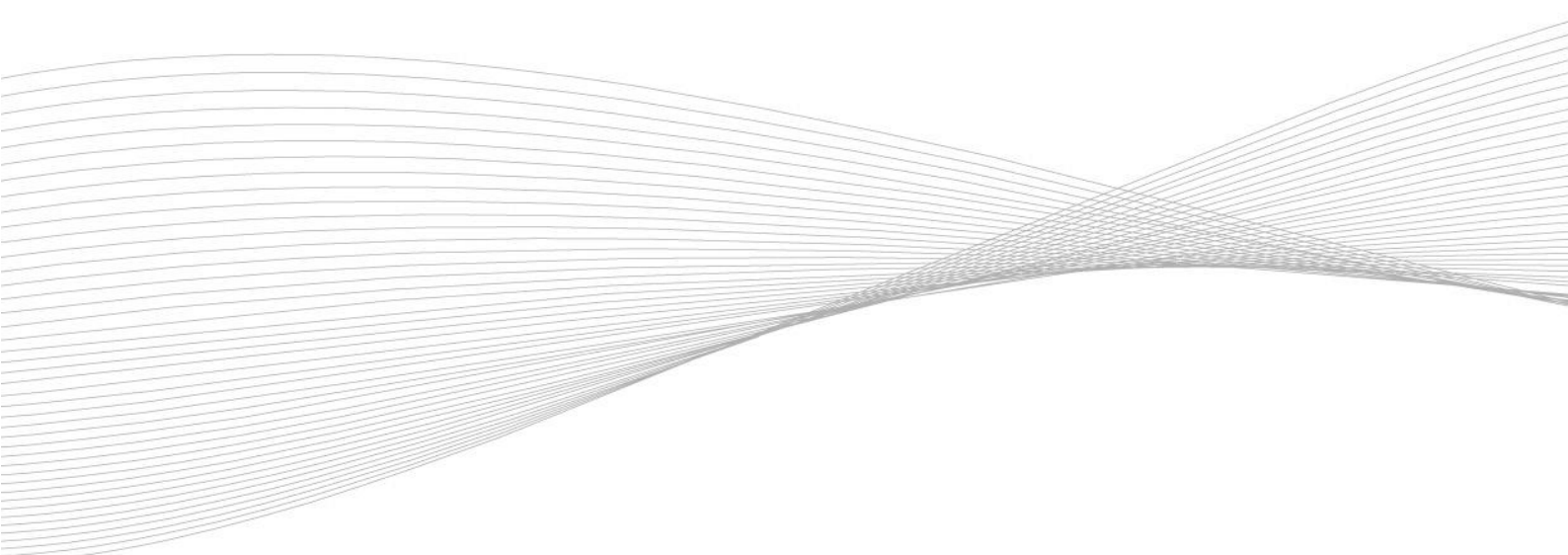


# EINTLEG

## INTEGRATION MANUAL



# TABLE OF CONTENTS

INTRODUCTION .....	3
ABOUT THIS MANUAL .....	3
SAFETY NOTES .....	3
TERMS AND DEFINITIONS.....	3
RELEVANT DOCUMENTATION.....	3
REVISION HISTORY .....	4
ABOUT EINTLEG .....	4
INTEGRATION IN OTHER DEVICES .....	4
LIMITED MODULE PROCEDURES.....	4
MECHANICAL INSTALLATION .....	5
ELECTRICAL CONNECTION .....	5
LIST OF ANTENNAS.....	6
RF EXPOSURE CONSIDERATIONS.....	6
COMPLIANCE STATEMENTS.....	7

# INTRODUCTION

## ABOUT THIS MANUAL

This integration manual explains how to integrate ELATEC RFID module EINTLEG into a host device. This module is not for sale, it will only be used for ELATEC’s own host products.

The content of this integration manual is subject to changes and printed versions might be obsolete. As the module manufacturer, ELATEC is responsible for the update, release and publication on the FCC database of this integration manual. The integrators at ELATEC are required to use the latest integration manual published by ELATEC on the FCC database.

ELATEC and its integrators are liable for any failure to observe these requirements.

## SAFETY NOTES

- ELATEC EINTLEG 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 the EINTLEG in 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 the EINTLEG.
- Before installing the EINTLEG in a host device, the integrator should also make sure that he/she has read and understood the technical documentation of the host manufacturer related to the host device.

## TERMS AND DEFINITIONS

Term	Definition
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.
RFID 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.

## RELEVANT DOCUMENTATION

### ELATEC documentation

- EINTLEG data sheet
- EINTLEG functional description
- EINTLEG user manual

### External documentation

Document name	Document title/description	Source
n/a	Technical documentation related to the host product	Host product manufacturer
784748 D01 General labeling and Notification	General Guidelines for Labeling and Other Information Required to be Provided to Users	Federal Communications Commission Office of Engineering and Technology Laboratory Division
996369 D01 Module Equip Auth Guide	Transmitter Module Equipment Authorization Guide	Federal Communications Commission Office of Engineering and Technology Laboratory Division
996369 D02 Module Q and A	Frequently Asked Questions and Answers about Modules	Federal Communications Commission Office of Engineering and Technology

		Laboratory Division
996369 D03 OEM Manual	Guidance for Modular Transmitter Instruction Manuals and TCB Certification Application Reviews	Federal Communications Commission Office of Engineering and Technology Laboratory Division
996369 D04 Module Integration Guide	Modular Transmitter Integration Guide— Guidance for Host Product Manufacturers	Federal Communications Commission Office of Engineering and Technology Laboratory Division

For more information about this integration manual or the EINTLEG, go to [www.elatec.com](http://www.elatec.com) or contact ELATEC.

#### REVISION HISTORY

VERSION	CHANGE DESCRIPTION	EDITION
01	First edition	11/2020
02	Second edition	01/2021
03	Third edition	01/2021

## ABOUT EINTLEG

The ELATEC EINTLEG is a module for Bluetooth Low Energy (BLE V5.0). It is equipped with a 2.4 GHz chip antenna, SPI host interface, configuration inputs and eight GPIOs.

Refer to product data sheet or [elatec.com](http://elatec.com) for more technical data.

The following FCC rules are applicable to the modular transmitter:

47 CFR Part 15, §15.247

The modular transmitter requires specific operational use conditions:

Due to RF exposure requirements, the modular transmitter should not be used within 5 mm of the human body (closest separation between the radiating parts of the device (e.g. antenna) and the user or nearby persons)

FCC ID: WP5EINTLEG1

IC ID: 7948A-EINTLEG1

HVIN: EL20206

## INTEGRATION IN OTHER DEVICES

#### LIMITED MODULE PROCEDURES

The ELATEC EINTLEG provides a Limited Modular Approval Certificate as the module does not have a shielding can over its RF circuitry and cannot be operated in a stand-alone configuration. The modular transmitter must be integrated into the base board according to the layout below. Cables of the host may not be located in the area of the modular transmitter.

## MECHANICAL INSTALLATION

The module can be soldered on a PCB.

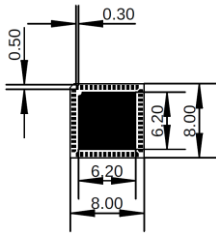


Abbildung 1: EINTLEG Dimensions

## ELECTRICAL CONNECTION

The EINTLEG module has the following connections:

### Host interface

- MOSI/RX
- MISO/TX
- nCS/nWAKEUP
- SCK
- IRQ/OIF
- nRESET

### Config

- IFMODE0
- IFMODE1
- HWDET0
- HWDET1

### GPIO

- GPIO00
- ..
- GPIO07

## LIST OF ANTENNAS

The modular transmitter exclusively uses the chip antenna 450AT18A100 manufactured by Johanson Technology, Inc. This chip antenna is integrated on the modular transmitter board as part of the assembly. For details of the specifications see appropriate data sheet. Using another antenna voids the FCC authorization to operate the modular transmitter.

## RF EXPOSURE CONSIDERATIONS

(1) The modular transmitter should not be used within 5 mm of the human body (closest separation between the radiating parts of the device (e.g. antenna) and the user or nearby persons).

This device complies with the RF exposure SAR test exclusion requirements for portable devices if a minimum separation distance of 5 mm is kept. It also 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.

**Note:**

In (2) the text "if a minimum separation distance of 5 mm is kept" may be omitted if this distance is already kept by installation e.g. into a cabinet.

# COMPLIANCE STATEMENTS

## FCC

### (RF module)

#### **Compliance statement:**

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.

#### **Modification of equipment:**

The instruction manual of the host shall include the following statement: Changes or modifications made to this equipment not expressly approved by the party responsible for compliance may void the FCC authorization to operate this equipment.

#### **Information to the user:**

(The instruction manual of the host shall include the following statement) A compliance statement as applicable, e.g., for devices subject to part 15 of CFR 47 as specified in §15.19(a)(3), that the product complies with the rules; and the identification, by name, address and telephone number or Internet contact information, of the responsible party, as defined in §2.909. The responsible party for Supplier's Declaration of Conformity must be located within the United States.

**Host devices****FCC notes for a host subject to verification or SDoC:**

For a host device assembled with the certified module and subject to 47 CFR Part 15 verification of class A digital devices, the following statements have to be included in the user manual and the host device has to be labelled as noted below. If the host device is subject to other authorization procedures or parts the appropriate requirements of these authorization procedures or parts apply.

**Important note:**

OEM integrator is still responsible for the FCC compliance requirements of the end product, which integrates this module. Appropriate measurements (e.g. 15B compliance) and if applicable additional equipment authorization of the host device to be addressed by the integrator/ manufacturer

**The end device must be labeled with:**

Contains FCC ID: WP5EINTLEG1

Physical FCC ID labels must be located on the surface of the product, or within a user-accessible non-detachable compartment (such as the battery compartment). The label shall be permanently affixed, permitting the device to be positively identified. The font needs to be readily legible, consistent with the dimensions of the equipment and its label area.

When the device is so small, or for such use that it is impracticable to label with a font size that is four points or larger (and the device does not utilize electronic labeling), then the FCC ID shall be placed in the user manual, and the FCC ID shall also be placed either on the device packaging or on a removable label attached to the device.

Products with a built-in display or that only operate in conjunction with another product that has an electronic display, have the option to display on the electronic display the FCC Identifier, any warning statements, or other information that would otherwise require to be shown on a physical label attached to the device. Guidance for electronic labeling is provided in [KDB Publication 784748](#).



**Example for SDoC:**

<p style="text-align: center;"><b>Supplier's Declaration of Conformity</b></p> <p><b>Unique Identifier: (e.g., Trade Name, Model Number)</b></p> <p><b>Party issuing Supplier's Declaration of Conformity</b> ABC Cooperation Street Address City, State Postal Code Country Telephone number or internet contact information</p> <p><b>Responsible Party - U.S. Contact Information</b> Street, Address City, State Postal Code United States Telephone number or internet contact information</p> <p><b>FCC Compliance Statement</b> (for products subject to Part 15)</p> <p>This device complies with Part 15 of 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.</p>
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The compliance information statement shall be included in the user's manual or as a separate sheet. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form. The information may be provided electronically as permitted in §2.935.

**NOTE:** The Commission does not have a required SDoC format. This is an example only and is provided to illustrate the type of information that may be supplied with the product at the time of marketing or importation for meeting the FCC SDoC requirement.

**For class B devices:**

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.

**For class A devices:**

FCC §15.105 (b):

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**Additional testing, Part 15 Subpart B disclaimer:**

The modular transmitter is FCC authorized for the specific rule parts listed on the grant, only. The host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

**CANADA:**

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- 1) l'appareil ne doit pas produire de brouillage;
- 2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

**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.

**The end device must be labeled with:**

Contains IC ID: 7948A-EINTLEG1

# SERVICE ADDRESS

For information on test modes and additional testing requirements please contact

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RFID Systems

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