operto

Technical Information Bluetooth Low Energy Interface

Technology: IEEE 802.15.1 DTS
Frequency Range: 2.4 GHz ~ 2.5 GHz (2400M~ 2483.5M)
Transmission Power: 5 dBm GFSK
Receiver Sensitivity: -97dBm

Power Requirements

Power Supply: Entry: 4-9 V DC
Consumption: <50 mA + Output driver controller consumption (depends on device attached)

Environmental Conditions

Operating Temperature

- From -10°C to +70°C
- Humidity
- From 5% to 85% without condensation certification

Directive

2014/53/UE - Radio Electric equipment 2011/65/UE - ROHS 2

Reference Standards

EN 301489-1 V2.2.3
EN 301489-1 V3.1.1
EN 62368-1
EN 55032:2016
EN 55035:2017+A11:2020
EN 50581:2012
EN ISO 7010:2020

Safety Information

Please read this important safety information before you use the device. It contains general safety information for devices and may include content that does not apply to your device.

Follow the warning and caution information to prevent injury to yourself or others and prevent damage to your device.

Descriptions are based on the default device. Some content may differ from your device depending on the device model, lock, or device function.

Technical Data

Model: Operto Boost Classic
Bluetooth module for mobile key in hotel locks.

⚠ WARNING ⚠

- Any external power supply used with the device shall comply with relevant regulations and standards applicable in the country of intended use.
- The power supply should provide 4-9V DC and a minimum rated current of 50mA.
- Do not touch the device, power cords, plugs, or connectors with wet hands or other damp body parts.
- Do not directly connect the power cable positive and negative terminals.
- Do not drop the device or subject it to excessive impact.
- Do not expose this product to water or moisture, and do not place it on a conductive surface while in operation.
- Do not store your device near or in heaters, microwaves, hot cooking equipment, or high-pressure containers.
- Do not expose this product to heat from any source; it is designed for reliable operation at average room temperatures.
- Do not expose the board to high-intensity light sources (e.g., xenon flash or laser).
- Take care while handling this product to avoid mechanical or electrical damage to the printed circuit board and connectors.
- Avoid handling this product while it is powered.
- Only handle by the edges to minimize the risk of electrostatic discharge damage.
- Do not use or store your device in areas a high concentrations of dust or airborne materials.
- Any peripheral or equipment used with the device should comply with relevant standards for the country of use and be marked accordingly to ensure that safety and performance requirements are met.

operto

Installation Warnings

— Do not change the wire that comes with the device.

— Use gloves to manipulate the board to minimize the risk of ESD.

— Do not force the board into holes or tight spaces.

— Do not bend the wires excessively.

— Do not force the connectors in their receptacles.

— When the installation is finished, before closing the door, check that it works with both the new and old ones. And make sure that it opens appropriately to prevent the door from closing and not be able to be opened. This step is essential for locks that do not have a mechanical opening system (physical key).

— Make sure that the lock is on time and that the settings are correct.

— When closing the lock and installing it on the door, ensure that no wires are pinched or at odd angles. And that none of the cables are damaged or have any defect in the insulating cover.

— Do not install any device whose model does not correspond to the lock on which it is to be installed. Do not use wiring whose model does not fit the lock on which it is installed.

— During installation, it is recommended to check and measure the lock's battery where it is being performed. If the charge is moderately low, it is recommended to replace the battery.

— When installing the device, check that the batteries do not heat up. If so, disconnect the device, check that the installation has been done correctly, check the wiring. If this still occurs, replace the device.

— When reinstalling the lock, do not tighten the screws with excessive force. It may cause mechanical problems and the cranks to jam.

— When uninstalling the lock, be careful with the wiring (in some locks, they are hidden), and when disassembling, do it slowly and make sure that all wires are disconnected.

Model: Operto Boost Classic

Bluetooth module for mobile key in hotel locks.

Connecting Power

Be sure that the power connection (battery) is first connected to the Operto board and then connect the power wire of the Operto board to the lock itself, not the other way around.

Do Not Connect

Do not connect the power wire of the Operto board to the lock and then connect the battery wires to the Operto board.

It may cause a deconfiguration of the lock. If this happens, you have to reconfigure the lock following my lock manufacturer instructions for that.

Concept	Description
Bluetooth Low Energy Interface	
Technology	IEEE 802.15.1 (DTS)
Technology	2.4 GHz ~ 2.5 GHz (2400M~ 2483.5M)
Transmission Power	+5 dBm (GFSK)
Receiver Sensitivity	-97dBm
Physical Features	
Dimensions	33 × 42 × 8 mm (without wires)
Weight	150 grams
Power Requirements	
Power Supply	Entry: 4-9 V DC
Consumption	<50 mA + Output driver controller consumption (depends on device attached)
Environmental Conditions	
Operating Temperature	From -10°C to +70°C
Humidity	From 5% to 85% without condensation

Feature	Min	Max	Unit
Input Voltage	-0.3	12	V
Output Current	0	1.8	A
Junction temperature range	-40	85	°C
Storage temperature range	-40	150	°C

operto

Specific use conditions

This product is a module that add BLE capabilities to locking access systems. Antenna integrated into the module is On-board PCB antenna with a gain of +3.3 dBi. This module can be used for fixed installation only with integrated antenna. Host manufacturer must ensure the compliance with FCC rules when when including this module into final product.

Host manufacturer must ensure that no information about how to install or remove this module from the final product is available to end users. End user manual must include all required regulatory information and warnings as shown in this manual.

Limited modular information

This product is a limited module and is compliant with all requirements for FCC including FCC Part 15.247.

Following the requirements for FCC Part 15 Subpart C Section 15.212, all RF elements must be shielded for modular approval. This product is not compliant with this requirements and is considered limited modular approval.

Final products including this module must be granted with a new FCC ID submission or with a Class II Permissive Change to ensure full compliance with FCC requirements. Class II Permissive Change must be submitted by the grantee.

RF exposure considerations

Final product must ensure the compliance with the requirements for RFexposure. RF exposure measurements are performed at 20cm of the equipment.

This module must be installed within the final product in order to ensure that at least 20cm distance is mantained between antenna and user. Changes in RF exposure conditions or statements and/or in module layout require full responsability of the module by host manufacturer and a new certification process with a different FCC ID.

Host compliance

Host manufacturer must provide a label in format permitted (phisical or e-label) stating that the final product "Contains FCC ID: 2BB7M-PUV-002" on the final product and this information may be contained in final product user manual.

Host manufacturer must perform Part 15C Class II Permissive Change to evaluate the AC conducted emissions and radiated emissions, this product has no shielding shell and the installation in host device may change this results.

Host manufacturer must perform Part 15B Self Declaration of Compliance or ID procedure.

If RF Exposure environment of module is changed in any way, the new RF Exposure condition must be re-evaluated.

Model: Operto Boost Classic

Bluetooth module for mobile key in hotel locks.

Installation Guide

This page indicates the installation guide for host manufacturers. This installation guide is adressed to expert technicians and it must not be available for end users.

Please use the official additional software and documentation in order to ensure the correct installation and use of this module.

Before installing the module ensure the following:

- The product where module is to be installed must be compatible with Operto Update device in order to ensure that this module is fully compatible with the final product.

- The only necessary tools to install this product is a screwdriver. Aditional tools can be useful to help in the process of install the module in final product.

- The Operto app is necessary to be installed on a smartphone compatible with it for checking the correct installation of the module.

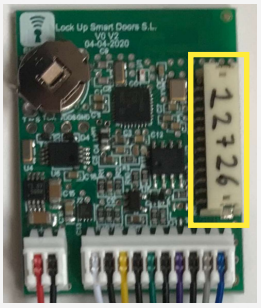
1. Unpack de module and attach the supplied cables if necessary.

2. Dismount the final product and prepare it to assemble the module.

3. Connect the pins or cables following the below indication:

H2 PWR connector 2x1 (cable 2x1)

H3 Data Connector 10x1 (cable 10x1)



Additional 12x1 connector

If the actual configuration and cables provided is not suitable for the final product additional 12x1 connector is available.

Top two pins of this 12x1 connector are for V+ and GND of H2 2x1 cable and the following ones are for the pins of H3 10x1 H3 cable.

4. Take following considerations:

- Make sure this device can fit within the final product without interfere with any other electronic.
- Module should be installed with the cables provided if this connections are not available on your product contact customer service for support.
- Do not change the internal battery.
- Boost Classic module must be powered by 4-9V supply.
- Do not cover PCB antenna with conductive material.

operto

Safety Classification

The current IP is IP21. It is protected against finger touches and protected from damage due to any build-up of moisture on surfaces that contact the air.

Safety Certificates (audits)

This device has passed the security inspection of the following companies:

— PROSEGUR

— S21SEC

Mini Installation Guide

Before installing, be sure you have the necessary tools:

- Screwdriver
- Android Phone with the The Operto app installed.

1. The Operto Update device with the respective wiring for your lock model.
2. Uninstall the lock from the door.
3. Access the lock electronics.
4. Install the Operto Boost following the instructions from the lock model.
5. Configure and test the installation.
6. Close the lock.
7. Install back the lock on the door.
8. Test the opening.

Warranty

The Operto products have two years of warranty from the date of installation.

EMC Declaration

Operto is not responsible for any installation that a Operto team member has not supervised. Operto is not responsible for any malfunction or damage caused by installing devices sold or distributed by third-party companies without Operto's technical team's supervision.

Model: Operto Boost Classic

Bluetooth module for mobile key in hotel locks.

“EU” DECLARATION OF CONFORMITY
DECLARATION “UE” DE CONFORMITÉ

The undersigned, on behalf of the company.

Declara que el diseño y fabricación del Producto / Declares that the design and construction of the Product / Déclare que le dessin et construction du produit:

Type of Product:	Electric Locks Opening Device
Brand:	Lock Up Smart Doors S.L.
Model:	Operto Boost Classic

Produced by:

Lock Up Smart Doors S.L.

Calle Escritor Jeronimo Tristante, N10
CP 30100, Espinardo, Murcia, (España)

(+34) 968 828 243
support@operto.com
operto.com

Es conforme a las disposiciones de las directivas Europeas / Complies with the regularion of the European directives / Est conforme aux dispositions de las directives Européennes:

2014/53/UE — Radioelectric equipments
2011/65/UE — ROHS 2z

Normas de referencia / Standars of reference / Normes de reference:

EN 301489-1 V2.2.3
EN 301489-17 V3.1.1
EN 62368-1
EN 55032:2016
EN 55035:2017+A11:2020
EN 50581:2012
EN ISO 7010:2020

FCC Disclamer/Statement: FCC ID: 2BB7M-PUV-002

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.

This device complies with the MPE limit at 20cm. distance between EUT and human body.
A distance of 20 cm between the device and the user must be respected.

This certificate remains the property of OPERTO Technologies Inc. This certificate and all copies or reproductions of the certificate shall be returned to OPERTO Technologies IncL. or destroyed if requested. Further clarification regarding the scope of this certificate and verification of the certificate is available through OPERTO Technologies Inc. or at the above address or at **operto.com**

operto

ISED Disclaimer/Stamement: IC: 30937-PUV002

This device complies with Part 15 of the FCC Rules and with Industry Canada licence-exempt RSS standard(s). 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.

Le pré sent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorise e aux deux conditions suivantes:

1) L'appareil ne doit pas produire de brouillage, et

2) L'utillisateur de l'appareil doit accepter tout brouillage radioé lectrique subi, mê me si le brouillage est susceptible d'en compromettre le fonctionnement.

Note:
Changes or modifications not expressively approved by the party responsible for compliance could void the user's authority to operate the equipment.

Modular statment complaint with 15.105

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