Wireless USB Dongle

User Manual V1.0

PN: TP90W84A

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Revision history

Date	Version	Description
Feb 26, 2024	V1.0	First release.

Introduction

Wireless USB Dongle is a versatile and low-cost development device enabled by the nRF52840 multiprotocol SoC in a convenient USB dongle form factor.

The design features a programmable user button, RGB LED and 2.4G Chip antenna on board. It can be used as a low-cost Bluetooth 5 / Thread / 802.15.4 / ANT / 2.4GHz multiprotocol device or development device.

The dongle is pre-installed with UF2 Bootloader that allows you to flash your firmware by just dragging and dropping .uf2 file onto the flash drive without using an external programmer. It also supports Bluetooth LE packet sniffer with Wireshark, which can help the developer to identify and fix issues by allowing a view of what is happening on-air.

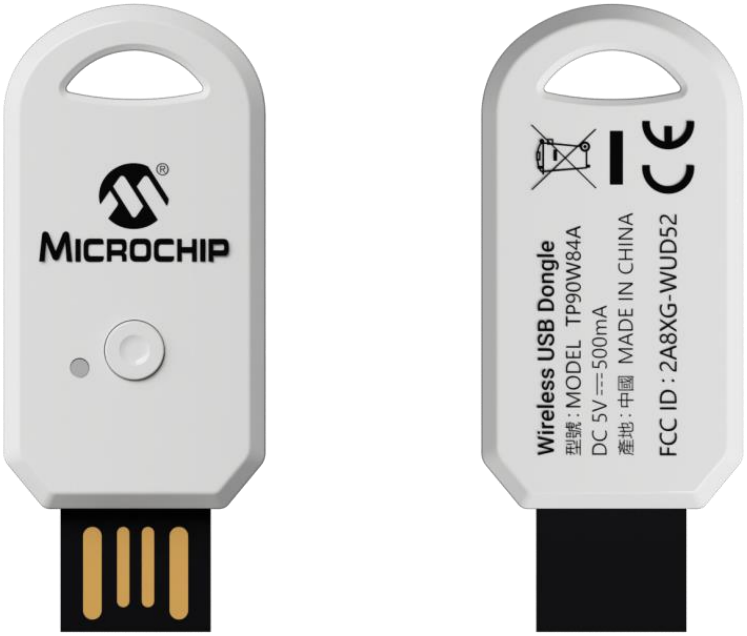

Figure 1 Wireless USB Dongle

Specifications

- Nordic Semiconductor nRF52840 System-on-Chip
  - ARM® Cortex®-M4F processor optimized for ultra-low power operation
  - Combining Bluetooth® Low Energy 5.0, Bluetooth Mesh, Thread, 802.15.4, ANT and 2.4GHz proprietary
  - On-chip USB 2.0 (Full speed) controller
  - ARM TrustZone® Cryptocell 310 security subsystem
  - 1 MB FLASH and 256 kB RAM
- User programmable Button and RGB LED
- Convenient USB dongle form factor
- Pre-installed with UF2 Bootloader and nRF Sniffer for Bluetooth LE firmware
- Measures 50.8mm x 21.1mm x 7.6mm
- Certifications: FCC, CE, UKCA
- RoHS & Reach Compliant

Package content

- 1x Wireless USB Dongle (TP90W84A)
- 1x Antistatic bag – 6 x 9 cm

Hardware diagram

The following figure illustrates the Wireless USB Dongle hardware diagram.

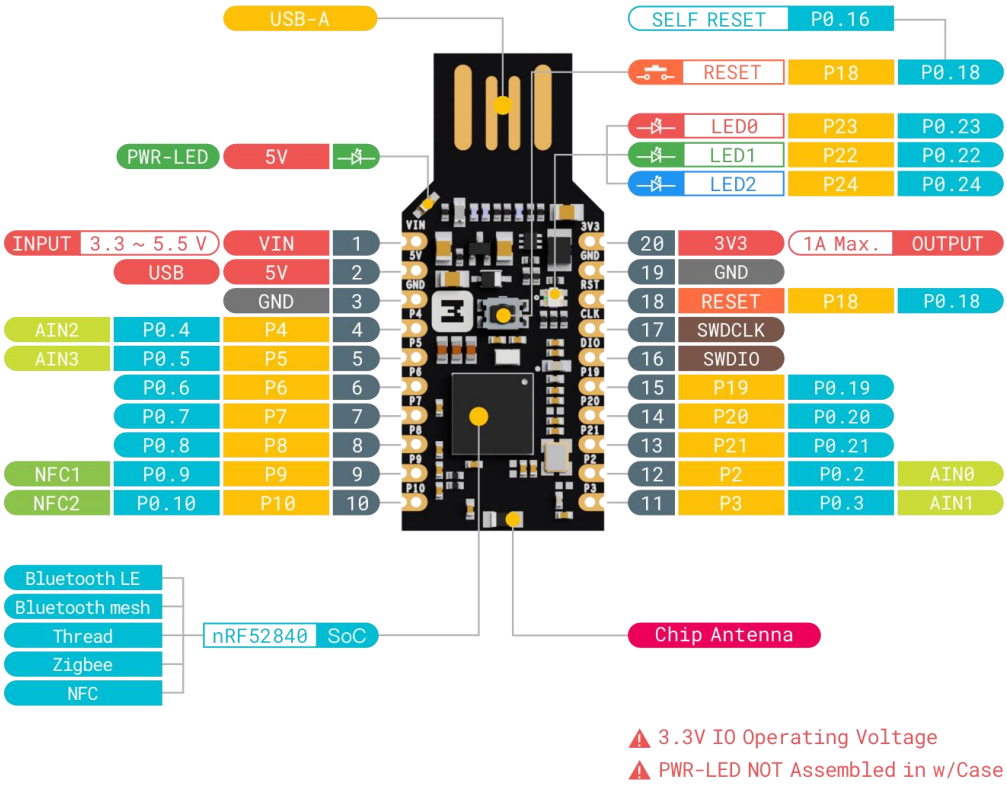

Figure 2 Hardware diagram

Mechanical specifications

The mechanical specifications for the dongle show the dimensions in millimeters.

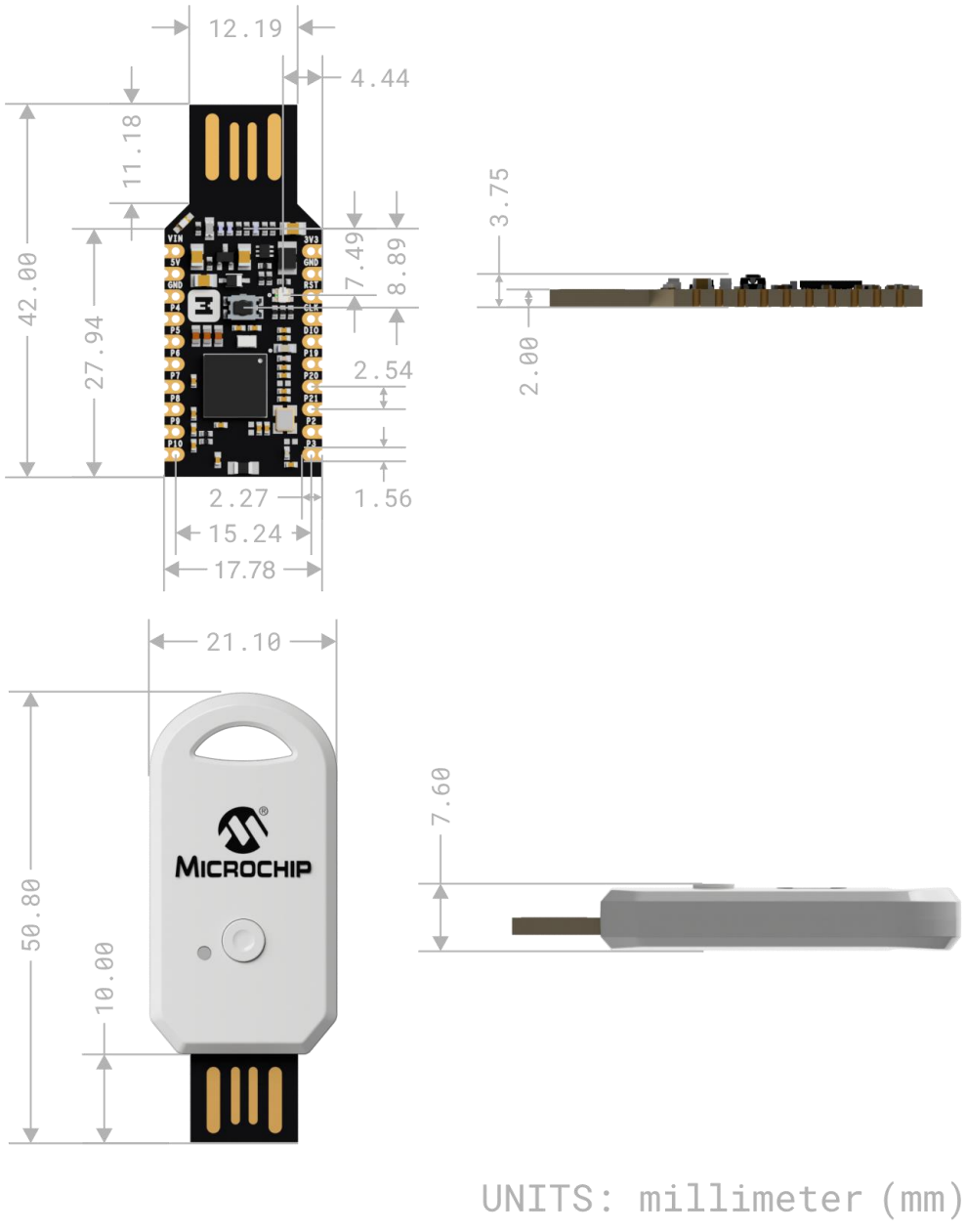

Figure 3 Wireless USB Dongle dimensions

Firmware information

Wireless USB Dongle is pre-installed with the UF2 Bootloader and the nRF Sniffer for Bluetooth LE firmware. The following table shows the pre-installed version of the firmware:

Firmware	Version information
UF2 Bootloader	UF2 Bootloader 0.7.1 lib/nrfx (v2.0.0) lib/tinyusb (0.12.0-145-g9775e7691) lib/uf2 (remotes/origin/configupdate-9-gadbb8c7)
nRF Sniffer for Bluetooth LE	V4.1.1

Ordering information

Part Number	Manufacturer Part Number	Part Name
TP90W84A	501002001	Wireless USB Dongle

Certification

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
This device may not cause harmful interference, and
This device must accept any interference received, including interference that may cause undesired operation.
Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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.

RF warning statement:
The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.