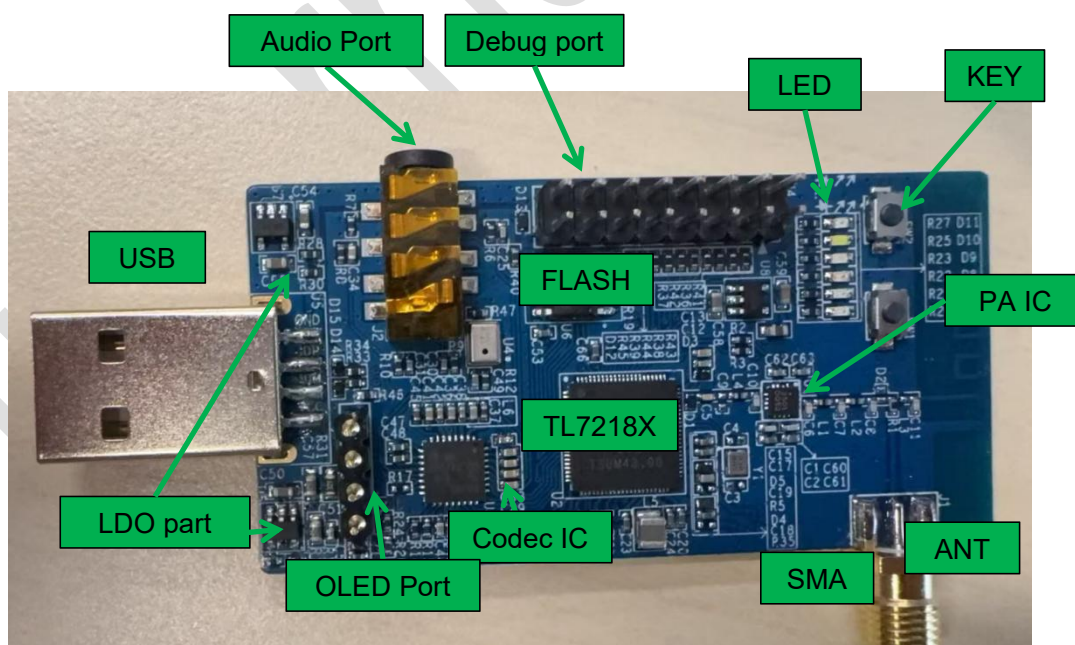
There are also two ways to download firmware, USB burning or SWS burning. But need another burning tool Telink Burning PDG . Telink Burning PDG have USB port and VBUSV/SWS/GND port. When using USB download firmware, just plug PDG USB in Burning PDG. When using SWS download firmware, connect VBUS/SWS/GND of PDG to 5V/SWM/GND of Burning PDG .

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, key, ANT and debug port on board. The LED lights can indicate what status the TL7218X-PDG88D is in. The key allow us to control TL7218XDK88D. We can use debug port to debug TL7218XDK88D.

The TL7218X-PDG88D support audio line-in/out and mic-in functions . Realize this functions according to different software configurations



3. Antenna

Manufacturer: Shenzhen Kexin Wireless Technology Co., Ltd.

Note: 2400-2500MHz, SMA male

Model: KXWX-433E-4

Maximum Antenna Gain: 3dBi

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