TWN4 Elatec Desktop Card Reader User Manual

ELATEC
RFID Systems

TWN4 MultiTech family
TWN4 MultiTech
TWN4 MultiTech LEGIC / TWN4 LEGIC NFC
TWN4 MultiTech LEGIC M
TWN4 MultiTech M
USER MANUAL

Contents

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

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.
- 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

- 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 lightemitting 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 readers/modules of the TWN4 MultiTech family fulfill general radio and EMC requirements. However, users with a pacemaker or any other medical device should use the readers/modules carefully and refer to the information given by the manufacturer of their medical devices before using the readers/modules or any host device containing the readers/modules.

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 RFID readers/modules of the TWN4 MultiTech family do not need any special cleaning. However, the housing of the RFID desktop readers may be carefully cleaned up with a soft, dry cloth and a non-aggressive or non-halogenated cleaning agent on the outer surface only.
  - Make sure that the cloth and cleaning agent used to clean up the housing of TWN4 MultiTech desktop readers do not damage the product or its components (e.g. label(s)).
  - Do not use any detergents or other cleaning agents on the TWN4 MultiTech RFID modules.

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.

PRODUCT DESCRIPTION

3.1 INTENDED USE

The RFID readers and modules of the TWN4 MultiTech family allow users to read and write RFID media in the 125 kHz (LF) and 13.56 MHz (HF) frequency bands. The desktop readers are for indoor use only, whereas the RFID modules are intended to be integrated into a host device. All devices must be used in environmental conditions according to the respective product data sheets and installation instructions related to the products.
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 MultiTech family contains the following RFID devices:

3.2.1 RFID DESKTOP READERS

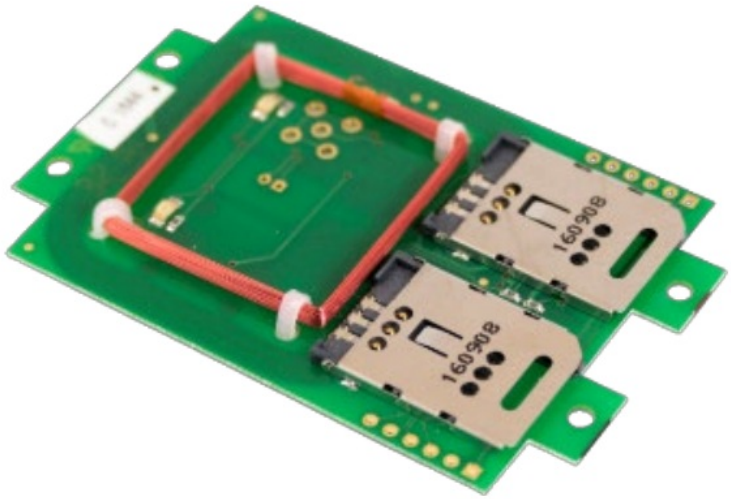
TWN4 MultiTech

Frequencies	125 kHz (LF) / 13.56 MHz (HF)
Antennas	Integrated RFID LF antenna Dimensions: 29.00 x 32.00 mm / 1.14 x 1.26 inch Number of turns: 164 Integrated RFID HF antenna Dimensions: 44.00 x 46.00 mm / 1.73 x 1.81 inch Number of turns: 3
Frequencies Antennas	Approx. 88.00 x 56.00 x 18.50 mm / 3.46 x 2.20 x 0.73 inch
Power	USB: 4.3 V – 5.5 V RS-232: requires 5 V external power supply ES1/PS2 classified power source according to IEC 62368-1, short-circuit current < 8 A
Current consumption	RF field on: 120 mA typically / Sleep: 500 µA typ.
Temperature ranges	Operating: -25 °C up to +70 °C / -13 °F up to +158 °F Storage: -40 °C up to +75 °C / -40 °F up to +167 °F
Relative humidity	5% to 95% non-condensing
R/W distance	LF and HF: up to 100 mm / 4 inch, depending on environment and transponder
MTBF	500,000 hours
Weight	Approx. 120 g / 4.23 oz (with cable)

TWN4 MultiTech LEGIC (registered under the model name TWN4 LEGIC NFC)

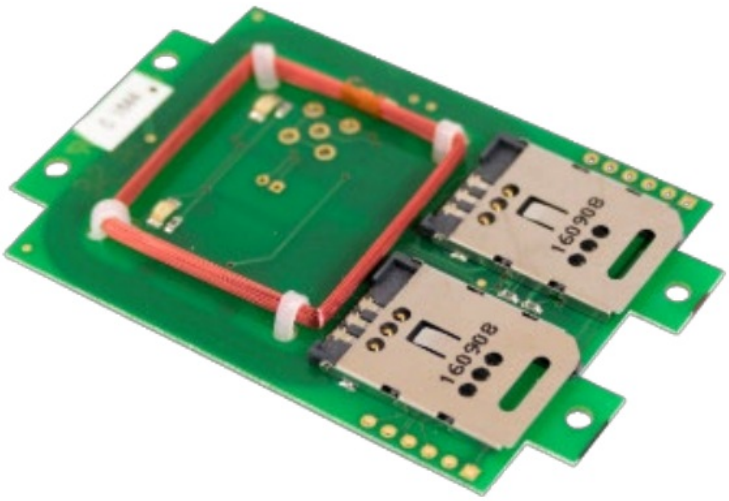
Frequencies	125 kHz (LF) / 13.56 MHz (HF)
Antennas	Integrated RFID LF antenna Dimensions: 29.00 x 32.00 mm / 1.14 x 1.26 inch Number of turns: 164 Integrated RFID HF antenna Dimensions: 44.00 x 46.00 mm / 1.73 x 1.81 inch Number of turns: 3
Dimensions (L x W x H)	Approx. 88.00 x 56.00 x 18.50 mm / 3.46 x 2.20 x 0.73 inch
Power	USB: 4.3 V – 5.5 V RS-232: requires 5 V external power supply ES1/PS2 classified power source according to IEC 62368-1, short-circuit current < 8 A
Current consumption	RF field on: 140 mA typically
Temperature ranges	Operating: -25 °C up to +70 °C / -13 °F up to +158 °F Storage: -40 °C up to +75 °C / -40 °F up to +167 °F
Relative humidity	5% to 95% non-condensing
R/W distance	LF and HF: up to 100 mm / 4 inch, depending on environment and transponder
MTBF	500,000 hours
Weight	Approx. 120 g / 4.23 oz (with cable)

3.2.2 RFID MODULES
TWN4 MultiTech LEGIC M



Frequencies	125 kHz (LF) / 13.56 MHz (HF)
Antennas	Integrated RFID LF antenna Dimensions: 29.00 x 32.00 mm / 1.14 x 1.26 inch Number of turns: 164 Integrated RFID HF antenna Dimensions: 44.00 x 46.00 mm / 1.73 x 1.81 inch Number of turns: 3
Dimensions (L x W x H)	Approx. 76.00 x 49.00 x 14.00 mm / 2.99 x 1.93 x 0.55 inch
Power	USB: 4.3 V – 5.5 V Connector CNA: 3.3 V ± 5% RS-232: requires 5 V external power supply ES1/PS2 classified power source according to IEC 62368-1, short-circuit current < 8 A
Current consumption	RF field on: 140 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	LF and HF: up to 100 mm / 4 inch, depending on environment and transponder
MTBF	500,000 hours
Weight	Approx. 10 g / 0.35 oz (without cable)

TWN4 MultiTech M



Frequencies	125 kHz (LF) / 13.56 MHz (HF)
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Dimensions (L x W x H)	Approx. 76.00 x 49.00 x 11.00 mm / 2.99 x 1.93 x 0.55 inch
Power	USB: 4.3 V – 5.5 V Connector CNA: 3.3 V ± 5% RS-232: requires 5 V external power supply ES1/PS2 classified power source according to IEC 62368-1, short-circuit current < 8 A
Current consumption	RF field on: 120 mA typically / Sleep: 500 µA typ.
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	LF and HF: up to 100 mm / 4 inch, depending on environment and transponder
MTBF	500,000 hours
Weight	Approx. 12 g / 0.43 oz (without cable)

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

3.3 FIRMWARE

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

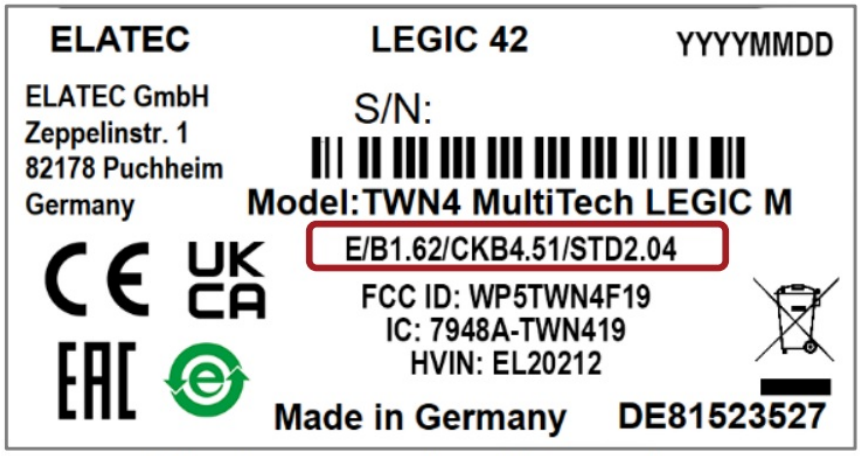

Fig. 1 - exemplary illustration

3.4 LABELING

The RFID readers and modules of the TWN4 MultiTech family are delivered ex-works with a label (Fig. 1) attached on the rear side of the housing or directly on the module.

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.

In addition, once an RFID module 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 RFID module and to the documentation related to the host device.

3.5 ACCESSORIES

The RFID readers and modules of the TWN4 MultiTech family ca be delivered with the following optional components:

Bracket holder
The bracket holder is a simple solution for attaching an RFID desktop reader to a flat surface. It consists of one ground plate and two brackets with screws and a double-sided strong adhesive pad. For optional additional screwing, an extra hole is located on the base plate.

Snap-in holder
The snap-in holder is another solution for attaching an RFID desktop reader to a flat surface. It can be fixed with either adhesive pads or screws.
In addition, ELATEC also offers external power supplies for devices with RS-232 interface and cables of different types (e.g. USB) in various lengths for connecting the RFID modules of the TWN4 MultiTech family to the intended host devices.
Refer to the ELATEC website for more information about the available cables and accessories.

INSTALLATION

The RFID desktop readers of the TWN4 MultiTech family are Plug & Play devices that simply need to be connected to a host device (e.g. printer). Optionally, the readers can be fixed to a flat surface with a compatible holder. Refer to Chapter “Accessories” for more information.
The RFID modules of the TWN4 MultiTech family are intended to be integrated into a host system. Refer to the integration manual of your RFID module for more information about the installation and electrical connection to the host device.

MODE OF OPERATION

The mode of operation described in the following chapter is based on a standard ELATEC RFID reader 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.

5.1 OPERATING MODE

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

5.2 POWER UP

Once the reader is connected to the host device, it detects the type of communication 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

5.3 ENUMERATION

Only applicable for USB version of readers:

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

5.4 INITIALIZATION

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

5.5 NORMAL OPERATION

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

5.6 DETECTION OF A TRANSPONDER

If a transponder is detected by the reader, 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 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.

5.7 SUSPEND MODE

Only applicable for USB version of reader modules:

The USB version of readers support the USB suspend mode. If the USB host signals suspend via the USB bus, the reader 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 will resume to normal operation too.

COMPLIANCE STATEMENTS

6.1 GENERAL STATEMENTS

6.1.1 RF EXPOSURE STATEMENT

The RFID readers and modules of the TWN4 MultiTech family comply with the RF exposure requirements for mobile and fixed 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.

6.1.2 MEXICO

6.2 TWN4 MULTITECH

6.2.1 EU

Hereby, ELATEC GmbH declares that TWN4 MultiTech complies with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: **elatec.com/approvals**

6.2.2 FCC

FCC ID: WP5TWN4F1

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.

6.2.3 ISED / ISDE CANADA

Contains IC: 7948A-TWN4F1

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.

6.2.4 BRAZIL / BRASIL

6.2.5 CHINA (PRC)

Micropower scope of use declaration:

TWN4 MultiTech supports transmission frequencies of 13.56 MHz and 125 kHz. 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 thecontrol system, regulation, and switches must becomplied with;

   Transmission power:

   13.56 MHz: ≤ 1.12 dBµA/m

   (field strength at 10 meters, standard max value)

   125 kHz: ≤ -8.43 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 interferenceon 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 MultiTech: 4.3 V – 5.5 V (charging via USB), operating temperature: -25 °C – 70 °C, storage temperature: -40 °C – 75 °C.

The user must strictly adhere to these temperature and voltage specifications when using the product.

6.2.9 UNITED KINGDOM

TWN4 MultiTech complies 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:’

UK
CA

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

6.3 TWN4 MULTITECH LEGIC

6.3.1 EU

Hereby, ELATEC GmbH declares that TWN4 MultiTech LEGIC / TWN4 LEGIC NFC complies with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: **elatec.com/approvals**

6.3.2 FCC

FCC ID: WP5TWN4F5

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.

6.3.3 ISED / ISDE CANADA

IC: 7948A-TWN4F5

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.

6.3.4 ARGENTINA

 RAMATEL H-21649

6.3.5 CHINA (PRC)

Micropower scope of use declaration:

TWN4 MultiTech LEGIC supports transmission frequencies of 13.56 MHz and 125 kHz. 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: ≤ -4.06 dBµA/m

(field strength at 10 meters, standard max value)

125 kHz: ≤ -7.06 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;
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 MultiTech LEGIC: 4.3 V – 5.5 V (charging via USB), operating temperature: -25 °C – 70 °C, storage temperature: -40 °C – 75 °C.

The user must strictly adhere to these temperature and voltage specifications when using the product.

6.3.6 MOROCCO

AGRÉÉ PAR L'ANRT MAROC
Numéro d'agrément : MR 17718 ANRT 2018
Date d'agrément : 16/10/2018

6.3.7 TAIWAN

6.3.8 THAILAND

6.3.9 UKRAINE

6.3.10 UNITED KINGDOM

TWN4 MultiTech LEGIC / TWN4 LEGIC NFC complies 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:

UK
CA

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

6.4 TWN4 MULTITECH LEGIC M

6.4.1 EU

Hereby, ELATEC GmbH declares that TWN4 MultiTech LEGIC M complies with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following internet address: **elatec.com/approvals**

6.4.2 FCC

Contains FCC ID: WP5TWN4F19
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.

6.4.3 ISED / ISDE CANADA

Contains IC: 7948A-TWN4F19
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.

6.4.4 CHINA (PRC)

Micropower scope of use declaration:
TWN4 MultiTech LEGIC M supports transmission frequencies of 13.56 MHz and 125 kHz. 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: ≤ -4.62 dBµA/m (field strength at 10 meters, standard max value)

125 kHz: ≤ -8.07 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 fromradio transmitters (stations);
5. Should the product cause harmful interferencon 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 MultiTech LEGIC M:4.3 V – 5.5 V (charging via USB), 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.

6.4.5 UNITED KINGDOM

TWN4 MultiTech LEGIC M complies 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:

UK
CA

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

6.5 TWN4 MULTITECH M

6.5.1 EU

Hereby, ELATEC GmbH declares that TWN4 MultiTech M complies with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: **elatec.com/approvals**

6.5.2 FCC

Contains FCC ID: WP5TWN4F17
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.

6.5.3 ISED / ISDE CANADA
Contains IC: 7948A-TWN4F17
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.

6.5.4 CHINA (PRC)
Micropower scope of use declaration:
TWN4 MultiTech M supports transmission frequencies of 13.56 MHz and 125 kHz. 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: ≤ 1.12 dBμA/m (field strength at 10 meters, standard max value)
2. 125 kHz: ≤ -8.43 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.
3. 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;

4. The product may not interfere in any way with any legal radio transmitters (stations) and may not offer any shielding from harmful interference;
5. 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);
6. 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;
7. When using micropower devices inside of an aircraft or radiometric observatories, or when using such devices in meteorological radar tations, 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;
8. Remote controls of any kind may not be used within 5000 meters of airport runways, measured from the middle of the runway;
9. Ambient conditions such as temperature and voltage when using micropower devices: operating voltage of TWN4 MultiTech M: 4.3 V – 5.5 V (charging via USB), 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.

6.5.5 UNITED KINGDOM

TWN4 MultiTech M complies 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:

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- UKCA marking

APPENDIX

A – RELEVANT DOCUMENTATION

ELATEC documentation

- ELATEC quick start guide
- TWN4 MultiTech data sheet
- TWN4 MultiTech LEGIC data sheet
- TWN4 MultiTech LEGIC M data sheet
- TWN4 MultiTech LEGIC M integration manual
- TWN4 MultiTech M data sheet
- TWN4 MultiTech M integration manual
- TWN4 MultiTech OEM PCBs handbook

External documentation

- Technical documentation related to the installation site or connected devices

B – TERMS AND ABBREVIATIONS

TERM	EXPLANATION
EMC	electromagnetic compatibility
HF	high frequency
LF	low frequency
MTBF	mean time between failures
RFID	radio frequency identification
R/W	read/write (distance)

C – REVISION HISTORY

VERSION	CHANGE DESCRIPTION	EDITIO
01	First edition	05/2024

ELATEC
RFID Systems
elatec.com
EMEA
Puchheim, Germany
+49 89 552 9961 0
sales-rfid@elatec.com
AMERICAS
Palm City, Florida, USA
+1 772 210 2263
americas-info@elatec.com
ASIA
Shenzhen, China
+86 755 23946014
apac-info@elatec.com

Documents / Resources

	**ELATEC TWN4 Elatec Desktop Card Reader** [pdf] User Manual TWN4 Elatec Desktop Card Reader, TWN4, Elatec Desktop Card Reader, Desktop Card Reader, Card Reader, Reader

References

- **User Manual**