

BIOLOG-ID RFID TUNNEL READER

USER MANUAL



biolog id

Connecting healthcare to empower people

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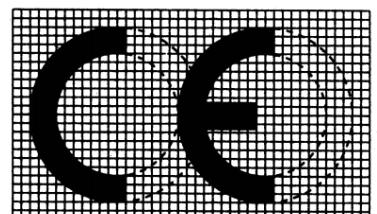
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1. General user information.



Please read this user manual carefully and in its entirety before using the equipment.

This manual provides thorough information on how to use the RFID tunnel reader and how to conduct a proper and safe maintenance.

Please keep all the documentation related to the RFID tunnel reader throughout its lifetime.

1.1 Intended audience

This manual is intended for any user likely to carry out operations with the RFID tunnel reader. It covers all the fields and topics relevant to the different user groups.

1.2 Structure of the manual

The structure of the chapters is consistent with the use of the RFID tunnel reader, step by step. Please read carefully chapter 3, dedicated to general safety instructions.

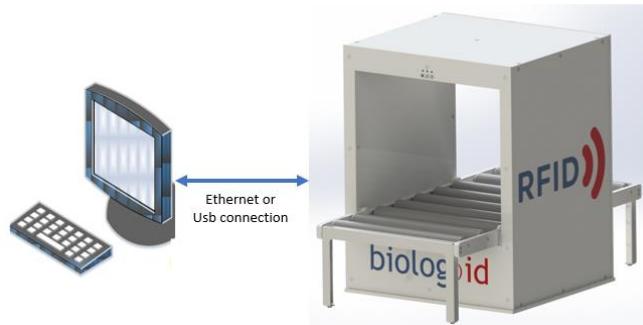
1.3 User advice

If you cannot find answers to questions linked to the operation or use of the RFID Tunnel Reader, do not hesitate to contact us at the following email address Customercare@biolog.com.

2. Presentation

2.1 Claimed use

The RFID tunnel reader is part of the traceability solution offered by Biolog-id. The RFID tunnel reader is a device designed to mass-reading RFID tags.



The RFID tunnel reader must be used only with Biolog-id applications. The RFID tunnel reader is compatible with a Biolog-id dedicated middleware that can be interfaced with any third-party software via Web-Service.

2.2 Environmental characteristics

The environmental characteristics of use and storage of the RFID tunnel are specified in the table below. These must be observed in order to maintain a good operating behavior of the equipment.

Operating temperature	15 to 30°C
Storage temperature	0 to 50°C
Maximum storage humidity	80% RH
Maximum altitude	2000m
Use	Indoor

2.3 Description of the product

This chapter details the components associated to the RFID tunnel reader and their functions.

2.3.1 Antennas

In order to guarantee an optimal read & encoding process, the RFID tag must be placed on the bag's label in the positioning zone as described below :

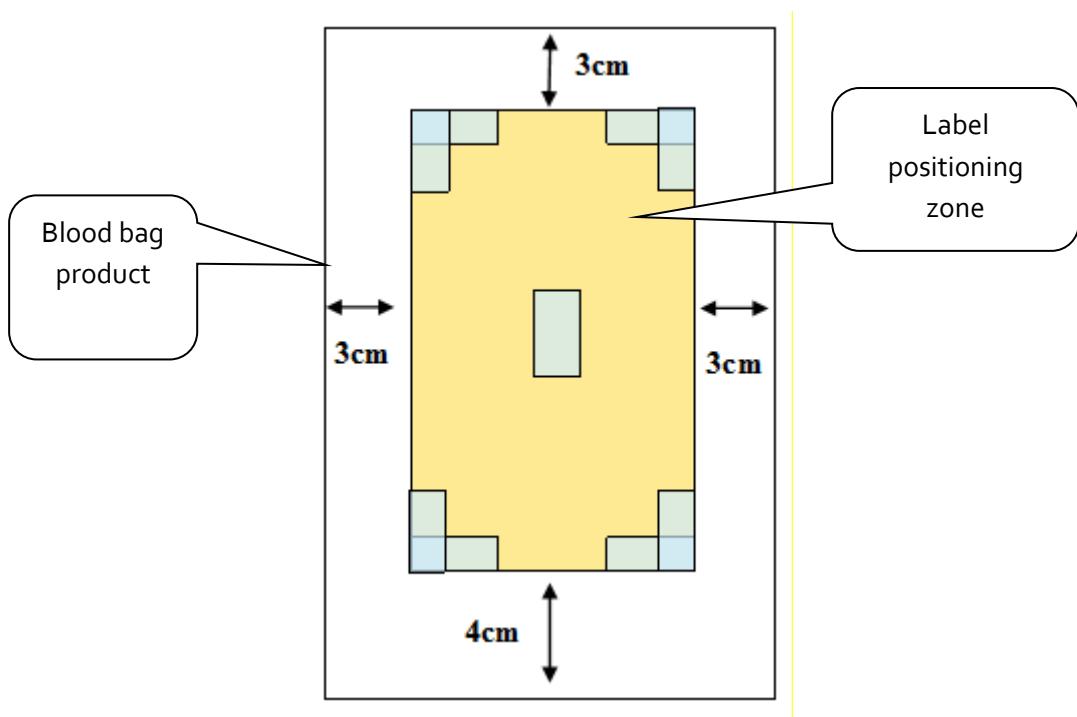


Figure 1 Tag Positioning

2.3.2 RFID tunnel reader power supply

Power supply information:

Input Voltage	100 – 240 VAC +/- 10%
Input Frequency	50 – 60 Hz
Input Current	1.5A
Over Voltage Category	Cat II
Pollution degree	2

The RFID tunnel reader is certified with the specific power supplies below:

Model: TRH70A240 (CINCO ELECTRONICS CO LTD)



Fig. Power supply TRH70A240

Model: GTM96900P9024-T3 (GLOBTEK®, Inc.)



Fig. Power supply GTM96900P9024-T3

Don't use another power supply with the device as the performance could be impacted.

2.3.3 Hardware and software compatibility

This chapter details the third-party hardware and software compatible with RFID tunnel reader.

- Hardware compatibility:

The RFID tunnel only works with RFID tags supplied and validated by Biolog-id. The list of labels compliant with the RFID tunnel can be requested from the quality department at the following email address qualite@biolog-id.com.

- Software compatibility:

The RFID tunnel is compliant with software which has been validated by Biolog-id. For more information on these software, do not hesitate to contact the quality department at the following email address qualite@biolog-id.com.

The use of the RFID tunnel with other application software must be subject to a specific evaluation carried out by Biolog-id.

2.4 Product Use

The purpose of this chapter is to show how the RFID tunnel reader works.

The RFID tunnel reader is compliant with a Biolog-id dedicated middleware that can be interfaced with any third-party software via Web-Service. As such, the third-party software must alert the user in case of a gap between the number of tags expected vs read.

2.4.1 Tunnel handling

The movement and handling of the tunnel must be carried out by two people.

We recommend that these people be on each side of the tunnel and carry the tunnel by holding it by the four corners at the bottom of the tunnel as shown in the photo below:



2.4.2 Container preparation

For optimal performance, the user must follow to the following recommendations when preparing the container.

Bags must not be stored randomly inside the container:

- **Red Blood Concentrates:** bags must be stored flat, displayed by layers. Successive layers shall be displayed offset (staggered rows) to prevent tags from being stacked between two layers.
- **Platelet Concentrates:** bags must be stored flat inside the container. Spacers must be used to ensure an optimal RFID performance, especially if the bag is thinner than 30mm.
- **Fresh Frozen Plasma:** no specific instruction for fresh frozen plasma bags. Avoid bulk storage inside the container.

Twice types of container could be used with the RFID tunnel:

- Cardboard box



1 – Put the bags inside the container
accordingly to previous instructions

2 – Pass the container through the tunnel
(both directions are possible)



- Plastic box

Ask Biolog-id member for the reference of the container.

The RFID tunnel is capable to read:

- Up to 50 RFID tags on frozen plasma bags
- Up to 30 RFID tags on red blood cell concentrate / platelets concentrate bags

A one-second downtime is recommended inside the tunnel when passing product bags with RFID tags in order to obtain an optimal reading.

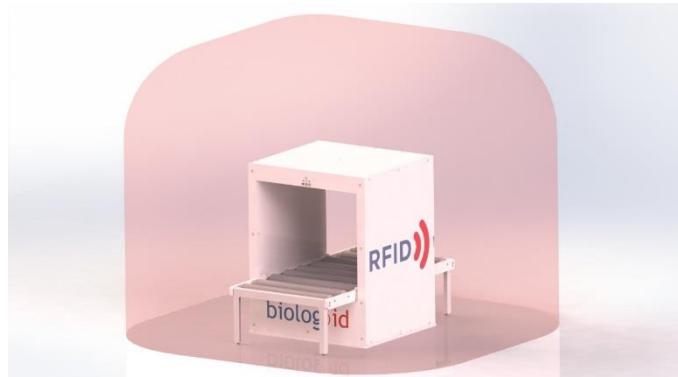


Figure 2 RFID tag

2.5 Work area

A work area of 50 cm shall be defined around the tunnel to prevent any interference with the operation of the RFID tunnel reader.

Do not leave any tag lying around inside this work area (**50 cm**). Metallic parts might also impact the reading.

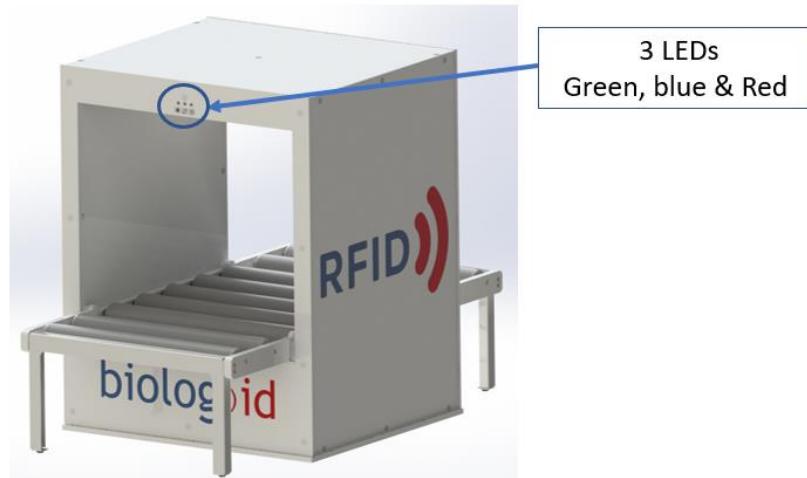


The RFID tunnel reader must be placed on a smooth flat surface. Avoid any surface with metallic parts.

In addition to these recommendations, do not put any object on the upper side of the tunnel to prevent damage.

2.6 Front LEDs status

The RFID tunnel reader has 3 LEDs in the front, below the location:



<u>Green - Stationary</u> 	Tunnel turned on
<u>Blue - Stationary</u> 	At least, one RFID tag detected (under reading mode)
<u>Red - Stationary</u> 	Malfunction (Of RFID-reading)
LEDs off	RFID-reading off, power supply off

The table below explains the first level faults, which you may have to perform when using the RFID tunnel.

Troubleshooting		
Symptom	Possible causes	Corrective Action
Green LED off	Power supply	Check if the device was plug at the power
The Tunnel RFID was not detected	The link between the device and the computer	Check if the cable between the both was plug
RFID chip is not reading	Reading Failure	Restart the reading with the software installed
The RFID chip is empty	Encoding Failure	Restart the encoding with the software installed

If the corrective actions don't solve the problem, contacting Customercare@biolog.com

3. Safety instructions

This chapter provides a detailed description of the safety instructions applicable when using the RFID tunnel reader.

Please read these instructions carefully.

3.1 General safety instructions.

	<ul style="list-style-type: none"> Ensure that the installation and settings work is carried out by qualified personnel. Operations carried out by personnel lacking the requisite skills may affect the performance of the device and cause personal injury or equipment damage. Only qualified customer service technicians are authorized to carry out maintenance operations and repairs. Ensure the connecting cable is not trapped or kinked during installation or when moving the device. Never dismantle or modify any of the system components after the installation has been validated The RFID tunnel reader must not be stored or used outside the temperature and atmospheric pressure ranges specified in this manual (Chapter 2.2) The RFID tunnel reader must be fixed in such a way as to prevent it from being dismantled without tools (for maintenance purposes). To prevent short-circuiting or oxidization of the metal parts, never allow water or any other liquid to penetrate the device. Use of the RFID tunnel reader is restricted to trained personnel qualified to work in a medical environment. Unless carrying out maintenance, never unplug the power supply (100 -240V AC/24V DC), never disconnect the Ethernet network cable.
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- Never push the RFID tunnel reader.
- Never sit on the RFID tunnel reader.
- Never climb onto or walk on a RFID tunnel reader.
- Never put any object on the RFID tunnel reader.

RISK	SAFETY INSTRUCTIONS
Contamination	Follow the cleaning instructions (chapter 4).
Handling	Operators must undergo authorized Biolog-id training so that they know how the product works, are familiar with the documentation and, more specifically, are aware of the safety instructions.
Electrical	Power supply connecting cables must be installed in accordance with applicable national regulations.
Electrical	Machine-specific electrical voltages must be considered and compared with the voltages available at the installation location on the data plates before the installation is connected.
Electrical	Machine wiring diagrams must be complied with.
Electrical	The device must be connected to a socket with a circuit protection conductor
Electrical	To prevent the system from breaking down due to problems with other electrical devices, it must be connected to a separate electrical circuit. Under no circumstances should it be connected to a multi-socket along with other electrical devices.
Electrical	Before connecting and commissioning the machine, check that the power supply is connected correctly. Ensure that the device connecting plug is readily accessible so that it can be pulled out easily when necessary, without having to push other devices out of the way. The power plug serves as a network disconnection device.
Mechanical	Regularly check the fastenings. Ensure that only trained operators familiar with safety measures use the RFID tunnel reader.

3.2 RF radiation hazards

	<p>Using ACCESSORIES, transducers or cables other than those specified can increase EMISSIONS or reduce the IMMUNITY of the DEVICE or EM SYSTEM. This does not include transducers and cables sold by the MANUFACTURER of the DEVICE or EM SYSTEM and used as spare parts to replace internal components.</p> <p>The DEVICE or EM SYSTEMS can be affected by interference caused by other devices even if they comply with CISPR EMISSION requirements.</p> <p>The RFID tunnel reader electronic system antennas each emit a frequency of 13.56 MHz with a power output lower of 4W (the law applicable to the design of RFID readers prohibits a power output exceeding 4W).</p> <p>Portable or mobile RF communication devices can affect MEDICAL ELECTRICAL DEVICES</p> <p>The DEVICE or EM SYSTEM must not be used beside other devices or stacked on top of them.</p>
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3.3 Contraindication

People with a pacemaker are advised not to use the RFID tunnel reader.

3.4 Electromagnetic compatibility

The RFID tunnel shall not be stored in a disruptive area :

- Close to other electrical devices or equipment (1 meter)
- Close to other tags around (as described in 2.5)
- In a metallic environment (as described in 2.5)
- Any other radiofrequency signal

3.5 Warning for United States users

**Federal Communication Commission Interference
Statement 47 CFR Section 15.105(b)**

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 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 PRD_7320002A 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.

NO UNAUTHORIZED MODIFICATIONS
47 CFR Section 15.21

CAUTION: This equipment may not be modified, altered, or changed in any way without signed written permission from Biolog-id. Unauthorized modification may void the equipment authorization from the FCC and will void the Biolog-id warranty.

This device complies with FCC RF radiation exposure limits set forth for general population (uncontrolled exposure). This device must be installed to provide a separation distance of at least 20cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

3.6 Warning to users in the CANADA / Attention pour les utilisateurs au CANADA

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.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This device complies with Industry Canada RF radiation exposure limits set forth for general population (uncontrolled exposure). This device must be installed to provide a separation

distance of at least 20cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

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) il ne doit pas produire de brouillage, et (2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada.

Dans le but de réduire les risques de brouillage radioélectrique à l'intention d'autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Le présent appareil est conforme aux niveaux limites d'exigences d'exposition RF aux personnes définies par Industrie Canada. Cet appareil doit être installé afin d'offrir une distance de séparation d'au moins 20cm avec l'utilisateur, et ne doit pas être installé à proximité ou être utilisé en conjonction avec une autre antenne ou un autre émetteur.

4. Cleaning instructions

4.1 Prerequisite

To clean the RFID tunnel reader and maintain it in good working condition, we recommend following the instructions below.

Only staff members trained by the company are authorised to clean the RFID tunnel reader. Staff members responsible for cleaning the RFID tunnel reader must be familiar with how it works, its documentation and more specifically safety instructions.

The device must be cleaned or disinfected before use. The RFID tunnel reader must be cleaned at least once a month and more frequently if necessary, for it to operate correctly.

	<p>Do not use cleaning products containing:</p> <ul style="list-style-type: none">-Acids or halogen compounds (chlorides, bromides, halides)-Strongly acidic salts such as formic acid or sulphonic amino acid descalers- Drain unblockers, hydrochloric acid, silver cleaners- Chlorine- Abrasive compounds or scourers (scouring powder, steel wool)- Polishing products, waxes, bleaching agents <p>Always follow the cleaning product manufacturers' instructions regarding temperature, dosage, acting time, etc.</p>
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4.2 Procedure

Use a spray product chemically compatible with the RFID tunnel reader component materials.

1) Spray the detergent / disinfectant onto a non-woven wipe.



2) Spread the product evenly



After completing all cleaning operations, check that the device is operational.

5. Warranty

Failure to observe any of the recommendations will void the warranty.

6. Transport

When receiving the RFID tunnel reader, verify that it has not been damaged during transport. If you notice any transport-related anomalies, immediately contact your carrier or retailer and show them the delivery note or purchase order.

The required transport conditions are determined by Biolog-id. They must be respected to preserve the physical integrity of the device.

7. Manufacturer liability

The manufacturer shall not be held liable in the following cases:

- *Failure to observe the manufacturer's installation recommendations.*
- *Work or repairs carried out by persons who have not been authorised by the manufacturer.*
- *Using the device as part of an electrical installation that does not comply with applicable regulations.*
- *Using the device for purposes other than those specified in this manual*
- *Using accessories (RFID tags, etc.) other than those supplied by Biolog-id*

8. Service life

The service life of the device under recommended usage and maintenance conditions is 10 years.

9. Disposal and recycling

The disposal and recycling of the RFID tunnel must comply with the applicable national regulations. The various different components of the RFID tunnel must be sorted and processed according to the appropriate waste treatment channels.



The different components of the RFID tunnel which correspond to electrical and electronic equipments, must be taken care of by a specialized collection, removal, and recycling or destruction channel.

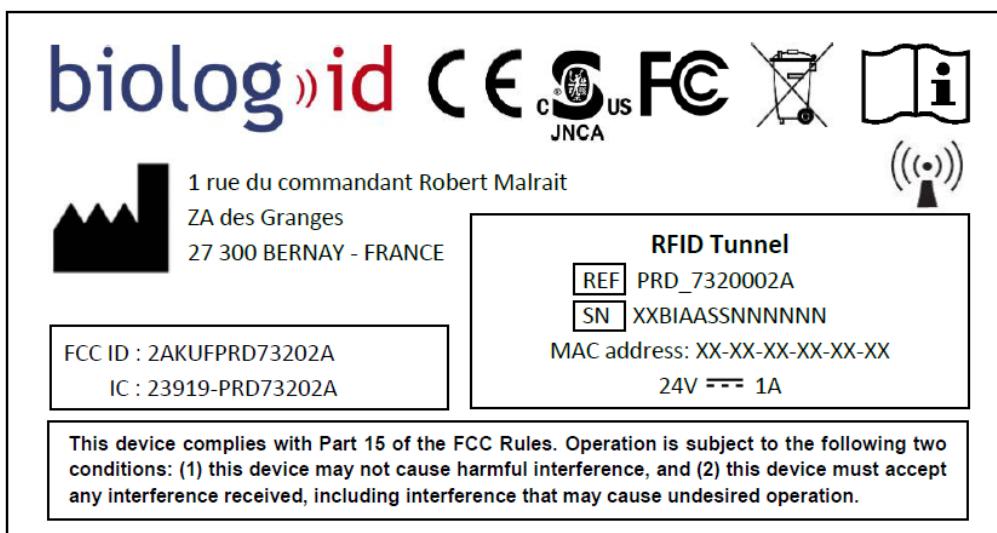
10. Product identification

The product label below is affixed to each RFID tunnel reader.

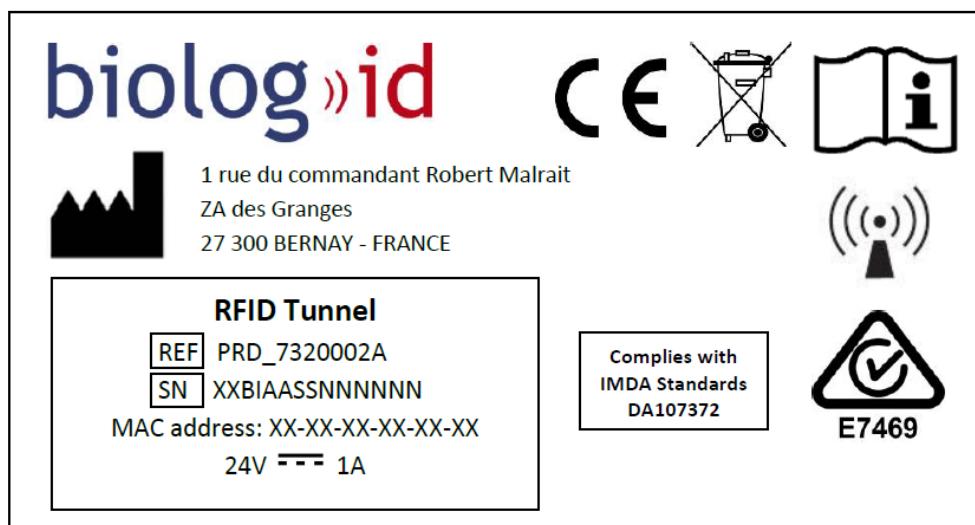
Label for Europe:



Label for United States of America and Canada:



Label for Australia, New Zealand, and Singapore:



Detailed view of serial number XX BI YYWWXXXXXX:

- **Product version:** 2 numbers.
- **Supplier index:** 2 letters: BI (index allocated to each supplier and provided by BIOLOG_ID: BI represents Biolog-Id).
- **Year:** 2 characters: 00 to 99: 16 represents 2016
- **Week:** 2 characters: 01 to 52: 45 represents week 45
- **Serial number:** 6 characters: 000001 to 999999

Logo description:



: Read the User Manual.



: This product must be collected by a specific channel and must not be thrown in a conventional trash.



: This product emits an electromagnetic field.



: This product is CE compliant.



: This product is FCC compliant.



: This product is NRTL compliant.



E7469 : This product is RCM compliant.



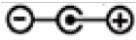
: Product manufacturing address.



: Direct current.



: Alternating current.



: Center Positive (V+).

For Brazil, Compliance to ANATEL requirements:



"Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados"

i.e. "This equipment has no right to protection against harmful interference and cannot cause interference in duly authorized systems".