



USER MANUAL

METIS-I USB RADIO STICK

AMB8465-M / 2605056083001

VERSION 1.3

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 | April 2019 |
| 1.1 | 2.0 | <ul style="list-style-type: none">• Updated address of Division Wireless Connectivity & Sensors location | October 2019 |
| 1.2 | 2.0 | <ul style="list-style-type: none">• Updated Declaration of EU conformity Regulatory compliance information | February 2021 |
| 1.3 | 2.0 | <ul style="list-style-type: none">• Updated document style• Function description is part of the Metis-I 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 EU | 7 |
| 3.2 | EU Declaration of conformity | 8 |
| 4 | References | 9 |
| 5 | Important notes | 10 |
| 5.1 | General customer responsibility | 10 |
| 5.2 | Customer responsibility related to specific, in particular safety-relevant applications | 10 |
| 5.3 | Best care and attention | 10 |
| 5.4 | Customer support for product specifications | 10 |
| 5.5 | Product improvements | 11 |
| 5.6 | Product life cycle | 11 |
| 5.7 | Property rights | 11 |
| 5.8 | General terms and conditions | 11 |
| 6 | Legal notice | 12 |
| 6.1 | Exclusion of liability | 12 |
| 6.2 | Suitability in customer applications | 12 |
| 6.3 | Trademarks | 12 |
| 6.4 | Usage restriction | 12 |
| 7 | License terms | 14 |
| 7.1 | Limited license | 14 |
| 7.2 | Usage and obligations | 14 |
| 7.3 | Ownership | 15 |
| 7.4 | Firmware update(s) | 15 |
| 7.5 | Disclaimer of warranty | 15 |
| 7.6 | Limitation of liability | 16 |
| 7.7 | Applicable law and jurisdiction | 16 |
| 7.8 | Severability clause | 16 |
| 7.9 | Miscellaneous | 16 |

1 Introduction

The Metis-I is a radio sub module that provides wireless M-BUS capabilities in the S-,T- and C-mode. The Metis-I USB radio stick incorporates the Metis-I in a USB stick form factor enabling easy interfacing with any USB enabled device like personal computer or laptop. The Metis-I USB radio stick allows quick set-up of a radio link between PC and any wireless M-BUS enabled system using the respective mode, e.g. wireless meters.

1.1 Ordering information

| WE order code | Former order code | Description |
|---------------|-------------------|---|
| 2605056083001 | AMB8465-M | Wireless M-BUS USB radio stick (S,T,C mode) |

Table 1: Ordering information

2 Functional description

The Metis-I USB radio stick consists of Metis-I radio module along with an serial-to-USB adapter that enables direct connection to any USB compatible device. A FTDI serial-to-USB converter chip **FT232R** connects the USB interface of the Metis-I 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 Metis-I USB radio stick.

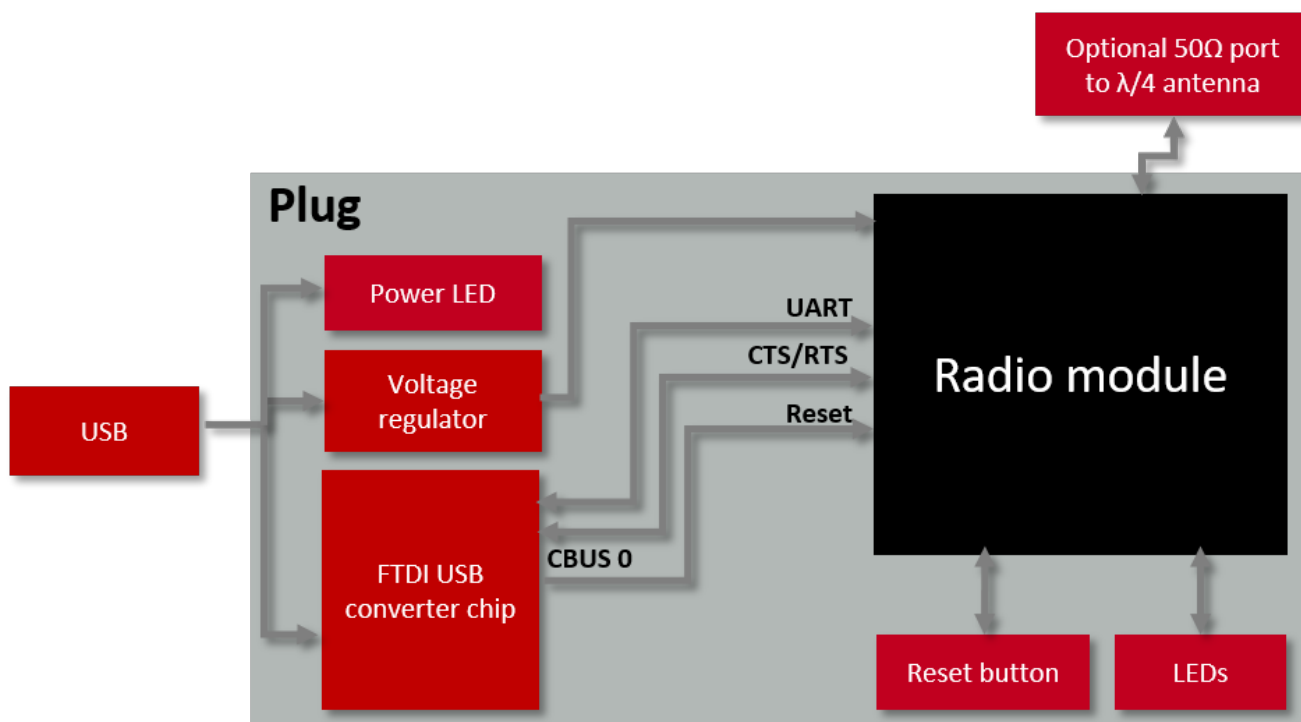


Figure 1: Block diagram of the Metis-I USB radio stick



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

2.1 Taking into operation

To use the Metis-I 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 Metis-I 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>

3 Regulatory compliance information

3.1 Important notice EU

The use of RF frequencies is limited by national regulations. The Metis-I USB radio stick has been designed to comply with the RED directive 2014/53/EU of the European Union (EU).

The Metis-I USB radio stick can be operated without notification and free of charge in the area of the European Union. However, according to the RED directive, restrictions (e.g. in terms of duty cycle or maximum allowed RF power) may apply.

3.2 EU Declaration of conformity



EU DECLARATION OF CONFORMITY

Radio equipment: 2605056083001

The manufacturer: Würth Elektronik eiSos GmbH & Co. KG
Max-Eyth-Straße 1
74638 Waldenburg

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Object of the declaration: 2605056083001

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation: Directive 2014/53/EU and 2011/65/EU.

Following harmonised norms or technical specifications have been applied:

EN 300 220-1 V3.1.1 (2017-02)
EN 300 220-2 V3.1.1 (2017-02)
EN 301 489-1 V2.2.0 (Draft)
EN 301 489-3 V2.1.1 (Final draft)
EN 62479 : 2010
EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011

i.A. G. Eschardt

Trier, 31th of October 2018
Place and date of issue

4 References

- [1] Würth Elektronik. Metis-I user manual. <https://www.we-online.de/katalog/de/manual/2605041183000>.

5 Important notes

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5.1 General customer responsibility

Some goods within the product range of Würth Elektronik eiSos GmbH & Co. KG contain statements regarding general suitability for certain application areas. These statements about suitability are based on our knowledge and experience of typical requirements concerning the areas, serve as general guidance and cannot be estimated as binding statements about the suitability for a customer application. The responsibility for the applicability and use in a particular customer design is always solely within the authority of the customer. Due to this fact, it is up to the customer to evaluate, where appropriate to investigate and to decide whether the device with the specific product characteristics described in the product specification is valid and suitable for the respective customer application or not. Accordingly, the customer is cautioned to verify that the documentation is current before placing orders.

5.2 Customer responsibility related to specific, in particular safety-relevant applications

It has to be clearly pointed out that the possibility of a malfunction of electronic components or failure before the end of the usual lifetime cannot be completely eliminated in the current state of the art, even if the products are operated within the range of the specifications. The same statement is valid for all software sourcecode and firmware parts contained in or used with or for products in the wireless connectivity and sensor product range of Würth Elektronik eiSos GmbH & Co. KG. In certain customer applications requiring a high level of safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health, it must be ensured by most advanced technological aid of suitable design of the customer application that no injury or damage is caused to third parties in the event of malfunction or failure of an electronic component.

5.3 Best care and attention

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.

5.4 Customer support for product specifications

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.

5.5 Product improvements

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.

5.6 Product life cycle

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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7.8 Severability clause

If a provision of this license terms is or becomes invalid, unenforceable or null and void, this shall not affect the remaining provisions of the terms. The parties shall replace any such provisions with new valid provisions that most closely approximate the purpose of the terms.

7.9 Miscellaneous

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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 Metis-I USB radio stick | 5 |
|---|--|---|

List of Tables

| | | |
|---|--------------------------------|---|
| 1 | Ordering information | 4 |
|---|--------------------------------|---|



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