Telink DONGLE TLSR8208EDG56D User Manual

AN-24040700-E1

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Keyword

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Brief

This is a user manual for Telink TLSR8208EDG56D DONGLE

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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 DONGLE TLSR8208EDG56D.

1.1 General description

The Telink DONGLE TLSR8208EDG56D, which is based on Telink TLSR8208E chip.

The TLSR8208E supports standards and industrial alliance specifications including Bluetooth low energy (LE). The embedded 2.4 GHz transceiver supports Bluetooth low energy as well as 2.4 GHz operation.

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
3. Tx output power: up to +10 dBm
4. 2.4 GHz proprietary 1 Mbps/2 Mbps/250 kbps/500 kbps mode
5. RSSI monitoring with +/-1 dB resolution
6. RX sensitivity: -97 dBm @ Bluetooth LE 1 Mbps mode, -93 dBm @ Bluetooth LE 2 Mbps mode

1.2.2 Chip Features

The TLSR8208E integrates a powerful 32-bit MCU, 2.4 GHz ISM radio, 16 KB OTP, 20 KB SRAM(16KB retention), external Flash, 14-bit Aux ADC, PWM, flexible IO interfaces, and other peripheral blocks required for IoT (Internet of Things) and HID (Human Interface Devices) application development.

The TLSR8208E also includes multi-stage power management design allowing ultra-low power operation and making it the ideal candidate for power-constraint applications.

1.2.3 Power Management Features

1. Embedded LDO
2. Multiple stage power management to minimize power consumption
   . RF/Digit core working at 1.2 V
3. 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 16 KB SRAM retention: 0.9 μA
   . Deep sleep with external wakeup, with 32K RC oscillator on (without SRAM retention): 1.0 μA
   . Deep sleep with 16 KB SRAM retention, with 32K RC oscillator on: 1.3 μA

1.2.4 Bluetooth LE Features

1. Fully compliant with Bluetooth 5.3, main features supported include Bluetooth LE 1 Mbps and 2 Mbps

1.3 Supply power

The TLSR8208EDG56D only supports supply power via USB(5V).

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

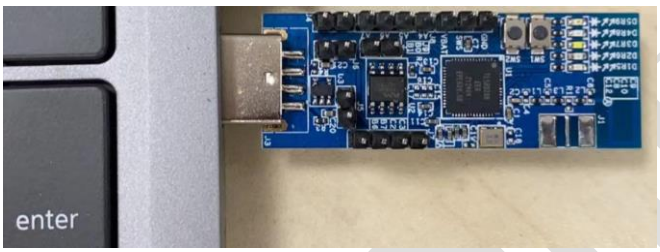

Figure 1-1 USB power supply

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.

Figure 1-2 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/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 1-2.

1.5 Functions of each module

As shown in figure 1-3, 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 TLSR8208EDG56D is in. This makes it an solution for low cost IoT (Internet of Things) and 2.4 Ghz devices. The TLSR8208E integrates hardware acceleration to support the complicated security operations required by Bluetooth, without the requirement for an external DSP.

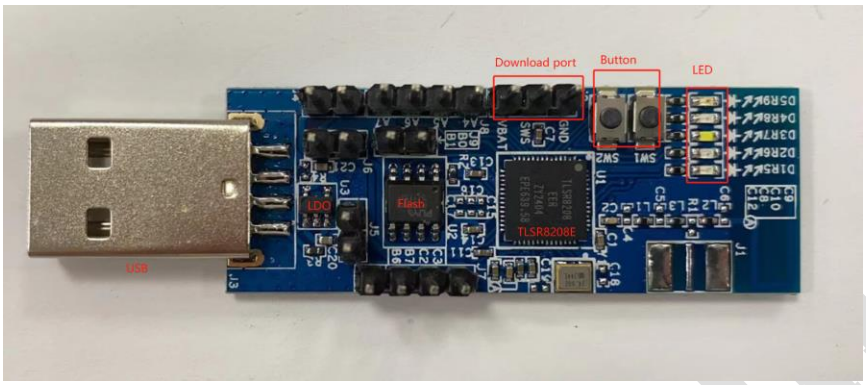

Figure 1-3 Function modules on the board

FCC Statement

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

(1)
(2)