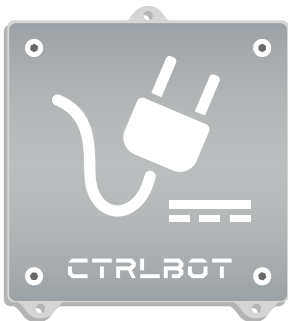


CTRLBOT

(HW01)



INSTALLATION MANUAL

www.opengrow.pt

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GL-MN-0018-02

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1. SAFETY

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General guidelines

The following general safety guidelines are provided to help to ensure your own personal safety and protect your device from potential damage.

- Do not attempt to service the device. For some devices with a user-replaceable battery, please read and follow the instructions provided by the installation manual.
- Keep your device away from radiators and heat sources.
- Keep your device away from extremely hot or cold temperatures to ensure that it is used within the specified operating range.
- Do not spill food or liquids on your device.
- Before you clean your device, disconnect it from the electrical outlet. Clean your device with a dry soft cloth. Do not use liquids.
- If your device does not operate normally - in particular, if there are any unusual sounds or smells coming from it - unplug it immediately and contact an authorized dealer or the Open Grow support center.
- To help avoid the potential hazard of electric shock, do not connect or disconnect any cables, or perform maintenance or reconfiguration of your device during an electrical storm.
- Check the voltage rating before you connect the device to an electrical outlet to ensure that the required voltage and frequency match the available power source.

- Ensure that your GroLab devices and attached devices are electrically rated to operate with the AC power available in your location.
- Do not plug the power cables into an electrical outlet if the power cables are damaged.
- Do not use the device with an unstable electrical installation, or if it is prone to power surges or voltage transients.
- To prevent electric shock, plug the power cables into properly grounded electrical outlets.
- To avoid the risk of shock, do not expose this equipment to rain, moisture, or liquid spillage.
- If you use an extension power cable, ensure that the total ampere rating of the devices plugged into the extension power cable does not exceed the ampere rating of the extension cable.
- The device must be protected from environmental extremes during storage as well as after installation. Ingress of dust and moisture must be prevented. Heating of the room may be necessary to prevent any incidence of humidity during storage or before commissioning.

The dangers from electricity

Harm can be caused to any person when they are exposed to 'live parts' that are either touched directly or indirectly by means of some conducting object or material.

Electrical shocks from faulty equipment can cause severe and permanent injury and may also lead to indirect injuries due to falls from ladders, scaffolds, or other work platforms. Faulty electrical devices can also lead to fires. As well as causing injuries and loss of life, fires cause damage to plant, equipment, and property.

Most electrical accidents occur because: **individuals are working on or near equipment which is thought to be dead but which is, in fact, live; individuals are working on or near equipment which is known to be live, but where those involved are without adequate training or appropriate equipment, or they have not taken adequate precautions; misuse equipment or use electrical equipment which they know to be faulty.**

Reducing the risk of electric shock

To reduce the risk of electric shock:

- Install the device in a temperature and humidity controlled indoor area free of conductive contaminants. Ambient temperature must not exceed 55°C.
- Remove watches, rings, and other metal objects.
- Use tools with insulated handles.
- Wear personal protective equipment (PPE).

First Aid

Before commencing any work:

- Find out the location of a suitably stocked first-aid box.
- Find out the arrangements that exist on-site for first-aid, and who is responsible for taking charge of these.

2. SPECIFICATIONS

<i>Hardware Version</i>	HW01
<i>Dimensions</i>	91mm x 91mm x 28.7mm
<i>Exterior</i>	Casing: Stainless Steel & Acrylic Colors: Silver & White Physical buttons: Reset
<i>Ambient Operating Temperature</i>	0 to 55°C
<i>Relative Humidity</i>	<95% non-condensing
<i>Expected Service Life</i>	>5 years
<i>Power Supply</i>	3 x 12V/2A 5V/1A
<i>Power Supply Adapters Included</i>	Yes
<i>Power Supply Adapter Cable Length</i>	1 meter
<i>Connections</i>	USB 2.1 Type-B 5V/1A SMA female 3 x Power Entry 12V/1A 24V/2A 5 x 2.5mm 4-Pin male (10 x 12~24V Actuators)
<i>Antenna Included</i>	Yes
<i>USB Cable Included</i>	Yes (Type B-A)
<i>USB Cable Length</i>	2 meters
<i>Connector Plug Included</i>	Yes (5 x 2.5mm 4-Pin female)
<i>Inter-Module Communication</i>	Radio Frequency - 2.4GHz
<i>Visual Indicators</i>	Green LED
<i>Warranty</i>	3-year limited hardware warranty

3. DESCRIPTION

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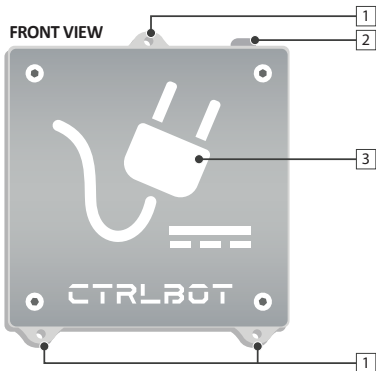
The GroLab CtrlBot is a module that extends the capabilities of the GroLab system (grow controller). This module supports up to 10 actuators of 12~24VDC allowing to connect a wide variety of devices like water pumps, solenoid valves, peristaltic pumps, relays, air pumps, and power contactors.

GroLab CtrlBot offers the capability to independently control those 10 actuators making it possible to automate a variety of systems like irrigation, lighting, and airflow.

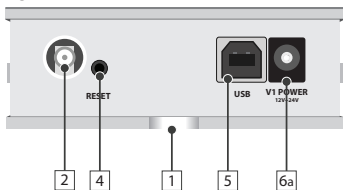
What is in the box

- GroLab CtrlBot.
- RF Antenna.
- 3 x 12V/2A Power Supply Adapter.
- USB Type B-A cable.
- 110~230VAC / 5VDC transformer
- 5 x Connector Plug (2.5mm 4-Pin female).
- Installation manual.

4. COMPONENTS

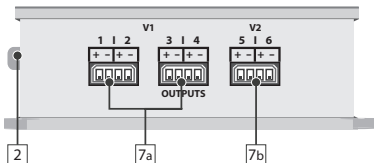


TOP VIEW

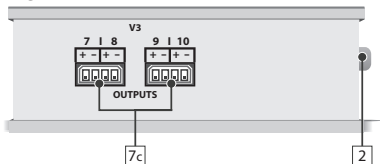


- 1 Brackets for wall-mounting
- 2 RF antenna outlet
- 3 Status signal LED
- 4 Module reset button
- 5 Type-B USB outlet
- 6a 12~24V_{DC} power supply input (V1)

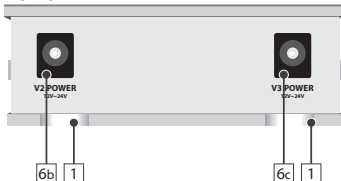
LEFT VIEW



RIGHT VIEW



BOTTOM VIEW



1 Brackets for wall-mounting

2 RF antenna outlet

6b 12~24V_{DC} power supply input (V2)

6c 12~24V_{DC} power supply input (V3)

7a 12~24V_{DC} actuators/outputs (V1)

7b 12~24V_{DC} actuators/outputs (V2)

7c 12~24V_{DC} actuators/outputs (V3)

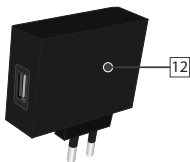
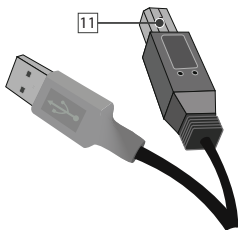
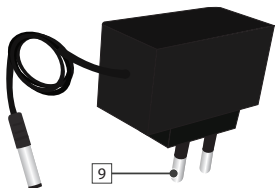
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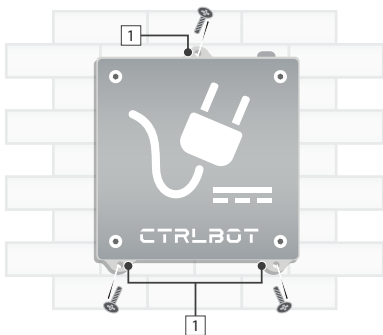


- 8 RF communication antenna
- 9 110~230V_{AC} / 12~24V_{DC} power supply
- 10 4-Pin quick connector
- 11 USB Type-B cable
- 12 110~230V_{AC} / 5V_{DC} transformer

EN 5. INSTALLATION

ES Initial assembly

FR Place the module on a firm surface, far from flood-prone areas. It is recommended that the module be mounted on a wall, use the brackets for wall-mounting (1), and appropriate screws (M3 screws type), also make sure to use appropriate tools for this task.

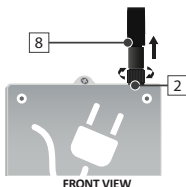


NOTE: It is recommended to place the module at least 40 centimeters away from other GroLab modules.

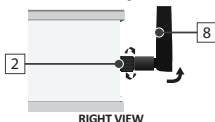
Antenna connection

Once the module has been mounted, screw the communication antenna (8) into the module port (2). For correct communication, turn the antenna to position it vertically according to the direction of the module. Please, refer to the two illustrations below that shows the correct position for the antenna based on on where the module was installed.

Wall-mounted



On a surface

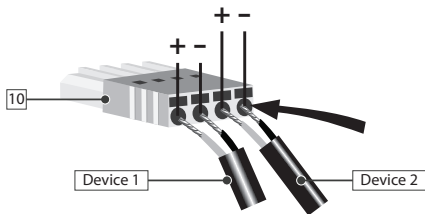


EN Peripherals connection

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Connect the peripheral cables to the 4-pin quick connectors (10). Each quick connector (10) is divided into two sections, one for each device.

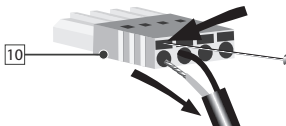
Perform the following steps to connect the peripherals correctly without generating polarity problems.

First, connect the cables from the peripherals (OUTPUTS) in the following order, respecting the position of the connector (10):

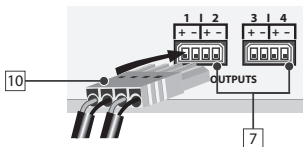


Twist the bare wire and cut it with a cutting tool so that, when inserted in the quick connector (10), it is not exposed and does not cause bad contact with other cables.

To remove a wire from the connector (10), use a pin to press the hole associated with each cable located on the surface of the connector. Finally, pull the cable out of the hole to remove it.



Lastly, connect the quick connectors (7) to the respective outlets.

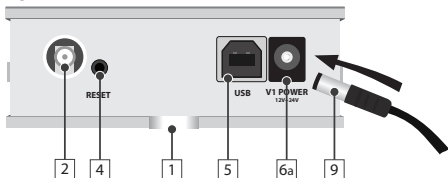


⚠ NOTICE: A wrong connection can deteriorate your devices or the module itself.

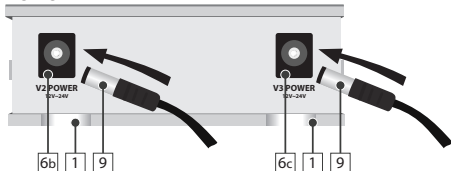
Power connection

Once the connection of the peripherals is done, it is time to connect the power supplies (9). In this way, connect the power cable from the three power supplies (9) to the module's power supply inputs (6a, 6b, and 6c) and the transformer to a 110~230-VAC outlet.

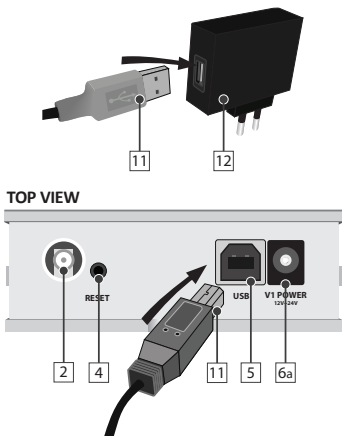
TOP VIEW



BOTTOM VIEW



Connect one end of the USB cable (11) to the 110~230VAC/5VDC transformer (12) and the other end of the USB cable (11) to the type-B USB outlet (5) on the module.



For last, connect the 110~230VAC/5VDC transformer (12) to a 110~230VAC outlet.

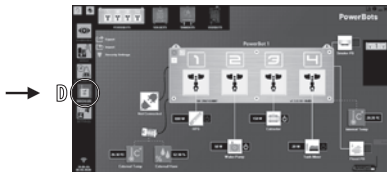
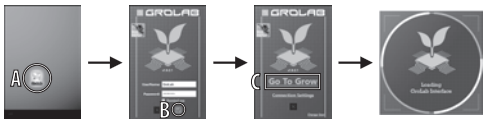
With these connections made your module is powered and the LED indicator (3) should start blinking green.

6. COMMUNICATIONS

Connection to GroNode

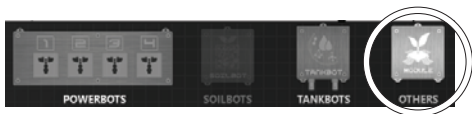
Make sure the GroNode is correctly installed and accessible through the GroLab Software. If not, follow the instructions provided inside the GroNode's manual.

After completing all the CtrlBot installation steps, open the GroLab Software, establish a connection with the GroNode and then, access **Modules** through the main menu, as shown in the picture below.



Usually, 2 or 3 minutes are enough for GroNode to detect a newly installed module. The module status signal LED (3) will keep blinking green until GroNode detects the module and starts communicating with it, at this point the status signal LED (3) stops blinking and keeps steady in green.

Once the module is detected by GroNode, it will automatically appear in the **Modules** menu under the respective module type section.



Since CtrlBot is currently identified as a custom module by the GroLab Software, it appears under the **Others** section.

NOTE: You can check the list of modules of the same type on the right side of this menu. One GroNode supports a maximum of 4 modules of each type.

EN Problems or losses in ES communication

FR The GroNode was designed to communicate
T with the other modules through radio
PT frequency signals. The **range of action** is **25 meters (82 feet) indoors** and **100 meters (328 feet) outdoors**, depending on space conditions.

Access the **Modules** menu on the GroLab Software and check if your modules are available. If they aren't available or they are experiencing communication losses, you may have exceeded the distance between your modules and GroNode.


Inside the **Modules** menu, you can find a wireless signal icon that indicates if the selected module is connected to the GroNode.



If the problem persists, perform a test run by placing the module next to the GroNode and check the module's communication status through the software. If communication has been successfully re-established, repeat this operation at different distances until you detect the maximum communication distance.

If the module is not found at all, try to cycle the GroNode through all the available communication channels until you find your modules, allowing 3 minutes between channel changes.

To change the communication channel, open the GroLab Software, and connect to the GroNode. Inside the **Main Menu (Configurations)**, go to **Settings (GroNode) → General Settings Tab**. Click the button in the lower right corner to enable editing and change the communication channel to the desired channel. To apply the changes, click the green button in the lower right corner.

 **NOTICE:** Some load-bearing walls and electronic devices may interfere with the signal.

If after following the previous steps your modules still don't show up on the GroLab Software, please contact our technical support.



www.opengrow.pt [@support@opengrow.pt](mailto:support@opengrow.pt)

7. UPDATES

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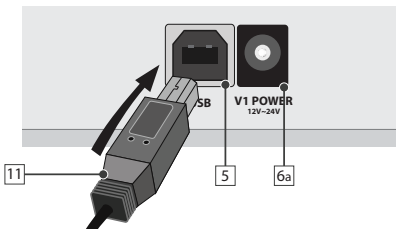
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Firmware Updates

Keep in mind that some software updates may require that you update the firmware of your GroLab modules.

All updates provide crucial improvements that ensure optimal system performance.

Connect the type-B USB cable (11) to your device's USB outlet (5) and follow the instructions indicated in the GroLab Software.



NOTE: It is recommended to disconnect the three power supplies (9) before applying a firmware update.

8. TROUBLESHOOT

Symptom	Possible Cause	Possible Solution
The unit does not appear to be functioning.	1) No power is available on the input.	Make sure the USB adaptor is properly connected.
The unit seems to have power but the peripherals do not actuate.	1) The cables used to connect the peripherals to the 4-pin quick connectors might be loose or damaged. 2) The 4-pin quick connectors might be loose or damaged.	Replace the cables and/or the 4-pin quick connectors. Ensure that the power supply for the respective output set is correctly working.

If the information in the table, presented on the previous page, does not solve the problem, please contact Open Grow technical support or return the unit to an Open Grow service center.

- Ensure that you have followed the operating instructions carefully.
- There are no user-serviceable parts internally.
- Disassembling the unit, opening the lid, or tampering with the unit is unsafe for unqualified users and will render the warranty invalid.

 www.opengrow.pt  support@opengrow.pt

9. MAINTENANCE

As the unit is essentially maintenance-free, maintenance is limited to **ensuring periodically that it is free from dust or other residues.**

The unit does not require any calibration. However, when using a peripheral connected to the unit that requires calibration (either physically or via GroLab software), it is recommended to be recalibrated every month. In addition, whenever cable replacement or any extension of cables is performed on peripherals that require maintenance, they must be recalibrated.

The service life of the CtrlBot should be in excess of five years if operated within specification.

It is recommended to **perform periodic inspections (at least once per year) to ensure that the entire installation is in accordance with local and international safety regulations.**

10. WARRANTY

General terms

The warranty set forth below is given by Open Grow, Lda. (from now on, will be referred to as OPEN GROW). This warranty is only effective upon presentation of the proof of purchase.

EXCEPT AS EXPRESSLY SET FORTH IN THIS WARRANTY, OPEN GROW MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. OPEN GROW EXPRESSLY DISCLAIMS ALL WARRANTIES NOT STATED IN THIS WARRANTY. ANY IMPLIED WARRANTIES THAT MAY BE IMPOSED BY LAW ARE LIMITED IN DURATION TO THE WARRANTY PERIOD.

TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY ARE YOUR SOLE AND EXCLUSIVE REMEDIES AGAINST OPEN GROW. THEY DO NOT, HOWEVER, AFFECT OR RESTRICT THE RIGHTS YOU HAVE AGAINST THE BUSINESS YOU BOUGHT A OPEN GROW PRODUCT FROM. IN NO EVENT SHALL OPEN GROW BE LIABLE FOR LOSS OF DATA OR FOR INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. HOWEVER, NOTHING IN THIS AGREEMENT LIMITS OPEN GROW'S LIABILITY TO YOU (I) IN THE EVENT OF DEATH OR PERSONAL INJURY TO THE EXTENT RESULTING FROM OPEN GROW'S NEGLIGENCE, OR (II) TO THE EXTENT RESULTING FROM ANY FRAUDULENT MISREPRESENTATION ON THE PART OF OPEN GROW, OR (III) TO THE EXTENT ARISING UNDER RELATED CONSUMER PROTECTION REGULATIONS. SOME COUNTRIES DO NOT ALLOW: (1) A DISCLAIMER OF IMPLIED WARRANTIES; (2) A LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION; OR (3) LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS. IN SUCH COUNTRIES, SOME EXCLUSIONS OR LIMITATIONS OF THIS LIMITED WARRANTY MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS THAT MAY VARY FROM COUNTRY TO COUNTRY. YOU ARE ADVISED TO CONSULT APPLICABLE COUNTRY LAWS FOR A FULL DETERMINATION OF YOUR RIGHTS.

This warranty applies to any OPEN GROW branded hardware product sold by OPEN GROW, its subsidiaries, affiliates, authorized resellers, or distributors (from now on, will be referred to as PARTNERS), with this warranty.

Limitation of warranty

OPEN GROW warrants that the product under normal use is free from material defects in materials and workmanship during the warranty period if the product is used and serviced in accordance with the user manual and other documentation provided to the purchaser at the time of purchase (or as amended from time to time). OPEN GROW does not warrant that the product will operate uninterrupted or error-free or that all deficiencies, errors, defects or non-conformities will be corrected.

This warranty shall not apply to, and OPEN GROW shall not be responsible for, problems or damages resulting from: (a) unauthorized alterations or attachments; (b) negligence, abuse or misuse, including failure to operate the product in accordance with specifications, instruction, or interface requirements; (c) improper handling, use or storage; (d) failure of goods or services not obtained from OPEN GROW or not subject to a then-effective OPEN GROW warranty or maintenance agreement; or (e) fire, water, acts of God or other catastrophic events. This warranty shall also not apply if any OPEN GROW serial number on the product has been removed or defaced in any way.

Product warranty period

The product warranty period starts on the date of purchase from OPEN GROW or PARTNERS. Your dated sales or delivery receipt, showing the date of purchase of the product, is your proof of the purchase date.

You may be required to provide proof of purchase as a condition of receiving warranty service. You are entitled to warranty service according to the terms and conditions of this document if a repair to your OPEN GROW product is required within the product warranty period.

This product warranty extends only to the original end-user purchaser of this OPEN GROW product and is not transferable to anyone who obtains ownership of the product from the original end-user purchaser.

All OPEN GROW products have a 2-year guarantee except for consumables (calibration solutions, sensors and/or actuators of any type) and under normal use.

Performance of the warranty

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If any defect occurs, OPEN GROW's sole obligation shall be to repair or replace the product free of charge provided it is returned to OPEN GROW after-sales department during the warranty period. Such repair or replacement will only be rendered by OPEN GROW at an authorized OPEN GROW repair station. All components or products that are replaced under this warranty become the property of OPEN GROW. The replacement takes on the REMAINING warranty period of the product. The replacement need not be new or of an identical make, model, or part; OPEN GROW may in its discretion make the replacement with any reconditioned

Warrantor

Open Grow, Lda.,
Parque Industrial de Coimbrões,
Edifício Expobeiras,
3500-618, Viseu,
Portugal

(+351) 232 458 475

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Do not ship directly to OPEN GROW without first consulting with us to verify the procedure that should be followed.

Contact our technical services at **support@opengrow.pt**.

DISCLAIMER:

Application of the guarantee is excluded should the breakdown of the defective part or parts be a result of the product's inadequate and/or negligent use. Understood as inadequate and/or negligent use is any use other than the one for which the product is meant and/or that is recommended in the instructions manual, not executing the maintenance operations recommended in the instructions manual, carrying out operations that are different from those mentioned and that compromise the quality of the product, modifications that are not performed by authorized repairers and/or with non-original or non-approved parts.

11. COMPLIANCE



This symbol on the product or packaging means that according to local laws and regulations this product should not be disposed of in the household waste but sent for recycling. Please take it to a collection point designated by your local authorities once it has reached the end of its life, some will accept products for free. By recycling the product and its packaging in this manner you help to conserve the environment and protect human health.



This symbol on the product or packaging means that this product is compliant with RoHS Regulations of the European Parliament and Council Directive on the Restrictions of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (2011/65/EU).



This symbol on the product or packaging means that this product is in compliance with the following directives and regulations:

- (2014/53/EU) Radio equipment directive.
- (2011/65/EU) RoHS directive.
- (2014/35/EU) Low voltage directive.
- (2014/30/EU) EMC.



	Frequency Band(s)	Max. Output Power (EIRP)
2.4 G	2.4 - 2.4835 GHz	100 mW



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NOTES

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