Telink EVK TLSR8208ADK56D User Manual

AN-20082700-E1

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Keyword

Feature;2.4GHz; User manual

Brief

This is a user manual for Telink TLSR8208ADK56D EVK

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Legal Disclaimer

Information

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Revision History

Version	Change Description
V0.1.0	Initial release.

Table of Contents

1. Product Introduction

This is a user manual for Telink Audio EVK TLSR8208ADK56D.

1.1 General description

The Telink EVK TLSR8208ADK56D, which is based on Telink TLSR8208A chip.

The TLSR8208ADK56D supports standards and industrial alliance specifications including 5.0 BLE and 2.4 GHz proprietary standard. The TLSR8208A combines the radio frequency (RF), digital processing, protocols stack software and profiles for multiple standards into a single SoC.

1.2 Key features

1.2.1 RF Features

RF features include:

1. Bluetooth/2.4 GHz RF transceiver in worldwide 2.4 GHz ISM band.
2. Bluetooth 5.0 compliant, Bluetooth LE 1 Mbps , Long Range 125 kbps and 500 kbps.
3. ANT mode.
4. TX output power: Up to 0.00084W
5. 50 Ω matched single-pin antenna input.
6. RSSI monitoring with +/-1 dB resolution.
7. Auto acknowledgement, retransmission and flow control.
8. Support PTA (Packet Traffic Arbitrator) for Wi-Fi co-existence.

1.2.2 Power Management Features

Features of power management module include:

1. Embedded LDO
2. Battery monitor: Support low battery detection
3. Power supply:
   - VDD: 1.8 V ~ 3.6 V
   - VBAT: 1.8 V ~ 4.2 V
   - VBUS: 4.5 V ~ 5.5 V
4. Multiple stage power management to minimize power consumption
   - RF/Digit core working at 1.2 V

5. Low power consumption:

• Whole chip RX mode: 9.1 mA with LDO

• Whole chip TX mode @ 0 dBm: 9.5 mA with LDO

• Deep sleep with external wakeup (without SRAM retention): 0.55 μA

• Deep sleep with SRAM retention @ 0.6 V: 0.95 μA (with 16 KB SRAM retention)

• Deep sleep with external wakeup, with 32K RC oscillator on @ 0.6 V (without SRAM retention): 0.95 μA

• Deep sleep with SRAM retention, with 32K RC oscillator on @ 0.6 V: 1.45 μA (with 16 KB SRAM retention)

1.3 Supply power

The TLSR8208ADK56D supports supply power via USB or other 3.3V power.

As shown in figure 2-1, the marker is the USB 5V port. Power can be supplied when USB is plugged in.

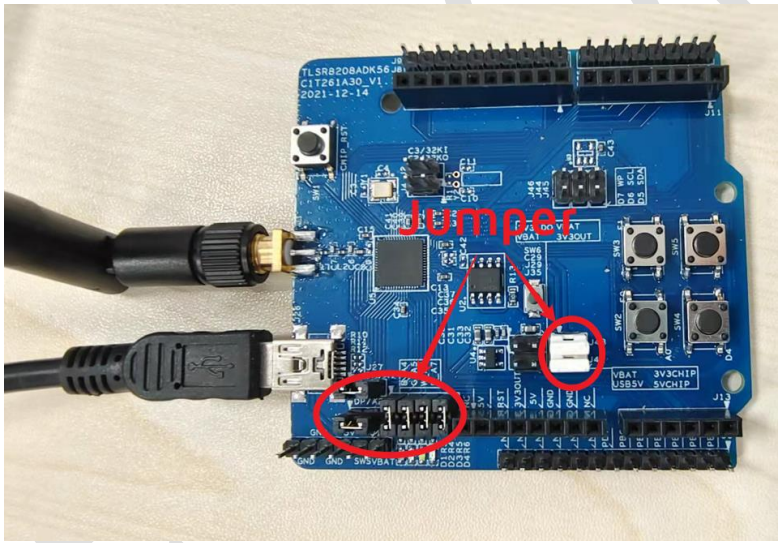


Figure 2-1 USB power supply

As shown in figure 2-2, the marker is the USB to LDO 3.3V port. 3.3V power can be supplied through the two ports.

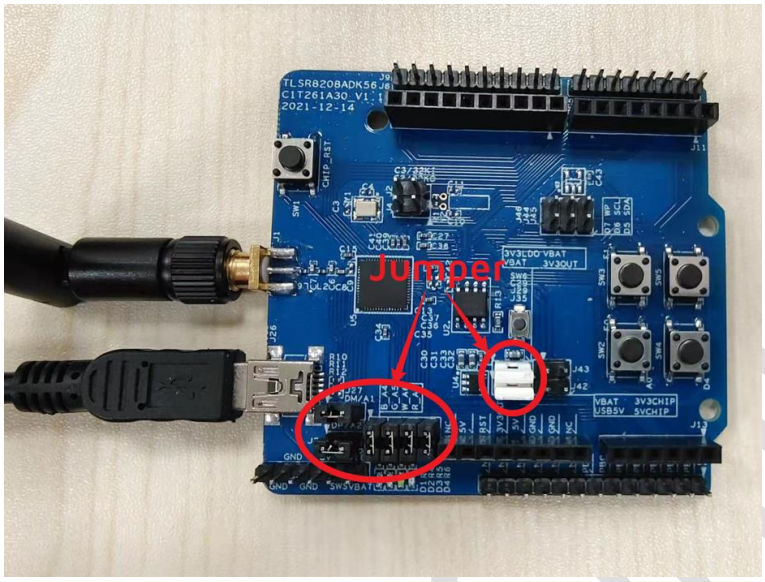


Figure 2-2 USB to LDO 3.3V power supply

As shown in figure 2-3, the marker is the 3.3V and GND port.

Figure 2-3 VBAT 3.3V power supply

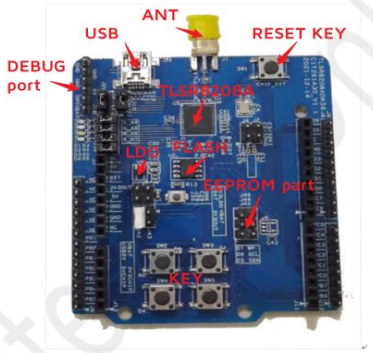
1.4 Download firmware

There are one ways to download firmware, SWS burning. But need another burning tool Telink Burning EVK. Telink Burning EVK have 3.3V/SWS/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 2-3.

1.5 Functions of each module

As shown in figure 2-4, The functions of each module on the board have been marked.

There are LED, key, ANT, E^{2}PROM port and debug port on board. The LED lights can indicate what status the TLSR820ADK56D is in. The key allow us to control TLSR8208ADK56D. We can use debug port to debug TLSR8208ADK56D.



FCC

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 to correct the interference by one or more of the following measures:
-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and receiver.
-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.

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 complies with FCC exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate
the equipment