

Contents

1	Gei	neral1-1
1.	.1	Explanation of symbols1-1
1.	2	Limitation of liability
1.	3	Service
2	Saf	ety information2-3
3	Pro	duct description / Technical data
3.	.1	Intended use
3.	2	General Description
3.	3	Technical data
3.	.4	Additional hardware
4	Tra	nsport
4.	.1	Symbols on the packaging
4.	2	Transport inspection
4.	.3	Packaging
4.	4	Storage
5	Inte	erface
5.	.1	Bluetooth
5.	2	NFC interface
5.	.3	RF Sniffer
6	Inst	tallation
6.	.1	Unpacking6-1
6.	2	Installation instructions KPC (Optional)6-1
6.	.3	Installation instructions flinkey BLE6-3
7	Ор	eration7-1
8	Mai	intenance
8.	.1	Cleaning
8.	2	Inspection

8	3.3	Troubleshouting	8-2
9	Dis	posal of the Product	9-1
10	Dec	claration of Conformity1	L 0-1
11	FC	C 1	L1-1
12	ISEI	D1	2-2

1 General

NOTICE	
	These Instructions are an integral part of the flinkey BLE and must be kept in the immediate vicinity at a place accessible by personnel at all times. Personnel must have carefully read and understood these Instructions prior to beginning work. Prerequisite for safe work is the compliance with all safety information and instructions given in these Installation and Operating Instructions. In addition, the local accident prevention regulations and general safety regulations apply to the range of application of the flinkey BLE.

Illustrations contained in these Instructions are intended to provide general understanding and may differ from the actual design of the system.

1.1 Explanation of symbols

The safety information in these Instructions is marked with symbols. A safety information is preluded by a signal word which expresses the severity of a danger.

To avoid personal injury and damage to physical assets, the safety information must be complied mandatorily and caution is required.

indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
indicates a potentially hazardous situation which, if not avoided, will result in serious injury.
indicates a potentially hazardous situation which, if not avoided, may result in minor injury or damage to physical assets.

Tips and recommendations

NOTICE ... highlights tips and recommendations as well as information required for efficient and trouble-free operation.

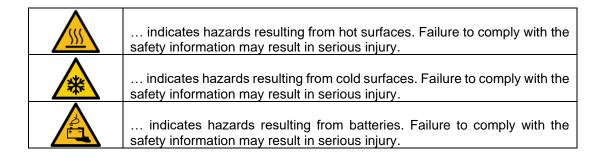
Special safety information

The symbols below are used in safety information to draw the attention to special hazards:

	indicates general hazards. Failure to comply with the safety information may result in serious injury or death.
4	indicates hazards resulting from electricity. Failure to comply with the safety information may result in serious injury or death.
	indicates hazards resulting from moving parts. Failure to comply with the safety information may result in serious injury.

General





1.2 Limitation of liability

All data and information given in these Instructions were compiled in accordance with the applicable standards and regulations, the state of the art as well as our extensive knowledge and experience. The manufacturer will not be liable for any damage resulting from:

- Non-compliance with the Instructions
- Improper use
- Employment of unqualified personnel
- Unauthorised modifications
- Technical alterations
- Use of spare parts which have not been approved

In case of special designs, utilisation of additional order options or because of the most recent technical changes the actual scope of supply may deviate from the explanations and presentations described here.

The obligations agreed under the supply contract, the General Terms and Conditions as well as the manufacturer's delivery conditions and the statutory regulations valid at the time of contract conclusion shall apply.

We reserve the right to make technical changes for the purposes of improving the performance characteristics and further development.

These Instructions are protected by copyright.

Transfer of these Instructions to third parties, any reproductions or copies – including excerpts – as well as the utilisation and/or disclosure of their contents other than for internal use are not permitted without the manufacturer's written consent. Infringement shall result in the obligation to pay damages. This shall not affect any further claims.

1.3 Service

flinkey WITTE Velbert GmbH & Co. KG Höferstr. 3-15 D 42551 Velbert/ Germany

T: 00 800 99 0000 33 service@flinkey.com www.flinkey.com

QR Code

2 Safety information

NOTICE

Please take the time to read the general safety instructions. Follow all instructions. This will avoid fire, explosions, electric shocks or other hazards that may result in damage to property and/or severe or fatal injuries.

Please read all safety information and instructions. The manufacturer is not liable for cases of material damage or personal injury caused by incorrect handling or non- compliance with the safety instructions. In such cases, the warranty will be voided. Keep all safety information and instructions for future reference and pass them on to subsequent users of the system.

NOTICE

This product does not contain any user-serviceable parts. Configuration, servicing, and repairs must only be made by an authorized reseller or installer. Do not attempt to open, modify or repair the flinkey BLE. Do not drop, puncture, break or expose to high pressure. Alterations to the products and technical modifications are not permitted.



Installation and maintenance work as well as functional checks of the device must be performed by skilled personnel who, based on their training, are appropriately qualified for this work.

This system is not intended for use by persons (including children)
with restricted physical, sensory or intellectual capability or lack of
experience and/or knowledge, unless they are supervised by a
person who is responsible for their safety or provides them with
instructions on how to use the system. Children should be
supervised in order to ensure that they do not play with the system.

Use the system within the specified performance limits.
Do not expose the system to fire, explosions or other hazards.
Never touch the flinkey BLE or the components with wet hands.
The system must be stored in a dry place between -20°C and +60°C.
For detailed information see chapter 4.

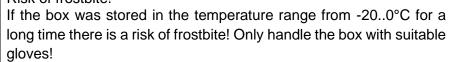


	Risk of injury!
^	Always make sure the flinkey BLE is positioned safely in the vehicle.
	Make sure that the BLE Box does not cause any risks to the drivers
· · ·	or passengers. Without sufficient fixing the flinkey BLE can cause
	hazards for the vehicle driver or passengers in case of a full brake
	application (i.e. head injuries).

 Risk of injury! Always make sure the flinkey BLE is stored at the correct ambient temperatures in the vehicle! → No functionality beyond the temperature range
Not open the enclosure and try to replace battery Battery defects

Risk of injury!
Be vigilant at all times, and always be careful with what you are
doing. Do not use electrical equipment if you are lacking in
concentration or awareness, or are under the influence of drugs,
alcohol or medication. Even a moment of inattentiveness can lead to
serious accidents and injuries when using electrical equipment.

^	Risk of burn!
555	Always protect the flinkey BLE from direct sunlight and never place the flinkey BLE in direct sun light. To avoid overheating, do not cover
	the device, do not use near heat sources or in direct sunlight and
	only at ambient temperatures of between -20°C and +60°C.
^	Risk of frostbite!

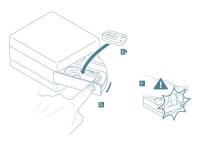


*





Risk of injury! There is a risk of crushing fingers while closing the drawer of the box



NOTICE

The key bed in the keyfob drawer is designed to match the intended keyfob only. Only place the original and intended keyfob in the keyfob drawer and make sure to place it in the correct position.

3 Product description / Technical data

3.1 Intended use

The WITTE Digital flinkey BLE is intended to be used as a smart actuator to access passenger vehicles, commercial vehicles, and transporters. The task of the box is to lock or unlock a motor vehicle after authentication of the user and receiving of a corresponding command via BLE (Bluetooth Low Energy) interface by a smartphone application.

The products may only be used according to the instructions as described in this manual. All use other than described in this manual is seen as unintended use.

Any changes or modifications to this device not explicitly approved by WITTE DIGITAL could void the user's authority to operate the flinkey BLE.

3.2 General Description

The WITTE Digital flinkey BLE is designed as a smart actuator to operate vehicle keys with a central locking function and thus to lock or unlock the vehicle.



Fig. 1:flinkey BLE with open drawer (example)

The vehicle key can be fed to the flinkey BLE via a drawer, and the drawer itself can be locked or unlocked during operation.





Fig. 2:flinkey BLE bottom side (example)

The box uses two camshaft-driven drag levers that can operate the key buttons for locking or unlocking the vehicle via central locking This makes it possible to implement different forms of key transfer, according to the functionality of the vehicle (steering wheel lock vs keyless start).

The combination of the key receptacle (key bed) and the two towing levers must be adapted to the shape of the vehicle key.

NOTICE

A later adaptation of the flinkey BLE is impossible due to the secure installation

Supported key variants can be requested by WITTE Digital.

The key bed has an LED backlight, this serves as a comfort function and as status feedback.



Fig. 3:flinkey BLE drawer with keybed (example)



During operation, the flinkey BLE receives commands in a protocol via BLE and performs corresponding operations. This communication is BLE based and in between flinkey BLE and smartphone application.

In addition to the electromechanical infrastructure, an NFC gateway is also available, which can be used as an additional communication interface (reading of NFC-Token).

Furthermore, an RF sniffer is installed to detect the emitted radio signals of the activated vehicle key.

The entire solution can be integrated into existing systems via well-defined interfaces (API - Application Programming Interface and SDK - Software Development Kit).

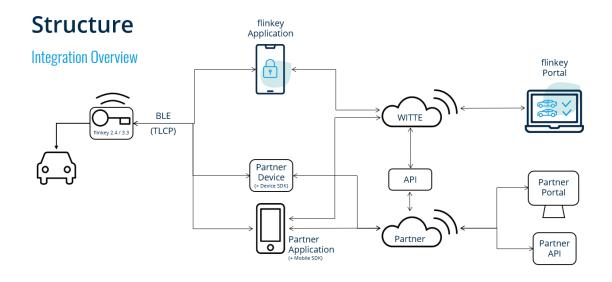


Fig. 4:Communication / data structure

3.3 Technical data

Product Design Trade mark Year of production Manufacturer	flinkey BLE 3.3 flinkey 2022 WITTE-Velbert GmbH & Co. KG Höferstr. 3-5 D-42551 Velbert
Total weight Dimensions	App. 720 g 164 mm x 139 mm x 61 mm
Operating temperature	-20 °C +60 °C Rel. air humidity 50% at 60 °C
Battery type Battery charging Battey discharging Storage temperature	1INR19/66-2 / Rechargeable Lithium Ion 0°C 60°C -20°C 60°C
Power supply Charging connector Charging time	5 V 1 A USB-C 4.5 h
Degree of protection Protection class	IP30 III
Radio technology	BLE (Bluetooth Low energy) BLE 5.1 2.4 GHz ISM Band
	NFC 13.56 MHz IOS7 IEC 14443 A (or B)
Other technology	RF Sniffer 315 MHz, 434 MHz und 868 MHz (only functional checks)



Protect from direct sunlight!



3.4 Additional hardware

A KPC adapter (Keyfob Power Control) is available as an optional extension; this replaces the battery of the vehicle key and enables a targeted power supply. The installation is described in chapter 6.2.

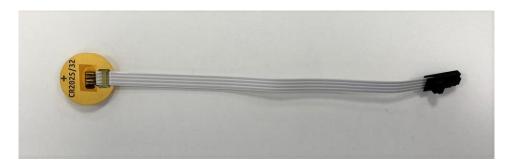


Fig. 5:Keyfob with KPC (example)



Fig. 6:Keyfob with KPC (example)

NOTICE

The KPC adapter can only be used for suitable keyfobs. Please contact WITTE digital to check if a KPC adapter is available for the keyfob. (s. chapter 1.3)

4 Transport

4.1 Symbols on the packaging

	Fragile Marks packages with fragile or sensitive contents. Handle package with care, do not drop or expose to shocks.
–	Keep dry Keep package dry.
	Battery

Lithiumbatterien sind Gefahrgut. Daher gelten immer gesetzliche Vorschriften und Kennzeichnungspflichten beim Versenden.

4.2 Transport inspection

Check the consignment for completeness and transport damage immediately upon receipt. In case of visible transport damage (defective packaging i.e.) please proceed as follows:

- 1. Refuse delivery or accept delivery subject to reservation.
- 2. Note scope of damage on the transport documents or on the transporting agent's delivery note; if applicable, document damage by taking pictures. Confirmation by forwarding agent.
- 3. A damage has to be reported within 24 hours after delivery in writing (if possible, by fax) or orally (by phone) followed by a written confirmation.
- 4. The damage report must be sent to the insurance company within this period as well.

NOTICE

Any defect shall be queried as soon as it has been recognised. Claims for damages can only be made within the applicable complaint period. Please observe the insurance conditions!

4.3 Packaging

The individual packages have been packed according to the transport conditions to be expected. For packaging only environmentally friendly materials have been used.

The packaging serves to protect the individual components from transport damage, corrosion and other damage until the time of installation. Therefore, please do not destroy the packaging and only remove it shortly before installation.

NOTICE	
Environmental damage due to improper disposal Packaging materials are valuable raw materia processed and recycled in many cases.	



Therefore:

- > Dispose of packaging material in an environmentally friendly manner.
- Please observe the applicable local regulations for disposal. If required, call in a specialist company for disposal.

4.4 Storage

The packages must be stored under the conditions below:

- > Do not store outdoors.
- Store dry and free from dust.
- > Do not expose to aggressive media.
- Protect from solar radiation.
- > Avoid mechanical shock and vibration.
- > For storage conditions (temperature / air humidity) see chapter 3.3

5 Interface

The flinkey BLE can only communicate via BLE, power supply is done by USB-C, without additional features (power supply only).

5.1 Bluetooth

Specification	BLE 5.1
Operating frequencies	2.4 GHz
Compatibility	Bluetooth low energy 5.1 and earlier LE specifications

BLE antenna type	Integrated
BLE antenna gain	2.11 dBi
BLE frequency range	2400 to 2483.5 MHz
BLE maximum output power	1 dBm
BLE modulation type	Coded, GFSK
BLE data rate	Up to 2 Mbit/s

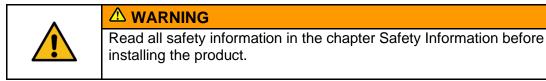
5.2 NFC interface

Operating frequency	13.56 MHz
Possible operating modes	R/W ISO/IEC 144443A/MIFARE and Feli scheme
	R/W ISO/IEC 144443B
Antenna location	Inside the drawer, below the key fob, above fuel card
Minimum separation distance	20cm
from radiating element to user:	

5.3 RF Sniffer

Operating frequency 315 MHz, 434 MHz, 868 MHz		
	Operating frequency	315 MHz, 434 MHz, 868 MHz

6 Installation



The flinkey BLE is pre-assembled by the manufacturer for a specific keyfob type. This settings couldn't be adjusted after the box left the manufacturer's factory. The box can't be opened without destroying it.

Installation and maintenance work as well as functional checks of the product must be performed by skilled personnel who, based on their training, are appropriately qualified for this work. All local regulations must be followed.

6.1 Unpacking

NOTICE

Check the product for any heavy damage before installation. If there is any visible damage, a strong odor, or excessive overheating of components, unplug all the connections immediately and stop using the system.

Make sure the packaging contains the following items:

- flinkey BLE
- Hook-and-loop fastener (2x3 strips)
- Quick Start Guide
- Cable (optional, depending on partner)

6.2 Installation instructions KPC (Optional)

NOTICE

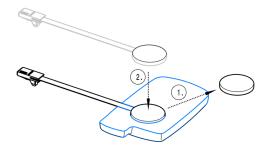
The KPC adapter can only be used for suitable keyfobs.

The following steps must be followed during assembly:

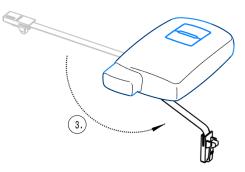
- 1. The keyfob is to be opened in accordance with to the manufacturer's instructions.
- 2. Remove the manufacturer's battery from the keyfob.



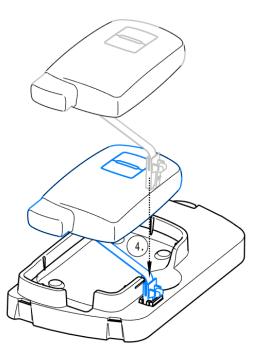
- 3. Choose the correct KPC for the replacement. (please contact manufacturer)
- 4. Place the corresponding KPC in the batterie position:



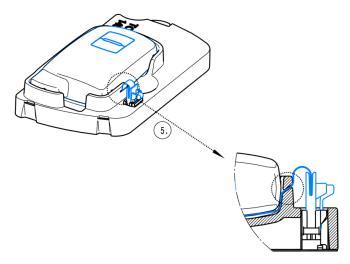
5. Close the keyfob with the upper part and bend the cable in the direction as seen in the following figure:



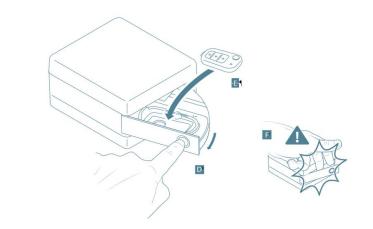
6. Connect the plug to the socket in the keybed of the drawer of the box. Then place the keyfob in the keybed.







7. Then close carefully the drawer of the box. While closing, be careful not to damage any cables! For further installation, follow the next chapter.





Risk of injury! There is a risk of crushing fingers while closing the drawer of the box



If there are problems with the positioning/ cable connection, please contact our service!

6.3 Installation instructions flinkey BLE

•	Risk of injury! Always make sure the flinkey BLE is positioned safely in the vehicle.
	Make sure that the flinkey BLE does not cause any risks to the drivers or passengers. Without sufficient fixing the flinkey BLE can cause hazards for the vehicle driver or passengers in case of a full brake application (i.e. head injuries).

Since the flinkey BLE can just be placed in the vehicle, and depending on the type of vehicle, it is necessary to remove the vehicle key, the possible installation positions are limited. The following installation positions are recommended:

- in the glove compartment
- under the drivers' seat
- under the passengers seat
- In the boot



Risk of burn!

Always protect the flinkey BLE from direct sunlight and never place the flinkey BLE in direct sun light.

WITTE:digital

To avoid overheating, do not cover the device, do not use near heat sources or in direct sunlight and only at ambient temperatures of between -20°C and +60°C.

*	Risk of frostbite! If the box was stored in the temperature range from -200°C for a
	long time there is a risk of frostbite! Only handle the box with suitable
	gloves!

The flinkey BLE Box can be affixed in the car with the hook-and-loop fasteners, to protect the box from moving when the car is being driven. The steps below describe how to affix both the loop and hook strips. Optionally, you can also use the vehicle floor as loops. In that case, remove the loop strip.

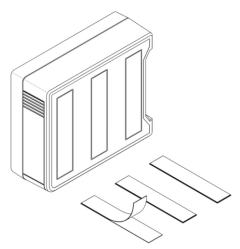
NOTICE

Make sure to place the hook-and-loop strips at room temperature. Make sure that the surface is clean and dry.

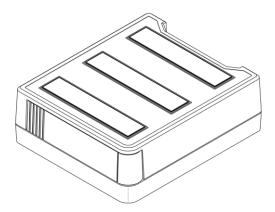
To affix the flinkey BLE:

- 1. Clean the surface of the flinkey BLE Box with a soft, clean, lint-free cloth dampened with a mild detergent solution or water.
- 2. Make sure the hook-and-loop strips are attached to each other.

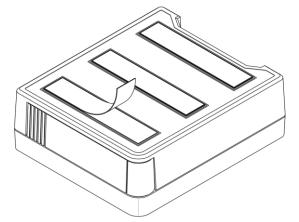




- 3. Remove the liners from the hook strips.
- 4. Place the hook strips at an equal distance on the bottom of the flinkey BLE



5. Remove the liners from the loop strips.



6. Place the flinkey BLE on the surface of the car where you want to affix the box (e.g. carpet, fleece or floor). Press well to make sure the strips stick to the surface.

NOTICE

In case of malfunctions or deviations please contact the manufacturer's service (see Chapter 1.3)

Operation 7

	Any use of the device exceeding the intended use and/or any other use is regarded as improper use and may lead to dangerous situations.

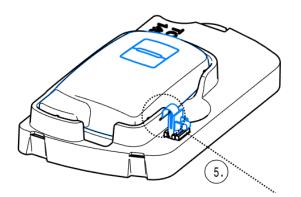
	Risk of injury! There is a risk of crushing fingers while closing the drawer.

	Risk of burn! Always protect the flinkey CAN from direct sunlight and never place the flinkey CAN in direct sun light.
<u> </u>	To avoid overheating, do not cover the device, do not use near heat sources or in direct sunlight and only at ambient temperatures of between -20°C and +60°C.



Risk of frostbite! If the box was stored in the temperature range from -20..0°C for a long time there is a risk of frostbite! Only handle the box with suitable gloves!

The key bed in the keyfob drawer is designed to match the intended keyfob only. Only place the original and intended keyfob in the keyfob drawer and make sure to place it in the correct position.





8 Maintenance

This product does not contain any user-serviceable parts. The flinkey BLE can't be opened without destroying the enclosure. Configuration, servicing, and repairs must only be made by an authorized reseller or installer.

Risk of injury! Always make sure the flinkey BLE is positioned safely in the vehicle. Make sure that the BLE Box does not cause any risks to the drivers or passengers. Without sufficient fixing the flinkey BLE can cause hazards for the vehicle driver or passengers in case of a full brake application (i.e. head injuries).

8.1 Cleaning

Do not use alcohols (e.g. spirits) or chemical cleansers and solvents as these can damage the plastic components.

- Clean the box at least 1x / month
- Always use a soft, clean, lint-free cloth. Clean the box using a cloth dampened with a mild detergent solution or water.

8.2 Inspection

Depending on the position of the installation, the box and its components (cable, connector, housing) should be inspected regularly for any kind of damages.

8.3 Troubleshouting

NOTICE

In case of malfunctions or deviations please contact the manufacturer's service (see Chapter 1.3)

💿 WITTE:digital

9 Disposal of the Product

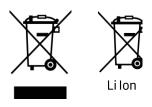
If no agreements have been made for return or disposal, have the product and its component recycled:

- Scrap metals.
- Recycle plastic elements.
- > Sort and dispose of other component parts according to their material properties.

NOTICE

Environmental damage due to improper disposal! Electronic waste, electronic components, lubricants and other consumables are subject to special waste treatment and may only be disposed of by competent firms! Please inform manufacturer's after sales service.

The local authority or certified waste management companies will provide information on environmentally sound disposal.



This symbol on the product indicates that this electrical or

electronic equipment must not be treated as unsorted municipal waste, but must be collected separately by the end user! Free collection points for waste of electrical and electronic equipment are available in your area, as well as other collection points for the reuse of the equipment. You can obtain the addresses from your city or local government.

If the old electrical or electronic equipment contains personal data, you are responsible for deleting this data yourself before returning it.

This equipment contains a rechargeable battery with Lithium Ion cells. The battery contained in the device cannot be removed by end users.]

Further information on the Electrical and Electronic Equipment Act can also be found on the Internet at www.elektrogesetz.de.

By disposing of the device in the proper manner, you help to avoid possible hazards to the environment and public health that could otherwise be caused by improper treatment of waste equipment. The recycling of materials contributes to the conservation of natural resources. Therefore do not dispose of your old electrical and electronic equipment with the unsorted municipal waste.





The outer packaging is made of environmentally friendly materials, which may be disposed through your local recycling facilities. By disposing of the packaging and packaging waste in the proper manner, you help to avoid possible hazards for the environment and public health. The symbol on the outer packaging indicates that the packaging is made of PAP.

10 Declaration of Conformity

Hereby, WITTE Automotive GmbH declares that the flinkey BLE is in compliance with the Directives 2014/30/EU and 2011/65/EU. The full text of the EU Declaration of conformity is available at the following internet address: <u>www.witte.digital</u>

Hereby, WITTE Automotive GmbH declares that the flinkey BLE is in compliance with the Radio Equipment Regulation 2017 and the Regulations Restriction of hazardous substances (RoHS). The full text of the UKCA Declaration of conformity is available at the following internet address: <u>www.witte.digital</u>

The flinkey BLE has an ECE Approval regard to Regulation No. 10 issued by the KBA (Approval N° E1*10R06*XXXX).

11 FCC

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

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.

12 ISED

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:

This device may not cause interference.

This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'ISDE 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, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même soi le brouillage est susceptible d'en compromettre le function nement

Copyright © 2023 by WITTE Digital

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher.

For permission requests, write to the publisher, addressed "Attention: Permissions Coordinator," at the address below.

WITTE Digital WITTE-Velbert GmbH & Co. KG Höferstraße 3-15 42551 Velbert Germany T: 00 800 99 0000 33

service@witte.digital www.witte.digital

service@flinkey.de www.flinkey.de

Manual Version 1.0

Publication date: January 2023