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AIR300

Hardware Manual

for Motorola Workabout Pro-G4



V26/02/15

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February 2015

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Content

1	Introduction.....	4
2	Installation of the AIR300 LF-RFID-Reader.....	4
3	Reading transponders	6
4	Using an external antenna.....	8
5	Safety and care	11
6	Warranty.....	11
7	CE MARKING.....	12
8	FCC and IC digital device limitations.....	12
9	Trouble shooting.....	12

1 Introduction

The Agrident Integrated Reader 300 (AIR300) is a Low Frequency RFID reader working on 134.2KHz, which is designed for the Motorola Workabout Pro - generation 4. It is backwards compatible to the generations 2 and 3. Since this reader is using the internal USB port for power supply and communication, it cannot be used with generation 1 of the Workabout Pro, which does not have an internal USB connector.

Mechanically the AIR300 is using the expansion end cap of the Workabout Pro. That means that it is physically not possible to operate the reader together with other expansion modules that are using the extended end cap position.

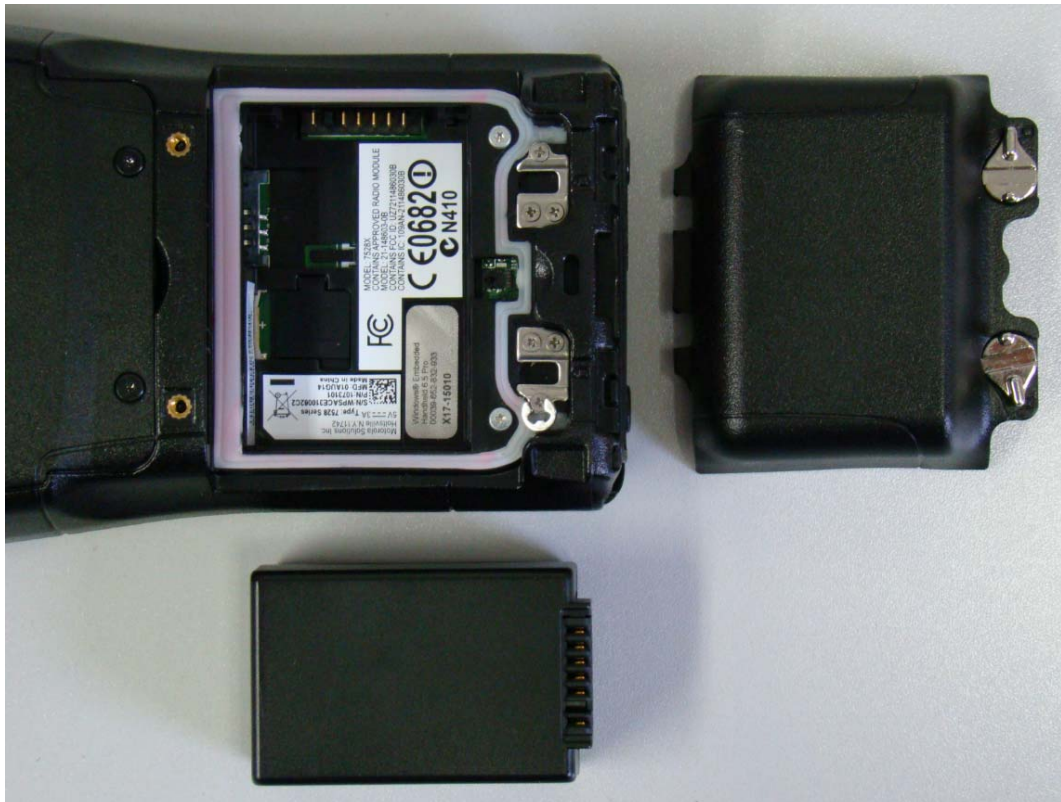
For all approval and safety information concerning the WORKABOUT Pro Generation 4 please visit www.motorola.com or contact your local Motorola distributor.

2 Installation of the AIR300 LF-RFID-Reader

The following installation instructions refer to the WORKABOUT PRO G4 – short version. The instructions and pictures might vary for the long version and for other generations of the Workabout Pro. Please also see the corresponding Workabout Pro documents for details. Currently the manuals for all generations of the WORKABOUT PRO are available for download here: <http://community.psim.com/knowledge/w/knowledgebase/562.workabout-pro-product-manuals.aspx>

Before installing a module in the WORKABOUT PRO G4, all power sources must be turned off.

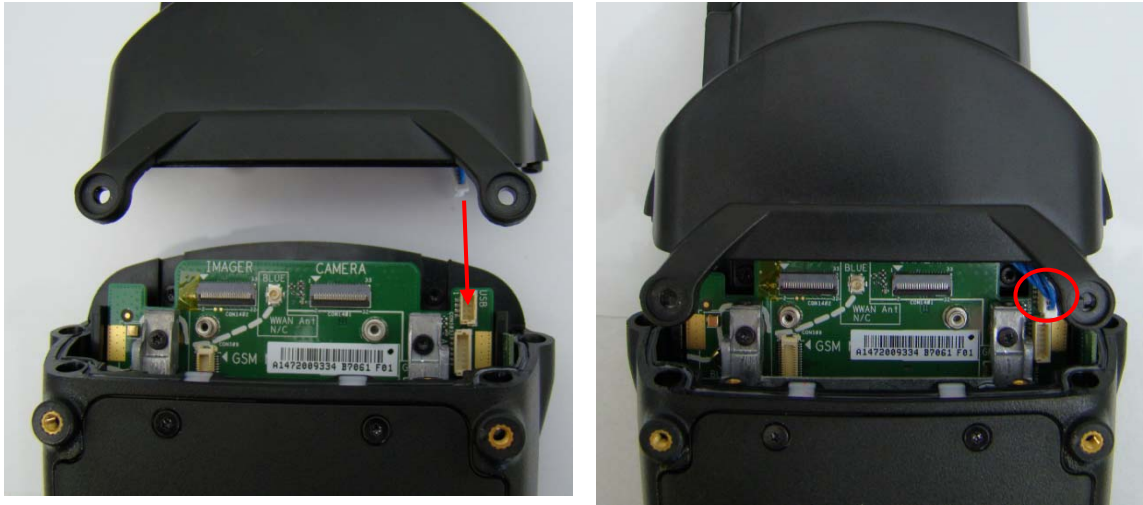
If your unit is using AC power, disconnect it. Now remove the battery cover and the battery.



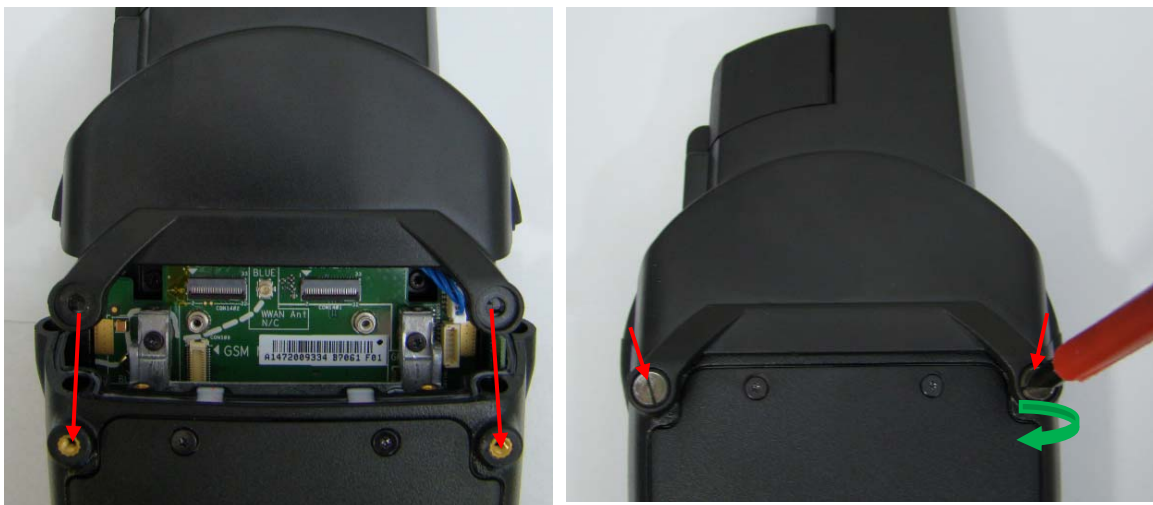
With the power shut down, you can install the RFID Module AIR300.

Remove the end cap at the top of the WORKABOUT PRO G4.

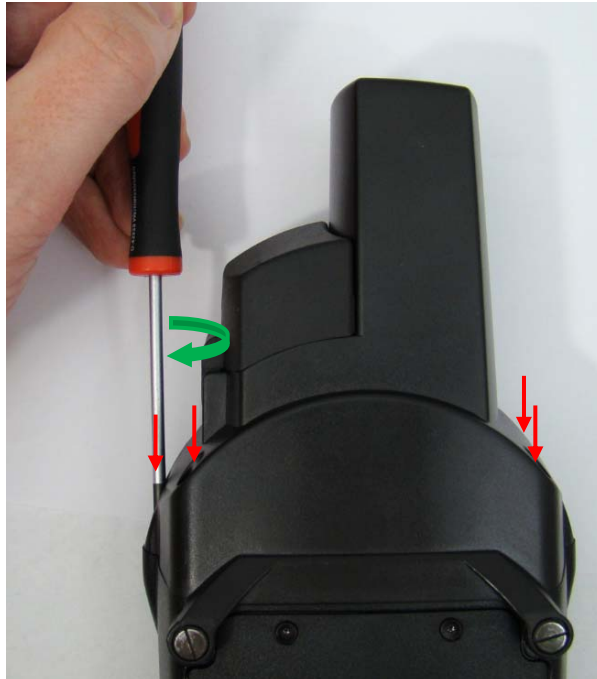
Connect the USB connector.



Attach the AIR300 housing to the WORKABOUT PRO. Please fix the AIR300 housing with the two provided M2.5x6 flat-head screws. If you are using the hand strap for the WORKABOUT PRO, please use the provided 10 millimeter screws instead.



Fix the four screws that were used for mounting the original end cap of the WORKABOUT PRO into the corresponding holes AIR300 housing.



Insert the battery and attach the cover plate. You may now switch on your WORKABOUT PRO. Refer to the manual for your management software concerning details about reading transponders. Please be aware that some registry keys are required to allow Windows loading the appropriate USB Driver! Please refer to the corresponding documents for details.

3 Reading transponders

If the AIR300 is activated from your software, the LED is blinking red slowly. If a transponder is being read, the LED color will change to green.



RF is activated but no tag is in range



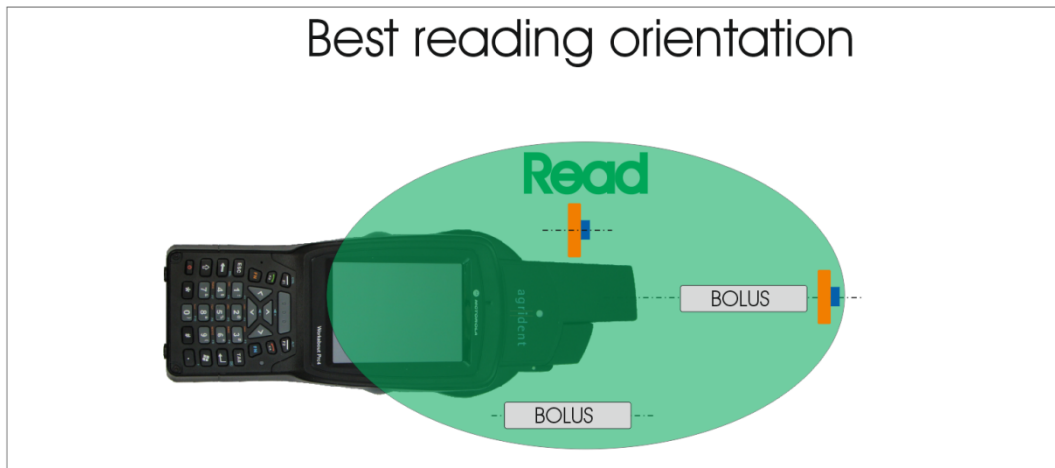
RF is activated and a tag is in being read

The green LED is blinking very fast if a tag is read. It is switched on each time the reader detects the transponder. If your software is switching off the AIR300 directly after reading, you might only see the LED flashing green once.

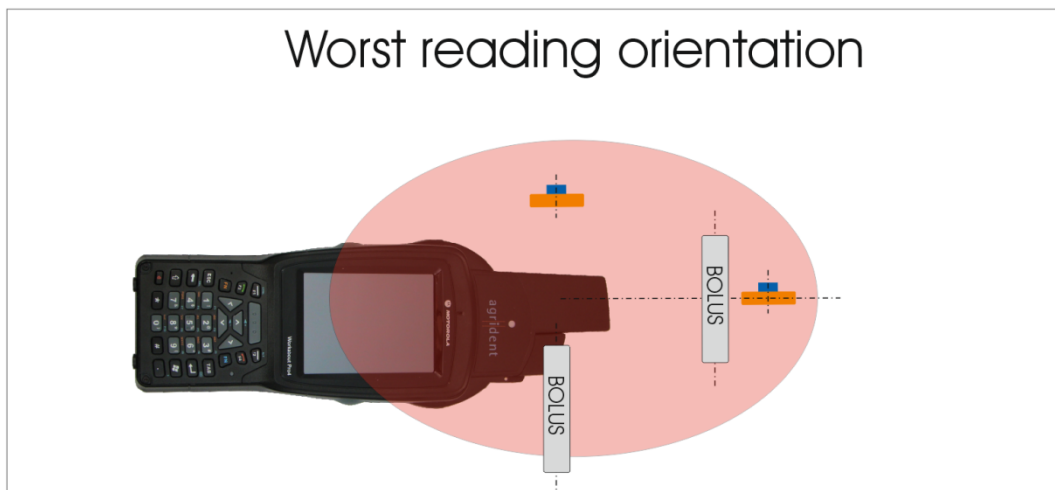
The reading range depends on tag type and tag orientation. The following picture shows the field distribution of the AIR300 antenna:



As a result, there is an optimum orientation:

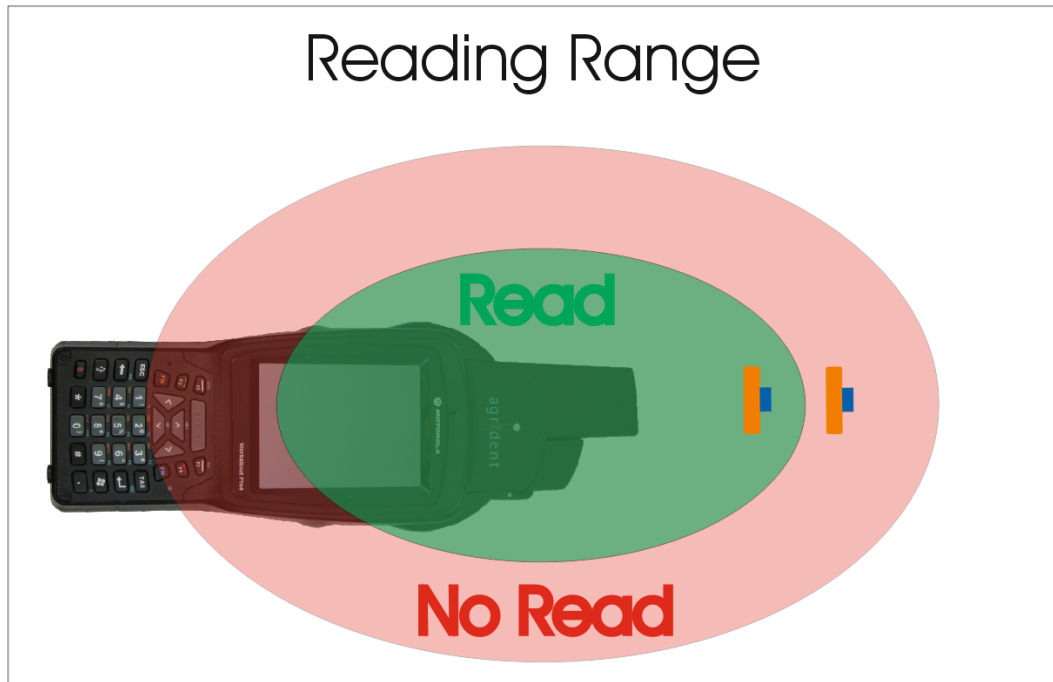


... and an unfavorable orientation:



Since Boluses also contain glass tags, the reading orientation for injectables is the same as shown for the Boluses.

The reading ranges are up to 25 centimeters for large, high quality transponders. For small injectable tags (like used for pets, e.g. 2x12mm), the reading ranges are much smaller. This is due to physical laws and thus cannot be changed.



The optional external antennas also contain a ferrite rod. Hence the reading characteristics are similar to the AIR300 internal antenna.

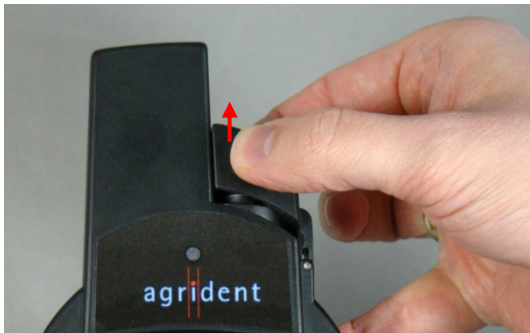
4 Using an external antenna

Agrident also provides external antennas for the AIR300, for example the AEA580. External antennas extend the physical read range while the electrical characteristics are similar to the internal antenna.



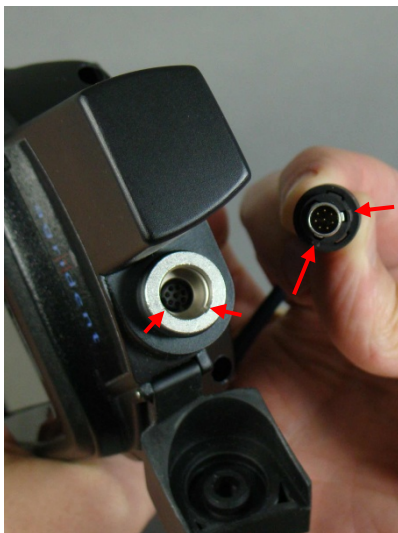
This antenna can be connected to the AIR300 by using the external antenna connector on top of the reader.

Remove the protection cap from the external antenna plug by pulling it to the top first. Now it can be folded to the side.



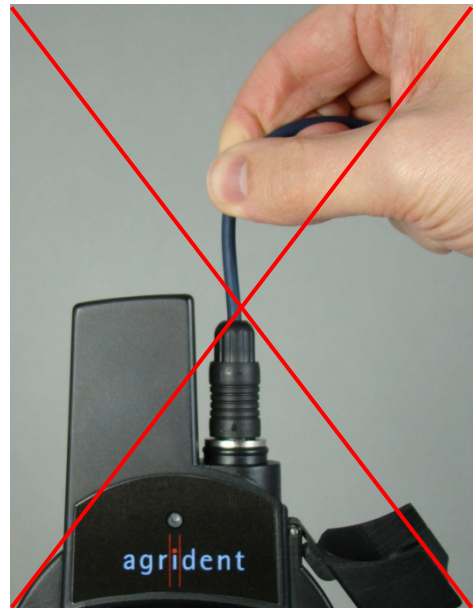
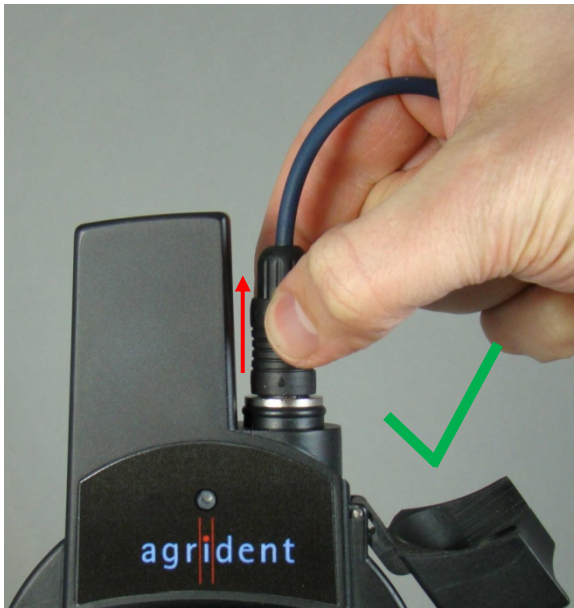
The antenna connector fits into the AIR300's socket in only one position. Therefore the grooves in the socket and the notches in the cable connector have to match.

Insert the antenna connector into the plug in the correct position and press it down until it is snapped in.

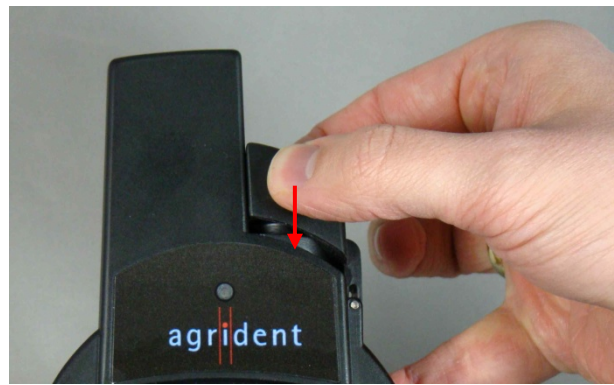


The push-pull locking style offers a quick and safe connection. The AIR300 automatically detects the presence of an external antenna. In this case only the external antenna will be used, the internal one is disabled. If the external antenna is removed, the reader will use the integrated antenna again as soon as a new reading attempt is started.

When removing the external antenna from the reader, please pull the sleeve of the connector back in order to unlock the connection. Do not pull the cable – this does not unplug the antenna connector!



After removing the external antenna connector from the reader, it is very important to attach the protection cap again in order to protect the connector and the AIR300 electronics from moisture and dust. Therefore please fold the protection cap back into the direction of the internal antenna and press it down into the initial position.



5 Safety and care

The manufacturer accepts no liability for damage resulting from improper use or use not consistent with that described in these operating instructions.

- The AIR300 Reader contains no parts that can be repaired by the user. For this reason the Reader Electronic may only be repaired by authorized customer service personnel.
- In both operation and storage of the reader please secure to comply with the environment conditions specified in the technical data.

Any modification to the AIR300 Reader will render the warranty null and void.

6 Warranty

The manufacturer of the AIR300 Reader will provide a warranty of

12 months

from the day the device is shipped and subject to the following conditions:

- a. Without submission of proof of purchase no warranty can be given.
- b. In the event that defects are detected the manufacturer is entitled to choose between up to two attempts at repair or supplying a replacement device on one occasion. The warranty period for the repaired item or for a replacement item is 3 months but will always extend to the end of the original warranty period. No further claims can be entertained, especially claims for compensation for consequential losses. This exclusion of liability does not apply to claims made on the basis of the Product Liability Act.
- c. Warranty claims cannot be entertained unless the Agrident system was installed properly and used properly and for the purpose intended.

No warranty obligations exist in particular when:

1. Damage is attributable to improper use of the device, to a incorrect connection or incorrect operator action;
2. The device was not cared for and maintained in accordance with the manufacturer's recommendations and this is the cause of the damage;
3. The damage is due to any modification to the device;
4. The damage is due to force majeure, for example, lightning strike;
5. The damage is due to wear resulting from overstressing mechanical parts.

7 CE MARKING

Hereby, Agrident declares that this equipment, if used according to the instructions, is in compliance with the essential requirements and other relevant provisions of the RTTE Directive 1999/5/EC. For use in all countries of the EU.

To obtain a copy, contact Agrident and request the “Declaration of Conformity” document for Multi-technology readers.

mail@agrident.com

In case of alteration of the product, not agreed to by us, this declaration will lose its validity.

This symbol indicates proof of conformity to applicable European Economic Community Council directives and harmonized standards published in the official journal of the European Communities.



8 FCC and IC digital device limitations

FCC § 15.19

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.

FCC § 15.21 (Warning Statement)

[Any] changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canada CNR-Gen Section 7.1.3

This device complies with Industry Canada licence-exempt RSS standard(s). 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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

9 Trouble shooting

For any problem please contact us:

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