TWN4 Mini reader family

TWN4 Mini EVP SE M HF
TWN4 Mini EVP SI M HF
TWN4 Mini EVPU SI M HF
TWN4 MultiTech HF Mini / TWN4 Mini Reader
MIFARE NFC

USER MANUAL

ONLINE USER GUIDE

ALLEGION™
An Allegion Brand

ELATEC
RFID Systems

TABLE OF CONTENTS

1 INTRODUCTION 3

1.1 ABOUT THIS MANUAL 3

1.2 ELATEC SUPPORT 3

2 SAFETY INFORMATION 4

3 PRODUCT DESCRIPTION 6

3.1 INTENDED USE 6

3.2 PRODUCT FAMILY 6

3.3 FIRMWARE 9

3.4 LABELING 9

3.5 ACCESSORIES 9

4 MODE OF OPERATION 11

4.1 OPERATING MODE 11

4.2 POWER UP 11

4.3 ENUMERATION 11

4.4 INITIALIZATION 11

4.5 NORMAL OPERATION 11

4.6 DETECTION OF A TRANSPONDER 11

4.7 SUSPEND MODE 12

5 COMPLIANCE STATEMENTS 13

5.1 GENERAL STATEMENTS 13

5.2 TWN4 MINI EVP SE M HF 13

5.3 TWN4 MINI EVP SI M HF 14

5.4 TWN4 MINI EVPU SI M HF 17

5.5 TWN4 MULTITECH HF MINI / TWN4 MINI READER MIFARE NFC 18

APPENDIX 21

A – RELEVANT DOCUMENTATION 21

B – TERMS AND ABBREVIATIONS 21

C – REVISION HISTORY 21

1 INTRODUCTION

1.1 ABOUT THIS MANUAL

This user manual is intended for the user and enables safe and appropriate handling of the product. It gives a general overview, as well as important technical data and safety information about the product. Before using the product, the user should read and understand the content of this manual.

For the sake of better understanding and readability, this manual might contain exemplary pictures, drawings and other illustrations. Depending on your product configuration, these pictures might differ from the actual design of your product.

The original version of this manual has been written in English. Wherever the manual is available in another language, it is considered as a translation of the original document for information purposes only. In case of discrepancy, the original version in English will prevail.

1.2 ELATEC SUPPORT

In case of any technical questions or product malfunction, refer to the ELATEC website (www.elatec.com) or contact ELATEC technical support at **support.elatec@allegion.com**.

In case of questions regarding your product order, contact your Sales representative or ELATEC customer service at **info.elatec@allegion.com**.

2 SAFETY INFORMATION

Transport and storage

- Carefully observe the transport and storage conditions described on the product packaging or other relevant product documents (e.g. data sheet).

Unpacking and installation

- Before unpacking and installing the product, this manual and all relevant installation instructions must be read carefully and understood.

- The product might show sharp edges or corners and requires a particular attention during the unpacking and installation.
  Unpack the product carefully and do not touch any sharp edges or corners, or any sensitive components on the product.
  If necessary, wear safety gloves.

- After unpacking the product, check that all components have been delivered according to your order and delivery note.
  Contact ELATEC if your order is not complete.

- In case the product is equipped with a cable, do not twist or pull the cable excessively.

- In case the product is equipped with a cable, the cable may not be replaced or extended.
  ELATEC excludes any liability for damages or injuries resulting from the use of the product with a cable extension or a replaced cable.

- In case TWN4 Mini EVP SE M HF is connected to an external RFID antenna with a UMCC cable, the cable may not be disconnected from the UMCC connectors on the antenna and on the module by using tweezers or by applying manual force, as it might damage the cable, the antenna or the module.
  Use only a "U.FL extraction tool" to disconnect the cable from the UMCC connectors on the external antenna or on TWN4 Mini EVP SE M HF.

- The product is an electronic device whose installation requires specific skills and expertise.
  The installation of the product should be done by trained and qualified personnel only.

Handling

Warning
Powering the product with more than one power source at the same time or using the product as a power supply for other devices may lead to injuries or property damage.

- Do not power the product via more than one power source at the same time.
- Do not use the product as a power supply for other devices.

- To comply with the applicable RF exposure requirements, the product should be installed and operated with a minimum distance of 20 cm to any user's/nearby person's body at all times. Refer to Chapter "Compliance statements" for further information about RF exposure compliance.

- Depending on your product configuration, the product might be equipped with one or more light-emitting diodes (LED).
  Avoid direct eye contact with the blinking or steady light of the light-emitting diodes.

- The product has been designed for use under specific conditions, e.g. in a specific temperature range (refer to the product data sheet).
  Any use of the product under different conditions might damage the product or alter its reading performance.

- The use of other RFID devices in direct vicinity to the product, or in combination with the product might damage the product or alter its reading performance. In case of doubts, contact ELATEC for more information.

- The user is liable for the use of spare parts or accessories other than the ones sold or recommended by ELATEC.
  ELATEC excludes any liability for damages or injuries resulting from the use of spare parts or accessories other than the ones sold or recommended by ELATEC.

- Like most electronic devices, RFID systems generate electromagnetic waves that can vary in amplitude and frequency. It is generally known and accepted that some RFID devices might potentially interfere with personal medical devices, like pacemakers or hearing aids.
  The RFID modules of the TWN4 Mini reader family fulfill general radio and EMC requirements. However, users with a pacemaker or any other medical device should use the modules carefully and refer to the information given by the manufacturer of their medical devices before using the modules or any host device containing the modules.

- TWN4 Mini EVP SE M HF has been designed to operate with the antenna type listed in Chapter "Product family". Antenna types not included in this list are strictly prohibited for use with this device. In case the product is used with another antenna than the one listed in Chapter "Product family", additional testing and/or approval are required.
  Do not use the product with an antenna other than the one listed in this document. Otherwise, damage may occur.

Maintenance and cleaning

- Any repair or maintenance work should be done by trained and qualified personnel only.
  Do not try to repair or carry out any maintenance work on the product by yourself.
  Do not allow any repair or maintenance work on the product by an unqualified or unauthorized third party.

- The product does not need any special cleaning.
  Do not use any detergents or other cleaning agents on the product.

Disposal

- The product must be disposed of in accordance with applicable local regulations.

Product modifications

- The product has been designed, manufactured and certified as defined by ELATEC.
  Any product modification without prior written approval from ELATEC is prohibited and considered improper use of the product. Unauthorized product modifications may also result in the loss of product certifications.

If you are unsure about any part of the safety information above, contact ELATEC support.

Any failure to comply with the safety information given in this document is considered improper use. ELATEC excludes any liability in case of improper use or faulty product installation.

3 PRODUCT DESCRIPTION

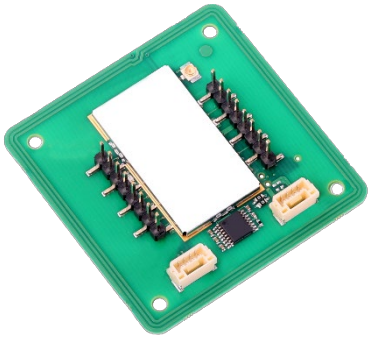
3.1 INTENDED USE

The RFID modules of the TWN4 Mini reader family allow users to read and write RFID media in the 13.56 MHz (HF) frequency band for identification purposes. The modules are intended to be integrated into a host device. All products must be used in environmental conditions according to the respective product data sheets and installation instructions related to the products. All products are for professional use only.

Any use other than the intended use described in this section, as well as any failure to comply with the safety information given in this document, is considered improper use. ELATEC excludes any liability in case of improper use or faulty product installation.

3.2 PRODUCT FAMILY

The TWN4 Mini reader family contains the following RFID modules:

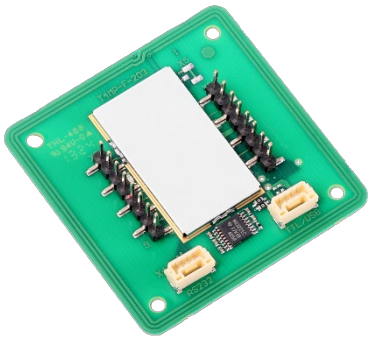
TWN4 Mini EVP SE M HF		
	Frequency	13.56 MHz (HF)
	Antenna	Externally, 50 Ohm for 13.56 MHz[1]
	Dimensions (L x W x H)	Approx. 50.00 x 50.00 x 12.00 mm Approx. 1.97 x 1.97 x 0.47 inch
	Power	3.15 – 5.5 V DC ES1/PS2 classified power source according to IEC 62368-1, short-circuit current < 8 A
	Current consumption	RF field on: approx. 180 mA typically
	Temperature ranges	Operating: -25 °C up to +80 °C / -13 °F up to +176 °F Storage: -40 °C up to +85 °C / -40 °F up to +185 °F
	Relative humidity	5% to 95% non-condensing
	R/W distance	Up to 100 mm / 3.94 inch, depending on environment and transponder
	MTBF	500,000 hours
	Weight	Approx. 12 g / 0.42 oz

[1] TWN4 Mini EVP SE M HF has been tested with an external printed circuit board equipped with the following antenna:

RFID HF antenna (13.56 MHz)
Outer dimensions: 42.00 x 39.00 mm ± 1% / 1.65 x 1.54 inch ± 1%
Number of turns: 3
Inductance: 990 nH ± 5%
Width of wire: 1.00 mm / 0.039 inch
Antenna gain: not applicable (magnetic coupler, no electromagnetic transmission)

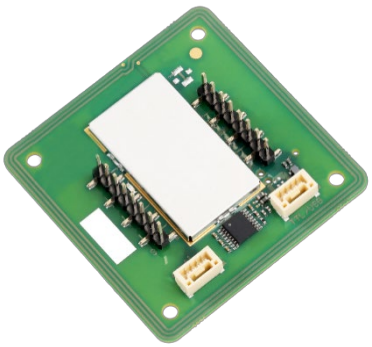
Please note that the use of TWN4 Mini EVP SE M HF with another antenna than the one described above is not part of the approvals granted to the module. In case TWN4 Mini EVP SE M HF is used with another antenna, a separate approval, additional testing or new authorization for a use with this specific antenna is required.

TWN4 Mini EVP SI M HF

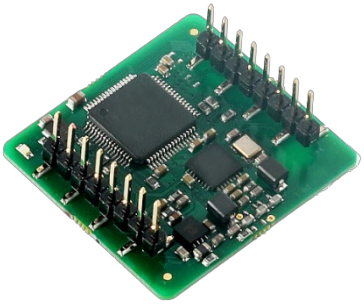


Frequency	13.56 MHz (HF)
Antenna	Integrated RFID HF antenna Outer dimensions: 47.00 x 47.00 mm / 1.85 x 1.85 inch Number of turns: 3
Dimensions (L x W x H)	Approx. 50.00 x 50.00 x 12.00 mm Approx. 1.97 x 1.97 x 0.47 inch
Power	3.15 – 5.5 V DC ES1/PS2 classified power source according to IEC 62368-1, short-circuit current < 8 A
Current consumption	RF field on: approx. 180 mA typically
Temperature ranges	Operating: -25 °C up to +80 °C / -13 °F up to +176 °F Storage: -40 °C up to +85 °C / -40 °F up to +185 °F
Relative humidity	5% to 95% non-condensing
R/W distance	Up to 100 mm / 3.94 inch, depending on environment and transponder
MTBF	500,000 hours
Weight	Approx. 12 g / 0.42 oz

TWN4 Mini EVPU SI M HF



Frequency	13.56 MHz (HF)
Antenna	Integrated RFID HF antenna Outer dimensions: 50.00 x 50.00 mm / 1.97 x 1.97 inch Number of turns: 3
Dimensions (L x W x H)	Approx. 50.00 x 50.00 x 12.00 mm Approx. 1.97 x 1.97 x 0.47 inch
Power	3.15 – 5.5 V DC ES1/PS2 classified power source according to IEC 62368-1, short-circuit current < 8 A
Current consumption	RF field on: approx. 180 mA typically
Temperature ranges	Operating: -25 °C up to +80 °C / -13 °F up to +176 °F Storage: -40 °C up to +85 °C / -40 °F up to +185 °F
Relative humidity	5% to 95% non-condensing
R/W distance	Up to 100 mm / 3.94 inch, depending on environment and transponder
MTBF	500,000 hours
Weight	Approx. 12 g / 0.42 oz

TWN4 MultiTech HF Mini (registered under the model name **TWN4 Mini Reader MIFARE NFC**)		
	Frequency	13.56 MHz (HF)
	Antenna	Integrated RFID HF antenna Dimensions: 27.5 x 25 mm / 1.08 x 0.98 inch Number of turns: 4
	Dimensions (L x W x H)	Approx. 32.60 x 30.10 x 11.20 mm Approx. 1.28 x 1.19 x 0.44 inch
	Power	3.15 – 5.5 V DC ES1/PS2 classified power source according to IEC 62368-1, short-circuit current < 8 A
	Current consumption	RF field on: 110 mA typically
	Temperature range	Operating: -25 °C up to +80 °C / -13 °F up to +176 °F Storage: -40 °C up to +85 °C / -40 °F up to +185 °F
	Relative humidity	5% to 95% non-condensing
	R/W distance	Up to 70 mm / 2.76 inch, depending on environment and transponder
	MTBF	500,000 hours
	Weight	Approx. 4 g / 0.14 oz

Refer to the data sheet of your product for additional technical specifications.

3.3 FIRMWARE

The product is delivered ex-works with a specific firmware version, which is displayed on the product label.

Fig. 1 - exemplary illustration

3.4 LABELING

The product is delivered ex-works with a label (Fig. 1) attached on its bottom side (Fig. 2).

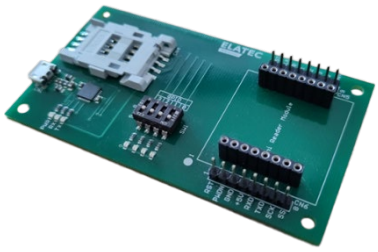
Fig. 2 - exemplary illustration

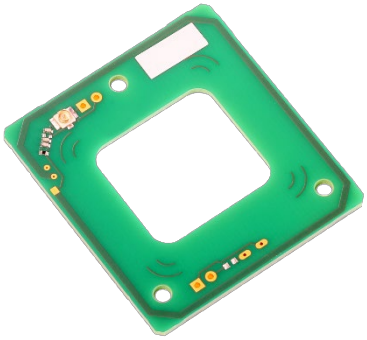
This label contains important product information (e.g. certification information) and may not be removed or damaged. In case of a label wear-out, contact ELATEC.

Once the product has been integrated into a host device, the label might not be visible anymore. In this case, specific requirements related to the labeling of the host device might apply. For more information, refer to the integration manual of your product and to the documentation related to the host device.

3.5 ACCESSORIES

The product can be delivered with the following optional components:

	**Development board** for interface testing



External RFID antenna (13.56 MHz)

PCB antenna (HF) for TWN4 Mini EVP SE M HF.

TWN4 Mini EVP SE M HF has been tested with this antenna. The certifications and approvals granted to TWN4 Mini EVP SE M HF are only valid when the RFID module is used with this antenna. The use of TWN4 Mini EVP SE M HF with another antenna is not part of the approvals granted to the module. In case TWN4 Mini EVP SE M HF is used with another antenna, a separate approval, additional testing or new authorization for a use with this specific antenna is required.

Refer to Chapter “Product family” for more information about the antenna.

UMCC cable

UMCC cable for the connection of an external RFID antenna to TWN4 Mini EVP SE M HF.

To disconnect the cable from the UMCC connectors on the external antenna and on the module, it is necessary to use a “U.FL extraction tool”. Do not use tweezers or apply manual force, as this may damage the cable, the antenna or the module.

In addition, ELATEC also offers other cables of different types (e.g. USB, RS-232) in various lengths for connecting their RFID modules to the intended host devices. Refer to the ELATEC website for more information.

4 MODE OF OPERATION

The mode of operation described in the following chapter is based on a standard ELATEC RFID reader module equipped with two LEDs. Depending on your product (number of LEDs, installed firmware, etc.) and in case the product settings have been modified with the ELATEC AppBlaster tool, the information below might differ from your product configuration when in operation. In particular, the color and sequence of the LEDs on your product might be different.

4.1 OPERATING MODE

To start operating the reader module, it simply has to be connected directly to a host device.

4.2 POWER UP

Once the reader module is connected to the host device, it detects the type of communications cable (e.g. USB, RS-232), with which it is connected to the host.

In case of RS-232:

- A version string is sent via RS-232 to the host device.
- A 5 V external power supply is required and must meet the following conditions:
  - ES1/PS2 classified power source according to IEC 62368-1
  - Short-circuit current < 8 A

4.3 ENUMERATION

Only applicable for USB version of reader modules:
Once the reader module has been powered up, it waits for completion of the enumeration by the USB host. As long as the reader module is not enumerated, it is in a minimum power consumption mode, where both LEDs are turned off.

4.4 INITIALIZATION

After powering up and enumeration (USB mode), the reader module turns on the built-in transponder reader logic. The green LED is turned on permanently. Some RFID modules need some kind of initialization, which is performed in this step. After successful initialization, the reader module sounds a short sequence, which consists of a lower tone followed by a higher tone.

4.5 NORMAL OPERATION

As soon as the reader module has completed the initialization, it enters the normal operation mode. During normal operation, the reader module searches for a transponder continuously.

4.6 DETECTION OF A TRANSPONDER

If a transponder is detected by the reader module, the following actions are performed:

- Send the ID to the host. By default, the USB devices send by emulating keystrokes of a keyboard. RS-232 devices send the ASCII code of an ID.
- Sound a beep.
- Turn off the green LED.
- Blink the red LED for two seconds.
- Turn on the green LED.

Within the two seconds timeout, where the red LED is blinking, the transponder, which just has been recognized will not be accepted again. This prevents the reader module from sending identical IDs more than one time to the host.
If during the two seconds timeout of the red LED a different transponder is detected, the complete sequence restarts immediately.

4.7 SUSPEND MODE

Only applicable for USB version of reader modules:
The USB version of reader modules supports the USB suspend mode. If the USB host signals suspend via the USB bus, the reader module turns off most of its power consuming peripherals. During this operation mode, no detection of transponders is possible and all LEDs are turned off. Once the host resumes to normal operation mode, this is also signaled via the USB bus. Therefore, the reader module will resume to normal operation too.

5 COMPLIANCE STATEMENTS

5.1 GENERAL STATEMENTS

5.1.1 ADDITIONAL TESTING REQUIREMENTS

TWN4 Mini EVP SE M HF has been certified as a module and do not need further approval, provided that the module is used with an antenna as specified in this manual (refer to Chapter "Product family"). The use of TWN4 Mini EVP SE M HF with another antenna than the one described in this manual is not part of the approvals granted to the module. In case TWN4 Mini EVP SE M HF is used with another antenna, a separate approval, additional testing or new authorization for a use with this specific antenna is required.

5.1.2 EU

Hereby, ELATEC GmbH declares that the RFID modules of the TWN4 Mini reader family comply with Directive 2014/53/EU. The full text of the respective EU declarations of conformity is available at the following internet address: elatec.com/approvals

5.1.3 FCC

The RFID modules of the TWN4 Mini reader family comply with the RF exposure requirements for mobile devices (47 CFR 2.1091). However, the devices shall be used in such a manner that the potential for human contact during normal operation is minimized.

5.1.4 UNITED KINGDOM

The RFID modules of the TWN4 Mini reader family comply with the requirements of the UK legislations and other regulations as listed in the respective UK declaration of conformity. The importer is responsible for applying the following information to the packaging of the product:

- the importer company's details, including the company's name and a contact address in the United Kingdom.
- UKCA marking

5.2 TWN4 MINI EVP SE M HF

5.2.1 FCC

FCC ID: WP5TWN4F26

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. (except receivers associated with operation of a licensed radio service and stand-alone devices).

Caution
The Federal Communications Commission (FCC) warns the users that changes or modifications to the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC §15.105 (b)
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.

5.2.2 ISED / ISDE CANADA

IC: 7948A-TWN4F26

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:
1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

5.3 TWN4 MINI EVP SI M HF

5.3.1 FCC

FCC ID: WP5TWN4F27

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. (except receivers associated with operation of a licensed radio service and stand-alone devices).

Caution
The Federal Communications Commission (FCC) warns the users that changes or modifications to the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC §15.105 (b)
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.

5.3.2 ISED / ISDE CANADA

IC: 7948A-TWN4F27

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:
1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

5.3.3 CHINA (PRC) / 中华人民共和国

Micropower scope of use declaration: TWN4 Mini EVP SI M HF supports transmission frequency of 13.56 MHz. The user needs to adhere to the following specifications when using the product: (1) The specific provisions listed in the "catalog and the technical specifications for micropower short-range radio transmission equipment" as well as the usage scenarios for the antenna type used, the functions, and the customary use of the	**微功率使用规范声明：** TWN4 Mini EVP SI M HF 支持 13.56MHz 发射频率，用户在使用过程中，需要遵守以下要求： （一） 符合"微功率短距离无线电发射设备目录和技术要求"的具体条款和使用场景，采用的天线类型和性能，控制、调整及开关等使用方法； 发射功率：

control system, regulation, and switches must be complied with; Transmission power: 13.56 MHz: ≤ 7.2 dBμA/m (field strength at 10 meters, standard max value) Antenna: built-in antenna (cannot be removed) Control system, regulation, and switches: The user cannot control, regulate, or switch over the radio transmission function of the antenna. (2) The unauthorized modification of usage scenarios or the conditions of use, expansion of the transmission frequency range, or increase of the transmission power (including installing additional transmission power amplifiers), as well as the unauthorized modification of the transmission antenna are not allowed; (3) The product may not interfere in any way with any legal radio transmitters (stations) and may not offer any shielding from harmful interference; (4) The product must be able to tolerate interference caused by industrial, scientific, and medical (ISM) devices which radiate high frequency energy or other legal interference from radio transmitters (stations); (5) Should the product cause harmful interference on other legal radio transmitters (stations), product use must be discontinued immediately and suitable measures must be taken prior to using the product again in order to eliminate said interference; (6) When using micropower devices inside of an aircraft or radiometric observatories, or when using such devices in meteorological radar stations, satellite ground stations (including measuring and control stations, distance measuring stations, receiving stations, or navigation stations), as well as in radio transmitters (stations) used by the military and electromagnetic environment protections zones at airports, all applicable provisions of the competent authorities as well as statutory provisions, national regulations, and national standards must be complied with;	13.56MHz：≤ 7.2dBμA/m (10 米处场强， 准峰值) 天线：内置天线（不可拆卸） 控制、调整及开关：用户不能控制、调制及开关此无线电发射功能 （二）不得擅自改变使用场景或使用条件、扩大发射频率范围、加大发射功率（包括额外加装射频功率放大器），不得擅自更改发射天线； （三）不得对其他合法的无线电台（站）产生有害干扰，也不得提出免受有害干扰保护； （四）应当承受辐射射频能量的工业、科学及医疗（ISM）应用设备的干扰或其他合法的无线电台（站）干扰； （五）如对其他合法的无线电台（站）产生有害干扰时，应立即停止使用，并采取措施消除干扰后方可继续使用； （六）在航空器内和依据法律法规、国家有关规定、标准划设的射电天文台、气象雷达站、卫星地球站（含测控、测距、接收、导航站）等军民用无线电台（站）、机场等的电磁环境保护区域内使用微功率设备，应当遵守电磁环境保护及相关行业主管部门的规定； （七）禁止在以机场跑道中心点为圆心、半径 5000 米的区域内使用各类模型遥控器； （八）微功率设备使用时温度和电压的环境条件。 TWN4 Mini EVP SI M HF 的工作电压 3.15V-5.5V， 工作温度-25℃~80℃， 储存温度-40℃~85℃。 用户需严格按照此温度和电压要求使用。

(7) Remote controls of any kind may not be used within 5000 meters of airport runways, measured from the middle of the runway; (8) Ambient conditions such as temperature and voltage when using micropower devices: operating voltage of TWN4 Mini EVP SI M HF: 3.15 V – 5.5 V DC, operating temperature: -25 °C – 80 °C, storage temperature: -40 °C – 85 °C. The user must strictly adhere to these temperature and voltage specifications when using the product.	

5.4 TWN4 MINI EVPU SI M HF

5.4.1 FCC

FCC ID: WP5TWN4F35

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. (except receivers associated with operation of a licensed radio service and stand-alone devices).

Caution
The Federal Communications Commission (FCC) warns the users that changes or modifications to the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC §15.105 (b)
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.

5.4.2 ISED / ISDE CANADA

IC: 7948A-TWN4F35

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:
1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

5.5 TWN4 MULTITECH HF MINI / TWN4 MINI READER MIFARE NFC

5.5.1 FCC

FCC ID: WP5TWN4F15

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. (except receivers associated with operation of a licensed radio service and stand-alone devices).

Caution
The Federal Communications Commission (FCC) warns the users that changes or modifications to the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC §15.105 (b)
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.

5.5.2 ISED / ISDE CANADA

IC: 7948A-TWN4F15

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:
1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

5.5.3 CHINA (PRC) / 中华人民共和国

Micropower scope of use declaration: TWN4 Mini Reader MIFARE NFC supports transmission frequency of 13.56 MHz. The user needs to adhere to the following specifications when using the product: (1) The specific provisions listed in the "catalog and the technical specifications for micropower short-range radio transmission equipment" as well as the usage scenarios for the antenna type used, the functions, and the customary use of the control system, regulation, and switches must be complied with; Transmission power: 13.56 MHz: ≤ 2.6 dBμA/m (field strength at 10 meters, standard max value) Antenna: built-in antenna (cannot be removed) Control system, regulation, and switches: The user cannot control, regulate, or switch over the radio transmission function of the antenna. (2) The unauthorized modification of usage scenarios or the conditions of use, expansion of the transmission frequency range, or increase of the transmission power (including installing additional transmission power amplifiers), as well as the unauthorized modification of the transmission antenna are not allowed; (3) The product may not interfere in any way with any legal radio transmitters (stations) and may not offer any shielding from harmful interference;	**微功率使用规范声明：** TWN4 Mini Reader MIFARE NFC 支持 13.56MHz 发射频率，用户在使用过程中，需要遵守以下要求： （二） 符合"微功率短距离无线电发射设备目录和技术要求"的具体条款和使用场景，采用的天线类型和性能，控制、调整及开关等使用方法； 发射功率： 13.56MHz：≤ 2.6dBμA/m (10 米处场强， 准峰值) 天线：内置天线（不可拆卸） 控制、调整及开关：用户不能控制、调制及开关此无线电发射功能 （二）不得擅自改变使用场景或使用条件、扩大发射频率范围、加大发射功率（包括额外加装射频功率放大器），不得擅自更改发射天线； （三）不得对其他合法的无线电台（站）产生有害干扰，也不得提出免受有害干扰保护； （四）应当承受辐射射频能量的工业、科学及医疗（ISM）应用设备的干扰或其他合法的无线电台（站）干扰；

(4) The product must be able to tolerate interference caused by industrial, scientific, and medical (ISM) devices which radiate high frequency energy or other legal interference from radio transmitters (stations); (5) Should the product cause harmful interference on other legal radio transmitters (stations), product use must be discontinued immediately and suitable measures must be taken prior to using the product again in order to eliminate said interference; (6) When using micropower devices inside of an aircraft or radiometric observatories, or when using such devices in meteorological radar stations, satellite ground stations (including measuring and control stations, distance measuring stations, receiving stations, or navigation stations), as well as in radio transmitters (stations) used by the military and electromagnetic environment protections zones at airports, all applicable provisions of the competent authorities as well as statutory provisions, national regulations, and national standards must be complied with; (7) Remote controls of any kind may not be used within 5000 meters of airport runways, measured from the middle of the runway; (8) Ambient conditions such as temperature and voltage when using micropower devices: operating voltage of TWN4 Mini Reader MIFARE NFC: 3.15 V – 5.5 V DC, operating temperature: -25 °C – 80 °C, storage temperature: -40 °C – 85 °C. The user must strictly adhere to these temperature and voltage specifications when using the product.	（五）如对其他合法的无线电台（站）产生有害干扰时，应立即停止使用，并采取措施消除干扰后方可继续使用； （六）在航空器内和依据法律法规、国家有关规定、标准划设的射电天文台、气象雷达站、卫星地球站（含测控、测距、接收、导航站）等军民用无线电台（站）、机场等的电磁环境保护区域内使用微功率设备，应当遵守电磁环境保护及相关行业主管部门的规定； （七）禁止在以机场跑道中心点为圆心、半径 5000 米的区域内使用各类模型遥控器； （八）微功率设备使用时温度和电压的环境条件。 TWN4 Mini Reader MIFARE NFC 的工作电压 3.15V-5.5V， 工作温度-25℃~80℃， 储存温度-40℃~85℃。 用户需严格按照此温度和电压要求使用。

APPENDIX

A – RELEVANT DOCUMENTATION

ELATEC documentation

- TWN4 Mini reader family, user manual/instructions for use
- TWN4 Mini EVP SE M HF data sheet
- TWN4 Mini EVP SE M HF integration manual
- TWN4 Mini EVP SI M HF data sheet
- TWN4 Mini EVP SI M HF integration manual
- TWN4 Mini EVPU SI M HF data sheet
- TWN4 Mini EVPU SI M HF integration manual
- TWN4 MultiTech HF Mini data sheet
- TWN4 MultiTech HF Mini integration manual
- TWN4 MultiTech Mini technical handbook

External documentation

- Technical documentation related to the host system

B – TERMS AND ABBREVIATIONS

TERM	EXPLANATION
DC	direct current
EMC	electromagnetic compatibility
HF	high frequency
MTBF	mean time between failures
RFID	radio frequency identification
R/W	read/write (distance)
SAR	specific absorption rate

C – REVISION HISTORY

VERSION	CHANGE DESCRIPTION	EDITION
XX	New product TWN4 EVPU SI M HF added	04/2026
04	Chapters “Safety information”, “Accessories”, “Compliance statements” and “Relevant documentation” updated	07/2025
03	Product pictures, chapters “Intended use” and “Relevant documentation” updated	11/2024
02	New products TWN4 Mini EVP SE M HF and TWN4 Mini EVP SI M HF added	07/2024
01	First edition	05/2024

HQ / EUROPE
ELATEC GmbH
Zeppelinstraße 1
82178 Puchheim, Germany
P +49 89 552 9961 0
F +49 89 552 9961 129
info.elatec@allegion.com

AMERICAS
ELATEC Inc.
1995 SW Martin Hwy.
Palm City, FL 34990, USA
P +1 772 210 2263
F +1 772 382 3749
info.elatecus@allegion.com

APAC
ELATEC Singapore
1 Scotts Road #21-10 Shaw
Centre, Singapore 228208
P +65 9670 4348

apac.info.elatec@allegion.com

MIDDLE EAST
ELATEC Middle East
Trading FZE
P.O. Box 16868, Dubai, UAE
P +971 50 9322691

info.elatec.ue@allegion.com

elatec.com

ELATEC reserves the right to change any information or data in this document without prior notice. ELATEC declines all responsibility for the use of this product with any other specification but the one mentioned above. Any additional requirement for a specific customer application has to be validated by the customer themselves at their own responsibility. Where application information is given, it is only advisory and does not form part of the specification. Disclaimer: All names used in this document are registered trademarks of their respective owners.