



USER MANUAL

TELESTO-III USB RADIO STICK

AMB9865 / 2609026291001

VERSION 1.4

APRIL 20, 2023

WÜRTH ELEKTRONIK MORE THAN YOU EXPECT

MUST READ

Check for firmware updates

Before using the product make sure you use the most recent firmware version, data sheet and user manual. This is especially important for Wireless Connectivity products that were not purchased directly from Würth Elektronik eiSos. A firmware update on these respective products may be required.

We strongly recommend to include in the customer system design, the possibility for a firmware update of the product.

Revision history

| Manual version | HW version | Notes | Date |
|----------------|------------|--|---------------|
| 1.0 | 2.0 | <ul style="list-style-type: none">Initial version of the manual | July 2019 |
| 1.1 | 2.0 | <ul style="list-style-type: none">Added table for CBUS pins.Correction of block diagramm, wake up has not been connected. | August 2019 |
| 1.2 | 2.0 | <ul style="list-style-type: none">Updated address of Division Wireless Connectivity & Sensors location | October 2019 |
| 1.3 | 2.0 | <ul style="list-style-type: none">Updated Declaration of EU conformity in chapter Regulatory compliance information. | December 2020 |
| 1.4 | 2.0 | <ul style="list-style-type: none">Updated document styleFunction description is part of the Telesto-III user manual [1] | April 2023 |

Abbreviations

| Abbreviation | Name | Description |
|--------------|----------------------|---|
| FSE | Field Sales Engineer | Support and sales contact person responsible for limited sales area |
| HIGH | High signal level | |
| LOW | Low signal level | |
| RF | Radio frequency | Describes everything relating to the wireless transmission. |
| UART | | Universal Asynchronous Receiver Transmitter allows communicating with the module of a specific interface. |
| VDD | Supply voltage | |

Contents

| | | |
|----------|---|-----------|
| 1 | Introduction | 4 |
| 1.1 | Ordering information | 4 |
| 2 | Functional description | 5 |
| 2.1 | Taking into operation | 5 |
| 2.1.1 | Usage of CBUS pins | 6 |
| 3 | Regulatory compliance information | 7 |
| 3.1 | Important notice FCC | 7 |
| 3.2 | FCC - Federal Communications Commission | 7 |
| 3.3 | IC - Industry Canada | 7 |
| 4 | References | 8 |
| 5 | Important notes | 9 |
| 5.1 | General customer responsibility | 9 |
| 5.2 | Customer responsibility related to specific, in particular safety-relevant applications | 9 |
| 5.3 | Best care and attention | 9 |
| 5.4 | Customer support for product specifications | 9 |
| 5.5 | Product improvements | 10 |
| 5.6 | Product life cycle | 10 |
| 5.7 | Property rights | 10 |
| 5.8 | General terms and conditions | 10 |
| 6 | Legal notice | 11 |
| 6.1 | Exclusion of liability | 11 |
| 6.2 | Suitability in customer applications | 11 |
| 6.3 | Trademarks | 11 |
| 6.4 | Usage restriction | 11 |
| 7 | License terms | 13 |
| 7.1 | Limited license | 13 |
| 7.2 | Usage and obligations | 13 |
| 7.3 | Ownership | 14 |
| 7.4 | Firmware update(s) | 14 |
| 7.5 | Disclaimer of warranty | 14 |
| 7.6 | Limitation of liability | 15 |
| 7.7 | Applicable law and jurisdiction | 15 |
| 7.8 | Severability clause | 15 |
| 7.9 | Miscellaneous | 15 |

1 Introduction

The Telesto-III is a radio sub module that provides wireless connectivity capabilities in the 915 MHz frequency band. The Telesto-III USB radio stick incorporates the Telesto-III in a USB stick form factor enabling easy interfacing with any USB enabled device like personal computer or laptop. The Telesto-III USB radio stick allows quick set-up of a radio link between PC and any system with integrated Telesto-III radio module.

1.1 Ordering information

| WE order code | Former order code | Description |
|---------------|-------------------|---|
| 2609026291001 | AMB9865 | Radio dongle 915 MHz with SMA connector |

Table 1: Ordering information

2 Functional description

The Telesto-III USB radio stick consists of Telesto-III radio module along with an serial-to-USB adapter that enables direct connection to any USB compatible device. An FTDI serial-to-USB converter chip **FT232R** connects the USB interface of the Telesto-III USB radio stick to the UART pins of the integrated radio module. Besides UART, additional digital GPIO pins (CBUS) are connected to the radio module to provide special functions like reset. Figure 1 illustrates all the functional components of Telesto-III USB radio stick.

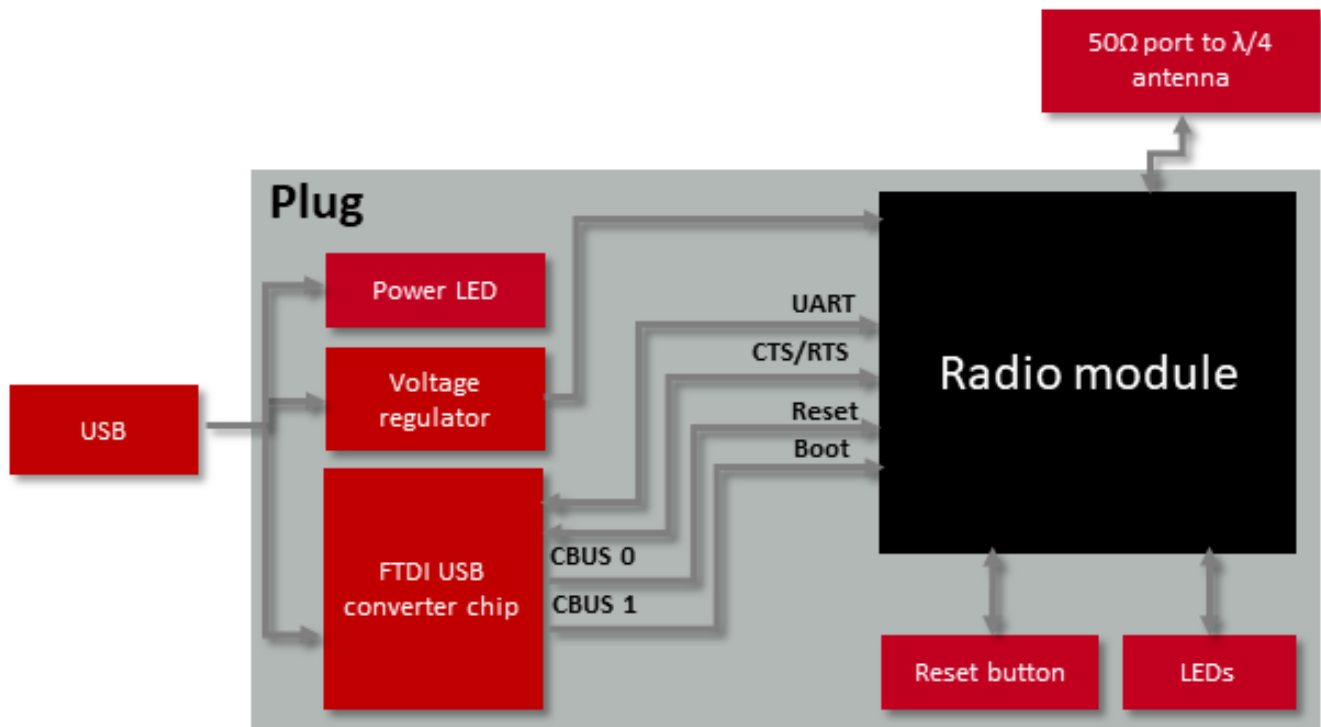


Figure 1: Block diagram of the Telesto-III USB radio stick



For detailed function description of the Telesto-III USB radio stick, please refer to the user manual of the underlying radio module Telesto-III [1].

2.1 Taking into operation

To use the Telesto-III USB radio stick, the VCP driver of FTDI has to be installed by following the installation guides of FTDI:

<https://www.ftdichip.com/Drivers/VCP.htm>



It is recommended to restart the PC after installation of drivers.

On proper installation of the drivers, the module appears as a virtual COM port on the PC. This COM port can be opened in any serial emulator program to communicate with the radio module. The radio module responds to commands in a specific format. Please refer to the corresponding user manual [1] for the complete description of the command set.

2.1.1 Usage of CBUS pins

To switch the CBUS pins high or low and thus to use the provided pins functions of the Telesto-III radio module, the D2XX driver of FTDI has to be used. This driver is part of the previous mentioned VCP driver installation.

Examples codes for "how to use the D2XX driver within your own software tool" can be found in the software example section of:

<https://www.ftdichip.com/Support/SoftwareExamples/CodeExamples.htm>



The stick works properly as intended without the need of setting the CBUS pins. CBUS pins can be used for additional functionality as resetting the module via USB interface.

| CBUS pin | Module Pin | Function |
|----------|------------|-------------------------------|
| CBUS0 | 19 | /RESET internally pulled high |
| CBUS1 | 12 | BOOT internally pulled low |

Table 2: CBUS functions

3 Regulatory compliance information

3.1 Important notice FCC

The use of RF frequencies is limited by national regulations. The Telesto-III USB radio stick has been designed to comply with the FCC Part 15.

The Telesto-III USB radio stick can be operated without notification and free of charge in the area of the United States of America. However, according to the FCC Part 15, restrictions (e.g. in terms of maximum allowed RF power and antenna) may apply.

3.2 FCC - Federal Communications Commission

The Telesto-III USB radio stick has been FCC Part 15 B tested.

Contains FCC ID: R7TAMB9826

The enclosed device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (i.) this device may not cause harmful interference and
- (ii.) this device must accept any interference received, including interference that may cause undesired operation.

3.3 IC - Industry Canada

This device contains ISED: 5136A-AMB9826

This device complies with Industry Canada license-exempt RSS standard(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

4 References

- [1] Würth Elektronik. Telesto-III user manual. <https://www.we-online.de/katalog/de/manual/2609011091000>.

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Any product-specific data sheets, manuals, application notes, PCN's, warnings and cautions must be strictly observed in the most recent versions and matching to the products firmware revisions. This documents can be downloaded from the product specific sections on the wireless connectivity homepage.

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Some products within the product range may contain substances, which are subject to restrictions in certain jurisdictions in order to serve specific technical requirements. Necessary information is available on request. In this case, the field sales engineer or the internal sales person in charge should be contacted who will be happy to support in this matter.

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Due to constant product improvement, product specifications may change from time to time. As a standard reporting procedure of the Product Change Notification (PCN) according to the JEDEC-Standard, we inform about major changes. In case of further queries regarding the PCN, the field sales engineer, the internal sales person or the technical support team in charge should be contacted. The basic responsibility of the customer as per section 5.1 and 5.2 remains unaffected. All wireless connectivity module driver software "wireless connectivity SDK" and its source codes as well as all PC software tools are not subject to the Product Change Notification information process.

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Due to technical progress and economical evaluation we also reserve the right to discontinue production and delivery of products. As a standard reporting procedure of the Product Termination Notification (PTN) according to the JEDEC-Standard we will inform at an early stage about inevitable product discontinuance. According to this, we cannot ensure that all products within our product range will always be available. Therefore, it needs to be verified with the field sales engineer or the internal sales person in charge about the current product availability expectancy before or when the product for application design-in disposal is considered. The approach named above does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

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We recommend you to be updated about the status of new firmware and software, which is available on our website or in our data sheet and manual, and to implement new software in your device where appropriate.

By ordering a wireless connectivity product, you accept this license terms in all terms.

List of Figures

| | | |
|---|--|---|
| 1 | Block diagram of the Telesto-III USB radio stick | 5 |
|---|--|---|

List of Tables

| | | |
|---|--------------------------------|---|
| 1 | Ordering information | 4 |
| 2 | CBUS functions | 6 |

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