TWN4 PALON SQUARE M LF HF

INTEGRATION MANUAL
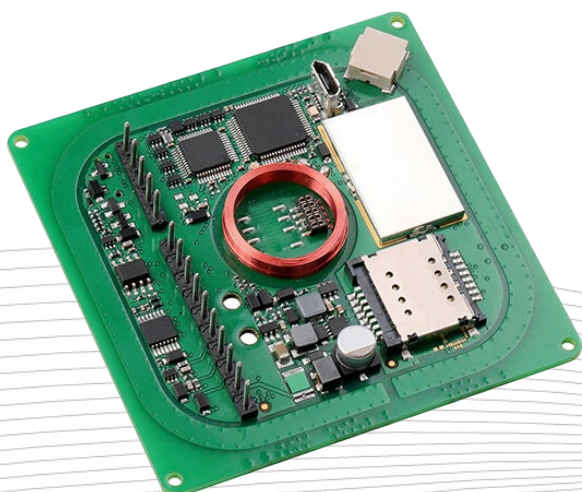
TABLE OF CONTENTS

1 INTRODUCTION

1.1 ABOUT THIS MANUAL

This integration manual explains how to integrate ELATEC RFID reader/writer module TWN4 Palon Square M LF HF into a host device and is mainly intended for integrators and host manufacturers. Before installing the product, the integrators should read and understand the content of this integration manual and other relevant installation documents.

The content of this integration manual is subject to changes without prior notice and printed versions might be obsolete. Integrators and host manufacturers are required to use the latest version of this integration 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 integration manual has been written in English. Wherever the integration 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 ABOUT TWN4 PALON SQUARE M LF HF

TWN4 Palon Square M LF HF is a versatile OEM PCB for integration into third-party products and devices. It supports enhanced interfaces, especially RS-485. The new single PCB module inherits all advantages and tool support of the ELATEC TWN4 family. Although being a general-purpose PCB module, it is optimized for time attendance and access control.

1.3 ELATEC SUPPORT

In case of any technical questions, refer to the ELATEC website (www.elatec.com) or contact ELATEC technical support at:

support-rfid@elatec.com

1.4 REVISION HISTORY

VERSION	CHANGE DESCRIPTION	EDITION
02	Chapters "About this Manual", "Safety Information" and "Compliance Statements" updated	02/2022
01	First edition	09/2021

2 SAFETY INFORMATION

- ELATEC TWN4 Palon Square M LF HF is an electronic component and should be installed exclusively by a trained and qualified personnel.

- ELATEC recommends the integrators to follow general ESD protective measures during the installation of TWN4 Palon Square M LF HF into a host device, e.g. the use of an antistatic wristband or special gloves.

- The integrator should not touch the antennas (if not shielded), printed circuit boards, connectors or other sensitive components on TWN4 Palon Square M LF HF.

- Metallic materials on or in direct vicinity to the product might reduce the reading performance of the product. Refer to the installation instructions for more information.

- Before installing TWN4 Palon Square M LF HF into a host device, the integrator should also make sure that he/she has read and understood the ELATEC technical documentation related to TWN4 Palon Square M LF HF, as well as the technical documentation related to the host device. In particular, the instructions and safety information given in the user manual of TWN4 Palon Square M LF HF should be read carefully and listed in the technical documentation of the host manufacturer as well, as soon as these instructions and safety information are required for a safe and proper use of the host device containing TWN4 Palon Square M LF HF.

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

3 INTEGRATION INSTRUCTIONS

3.1 GENERAL

TWN4 Palon Square M LF HF may be installed in any host devices, as long as it is operated under the operational conditions stated in the user manual and other technical documents (e.g. data sheet). TWN4 Palon Square M LF HF is equipped with two integrated antennas. Thus, no antenna installation is required.

3.2 LIST OF APPLICABLE RULES

Refer to the approval certificates, grants and declarations of conformity issued for TWN4 Palon Square M LF HF, and to Chapter "Compliance Statements" for a detailed list of the rules applicable to TWN4 Palon Square M LF HF.

3.3 SPECIFIC OPERATIONAL USE CONDITIONS

There are no specific operational use conditions for TWN4 Palon Square M LF HF other than the conditions mentioned in the user manual and data sheet of TWN4 Palon Square M LF HF. The host manufacturer or integrator must ensure that these use conditions comply with the use conditions of the host device. In addition, these use conditions must be stated in the user manual of the host device.

3.4 LIMITED MODULE PROCEDURES

n/a

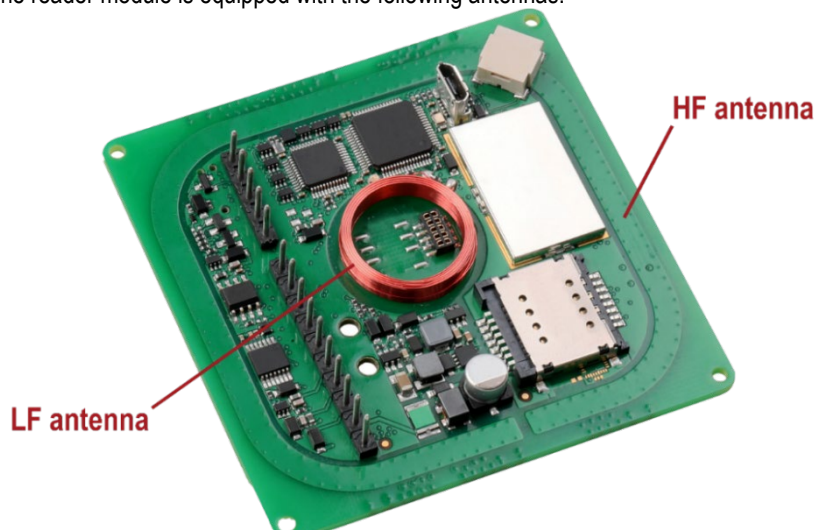## 3.5 TRACE ANTENNA DESIGN

n/a

3.6 RF EXPOSURE CONSIDERATIONS

The module antenna(s) must be installed to meet the RF exposure compliance separation distance of 20 cm and any additional testing and authorization process as required.
Refer to Chapter "Compliance Statements" for detailed information about the radio frequency exposure conditions applicable to TWN4 Palon Square M LF HF.
These RF exposure conditions must be stated in the end-product manual(s) of the host product manufacturer.

3.7 ANTENNAS

The reader module is equipped with the following antennas:

HF antenna (13.56 MHz)

Dimensions: 62 mm x 62 mm /
2.44 inch x 2.44 inch
Number of turns: 2

LF antenna (125 kHz)

Diameter: 20 mm / 0.79 inch
Number of turns: 234

For more information, refer to the related product data sheet or other relevant technical documents.

3.8 LABEL AND COMPLIANCE INFORMATION

Refer to Chapters "Compliance Statements" and "Integrator and Host Requirements" for detailed label and compliance information.
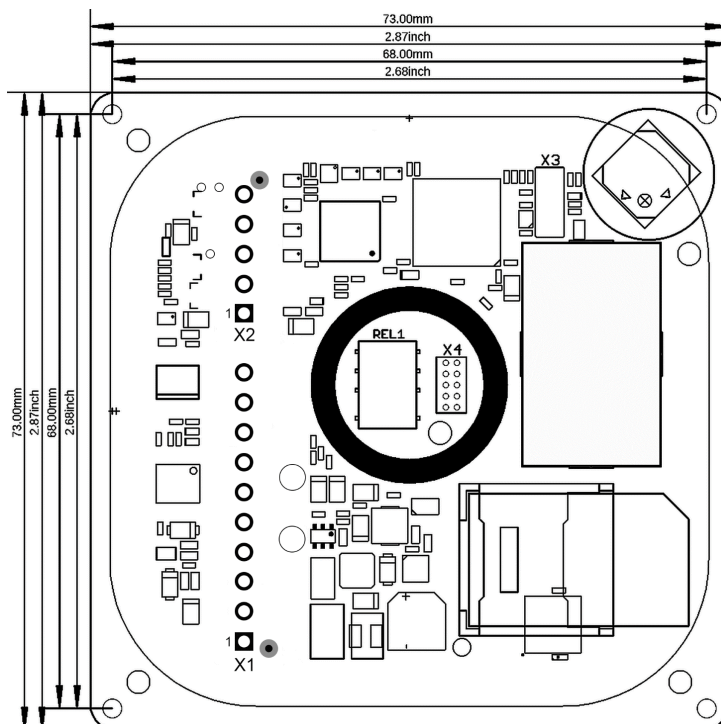
3.9 TEST MODES AND ADDITIONAL TESTING REQUIREMENTS

No specific testing method has been defined by ELATEC for TWN4 Palon Square M LF HF.
TWN4 Palon Square M LF HF has been tested and found in compliance with the specifications noted on the approval certificates and other relevant approval documents. However, the integrator is still responsible for any additional testing and authorization process required for the end product.

3.10 MECHANICAL INSTALLATION

The reader can be mounted with four screws M2.0.

3.11 ELECTRICAL CONNECTION

ASSIGNMENT

	X1 PIN	X2 PIN	X4 PIN
1	GND	Relay N.C. Normally Closed	VOUT +5V
2	VIN 9 – 30 Volt	Relay N.O. Normally Open	GND
3	Reserved, do not connect	Relay Common	I²C SDA
4	Wiegand D0 or DATA, TTL	TAMPER IN, TTL, RFU	I²C SCL
5	Wiegand D1 or CLOCK, TTL	GND	OUT, TTL, RFU
6	IN1, TTL, RFU		IN, TTL, RFU
7	IN2, TTL, RFU		GND
8	IN3, TTL, RFU		GND
9	RS-485 A		N.C. reserved, do not connect
10	RS-485 B		N.C. reserved, do not connect

3.12 PROGRAMMATION/SOFTWARE INTEGRATION

n/a

4 COMPLIANCE STATEMENTS

4.1 EU

TWN4 Palon Square M LF HF is in compliance with the EU directives and regulations as listed in the respective declaration of conformity.

4.2 UNITED KINGDOM

TWN4 Palon Square M LF HF 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:

UKCA

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

4.3 RF EXPOSURE COMPLIANCE

RF exposure statement (mobile and fixed devices)
This device complies with the RF exposure requirements for mobile and fixed devices. However, the device shall be used in such a manner that the potential for human contact during normal operation is minimized.

5 INTEGRATOR AND HOST REQUIREMENTS

Compliance statements

All statements listed in Chapter "Compliance statements" of this integration manual must be also listed in the user manual of the host device.

Special accessories

Where special accessories such as shielded cables and/or special connectors are required to comply with the emission limits, the instruction manual shall include appropriate instructions on the first page of the text describing the installation of the device.

Simultaneous transmission

When the host product supports simultaneous-transmission operations the host manufacturer needs to check if there are additional RF exposure filing requirements due to the simultaneous transmissions. When additional application filing for RF exposure compliance demonstration is not required (e. g. the RF module in combination with all simultaneously operating transmitters complies with the RF exposure simultaneous transmission SAR test exclusion requirements), the host manufacturer may do his own evaluation without any filing, using reasonable engineering judgment and testing for confirming compliance with out-of-band, restricted band, and spurious emission requirements in the simultaneous-transmission operating modes. If additional filing is required please contact the person at ELATEC GmbH responsible for certification of the RF module.

APPENDIX

A – TERMS AND ABBREVIATIONS

TERM	EXPLANATION
host device	Also "host" or "host product". Device in which an RFID module is intended to be installed for operation.
Integrator	Responsible party for the integration of an RFID module into a host device. The integrator might be the module manufacturer, the host manufacturer, the end user or any other third party.
modular type	Physical configuration in which a modular transmitter operates when installed within a host device. It can be a single-modular, a limited single-modular, a split-modular or a limited split-modular type.
n/a	Not applicable
RFID (reader/writer) module	Device intended to be used within another device or product. Depending on the equipment configuration and intended use, an RFID module has to meet different requirements to get a modular grant.

B – RELEVANT DOCUMENTATION

ELATEC documentation
- TWN4 Palon Square M LF HF data sheet
- TWN4 Palon Square M LF HF functional description
- TWN4 Palon Square M LF HF user manual
- TWN4 Palon Technical Handbook

External documentation

Document name	Document title/description	Source
n/a	Technical documentation related to the host product	Host product manufacturer

For more information about this integration manual or TWN4 Palon Square M LF HF, go to www.elatec.com or contact ELATEC.

ELATEC

RFID Systems

ELATEC GMBH

Zeppelinstr. 1 • 82178 Puchheim • Germany
P +49 89 552 9961 0 • F +49 89 552 9961 129 • E-mail: info-rfid@elatec.com
elatec.com