

IL-R V1

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Valid from Serial No. -

Safety Information

Industrial Location Radio Module	
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WARNING

To reduce risk of injury, everyone using, installing, repairing, maintaining, changing accessories on, or working near this tool **MUST** read and understand these instructions before performing any such task.

DO NOT DISCARD - GIVE TO USER

Atlas Copco

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Technical Data

Specifications

Specification	
Frequency range, Bluetooth	2400 MHz - 2500 MHz
Frequency range, UWB	5500 MHz - 7500 MHz
Transmitting power, Bluetooth	-0.5 dBm
Transmitting power, UWB	-10.21 dBm
Supply voltage	2.8 V - 3.6 V
Size	19.1 mm x 26.2 mm x 2.6 mm
Motion sensor	3-axis accelerometer
Antenna	Channel 5 printed PCB antenna (6.5 GHz) Bluetooth® chip antenna
Data rate	6.8 Mbps (IEEE 802.15.4-2011 UWB compliant)
SoC	Nordic Semiconductor nRF52832

The IL-R has a pre-installed firmware. In accordance with §15.21 of e-CFR any manipulation or reprogramming of the module will void the user's right to operate the device.

Software

The firmware on the IL-R offers the following:

- Distance measurements between different IL-R modules via UWB.
- Transmit accelerometer sensor values via UWB radio communication.
- Communication with a host device to send data, such as distance and acceleration sensor values, from module to host device via the ILC interface.
- Communication with a host device to receive commands, such as selecting a target IL-R module, from host via the ILC interface.

The ILC interface is a proprietary and closed interface. For further information contact your local Atlas Copco representative.

i IL-R firmware uses a fixed antenna configuration to operate UWB radio communication. This following can not be changed:

- UWB channel 5
- 6.8 Mbps data rate

Pin Layout

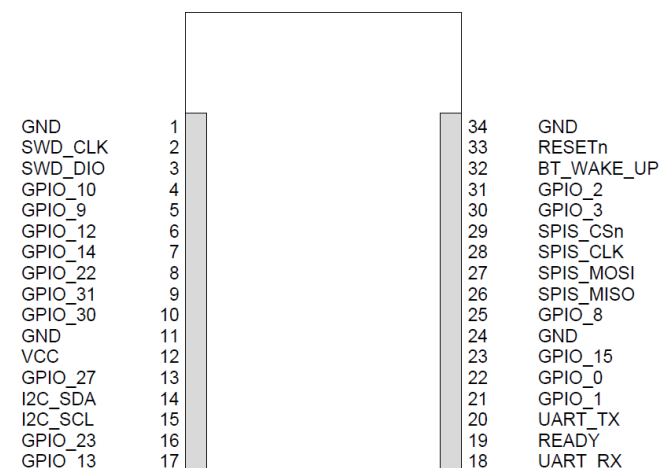


Illustration 1: Pin layout for the IL-R module

The pins listed below are used for communication with the host device.

Pin	Description
1 - GND, 11 - GND, 34 - GND	GND
12 - VCC	VDD
14 - I2C_SDA	Communication link to host device (ILC interface)
15 - I2C_SCL	Communication link to host device (ILC interface)
18 - UART_TX	Communication link to host device (ILC interface)
20 - UART_RX	Communication link to host device (ILC interface)

Operating Environment

Parameter	Minimum	Maximum	Unit
Operating temperature	-40	+85	°C
Operating humidity	10	95	%RH

Declarations

EU DECLARATION OF CONFORMITY

We, **Atlas Copco Industrial Technique AB**, S-105 23 STOCKHOLM SWEDEN, declare under our sole responsibility that the product (with name, type and serial number, see front page) is in conformity with the following Directive(s):

2011/65/EU, 2014/53/EU, 2014/30/EU

Harmonized standards applied:

EN 300328 V2.1.1, EN 301 489-17 V3.2.0, EN 301 489-33 V2.2.0, EN 301489-1 V2.2.0, EN 302 065-2 V2.1.1, EN 62368-1:2014

Authorities can request relevant technical information from:
Product Compliance Manager, Atlas Copco Industrial Technique AB, S-105 23 Stockholm Sweden

Stockholm, 20 November 2018

Carl von Schantz, Managing Director

Signature of issuer

WEEE

Information concerning **Waste of Electrical and Electronic Equipment (WEEE)**:

This product and its information, meets the requirements of the WEEE Directive (2012/19/EU), and must be handled in compliance with the directive.

The product is marked with this symbol:



Products with the symbol of a crossed out wheeled bin *with* a single black line underneath, indicates that parts within the product must be handled in compliance with the WEEE Directive. The entire product, or the WEEE parts, can be sent to your “Customer Centre” for handling.

FCC and ISED Compliance Statement

FCC ID: 2AQ8P-ILR1

ISED certification number: 24224-ILR1

This device complies with: CAN ICES-3 (B)/NMB-3(B)

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.

Changes to the IL-R V1 module and / or its firmware, including but not limited to modifications to the UWB antenna configuration and / or the UWB antenna, voids the user’s authority to operate the device. The device is in compliance with the requirement for RF exposure in the US with 20 cm separation distance between the user and the device. The antenna is fixed to the device and no change in antenna or fixation of the antenna is acceptable and such modification is considered to violate the Compliance Statement.

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.

This equipment may only be operated indoors. Operation outdoors is in violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties.

Labeling Requirements for End Product

For an end product using this IL-R module there must be a label containing, at least, the following information:

This device contains
FCC ID: 2AQ8P-ILR1
IC: 24224-ILR1

The label must be affixed on an exterior surface of the end product such that it will be visible upon inspection in compliance with the modular approval guidelines developed by the FCC.

In accordance with 47 CFR § 15.19 the end product shall bear the following statement in a conspicuous location on the device:

"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."

When the device is so small or for such use that it is not practicable to place the statement above on it, the information shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed. In case, where the final product will be installed in locations where the end-user is not able to see the FCC ID and/or this statement, the FCC ID and the statement shall also be included in the end-product manual.

ISED Compliance Statement:

(English) This device complies with Industry Canada’s licence-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.
- (French) 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'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

FCC and ISSED Integration Instructions

FCC and ISSED Integration instructions according to KDB996369 D03 OEM V01 manual section.

2.2 List of applicable FCC/ISSED rules used in the certification of the IL-R

FCC:

- 47 CFR Part 15F (UWB)
- 47 CFR Part 15C (Bluetooth)
- 47 CFR 2.1091 (RF exposure)

ISSED:

- RSS-220 (UWB)
- RSS-247 (Bluetooth)
- RSS-102 (RF exposure)

2.3 Specific operational use conditions

Not applicable. The IL-R have a printed PCB antenna.

2.4 Limited module procedures

The IL-R module is only to be used by the grantee in its own products and is not intended for sale to third parties. Granted Host product for this IL-R is ILT Base Station. Additional hosts to be used must do a class II permissive change application.

2.5 Trace antenna design

Not applicable

2.6 RF exposure considerations

Tested as a mobile device with 0.1 cm as the compliance distance meeting the power density requirements in the above mention standards.

2.7 Antennas

Not applicable. The IL-R have a printed PCB antenna.

2.8 Label and Compliance information

Included in this documentation in section "FCC and ISSED compliance statement" and "Labeling requirements for end product".

2.9 Information on test modes and additional testing requirements

The IL-R module is only to be used by the grantee in its own products and is not intended for sale to third parties. Granted Host product for this IL-R is ILT Base Station which are tested compliant to FCC part 15 B and ICES-001 for the unintentional radiator part of the host product.

2.10 Additional testing, Part 15 Subpart B disclaimer

The IL-R module is only to be used by the grantee in its own products and is not intended for sale to third parties. Granted Host product for this IL-R is ILT Base Station

Regional Requirements

WARNING

This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Useful Information

Website

Information concerning our Products, Accessories, Spare Parts and Published Matters can be found on the Atlas Copco website.

Please visit: www.atlascopco.com.

Country of Origin

For the Country of Origin, please refer to the information on the product label.

Warranty

- Product warranty will expire 12 months after the product is first taken into use, but will in any case expire at the latest 13 months after delivery.
- Normal wear and tear on parts is not included within the warranty.
 - Normal wear and tear is that which requires a part change or other adjustment/overhaul during standard tools maintenance typical for that period (expressed in time, operation hours or otherwise).
- The product warranty relies on the correct use, maintenance, and repair of the tool and its component parts.
- Damage to parts that occurs as a result of inadequate maintenance or performed by parties other than Atlas Copco or their Certified Service Partners during the warranty period is not covered by the warranty.
- To avoid damage or destruction of tool parts, service the tool according to the recommended maintenance schedules and follow the correct instructions.
- Warranty repairs are only performed in Atlas Copco workshops or by Certified Service Partners.

Atlas Copco offers extended warranty and state of the art preventive maintenance through its ToolCover contracts. For further information contact your local Service representative.

For electrical motors:

- Warranty will only apply when the electric motor has not been opened.

ServAid

ServAid is a portal that is continuously updated and contains Technical Information, such as:

- Regulatory and Safety Information
- Technical Data
- Installation, Operation and Service Instructions
- Spare Parts Lists
- Accessories
- Dimensional Drawings

Please visit: <https://servaid.atlascopco.com>.

For further Technical Information, please contact your local Atlas Copco representative.

Safety Data Sheets MSDS/SDS

The Safety Data Sheets describe the chemical products sold by Atlas Copco.

Please consult the Atlas Copco website for more information www.atlascopco.com/sds.

Original instructions



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