

WIRELESS REMOTE CONTROL  
DOCKING SYSTEM

# DOCKMATE<sup>®</sup> RED

USER MANUAL



dockmate<sup>®</sup> 



Congratulations on your purchase of a Dockmate® RED TWIN or Dockmate® RED SINGLE system. Please read the following instructions carefully before getting started.

Dockmate is a wireless remote-control system that enables you to manoeuvre your ship from any place aboard. With a Dockmate® RED TWIN or Dockmate® RED SINGLE, you can control the engine(s), horn, 1 anchor/windlass, a bow- and stern thruster with your fingertips.



**IMPORTANT: Read the precautions before first use!**

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# 1. WHAT'S IN THE BOX?

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- This user manual
- Installation manual
- The Dockmate® RED Receiver
- The Dockmate® RED TWIN or Dockmate® RED SINGLE remote
- Dockmate wireless charging pad
- Lanyard
- All necessary wiring cut to length
- Antenna

## 2. PRECAUTIONS

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To avoid damage to your Dockmate® RED and hurting yourself or others, you should read the following safety precautions before using the device. Keep these safety instructions in an area where all users can read them.

When in doubt, contact PPA-Electronics regarding the use or operation of the unit.

PPA-Electronics is not responsible for injuries or damage caused as a result of improper use or installation by a non-qualified technician.

- 2.1. Before taking command with Dockmate make sure that all levers controlling the engines and thrusters are in neutral position.
- 2.2. Whether using the Dockmate wireless charging pad or another Qi certified charger, **do not put the Dockmate® RED remote that is switched on onto the wireless charger** . Always **switch it off first, before charging**. It is highly recommended to use a wireless charger supplied by Dockmate.

- 2.3. Do not store or place the remote for prolonged periods of time in direct sunlight (i.e. on the dashboard); temperatures can easily rise to 65°C+ or 150°F+.  
The Dockmate devices must be kept at an acceptable temperature.

The operating temperature range for the remote is 0°C to +43°C or +32°F to +110°F

The operation temperature range for the Receiver is -10°C to +60°C or +14°F to +140°F

- 2.4. Do not disassemble the Dockmate® RED remote or Receiver.  
Touching the internal parts may lead to injuries. Repairs may only be performed by trained technicians.
- 2.5. Do not use near flammable gases or liquids.  
This may cause an explosion or fire.
- 2.6. Keep out of reach of children.  
The devices contain small parts which can be swallowed by children. Beware for suffocation by plastic packaging.
- 2.7. The Dockmate may only be used by persons who have the necessary skills to manoeuvre a yacht.
- 2.8. Be careful with the lanyard.  
Keep it away from small children (choking hazard).



- 2.9. Do not use the Dockmate when the remote or Receiver have been immersed in water. The units may be damaged beyond repair. Test both devices with the boat in a safe environment before use.  
Contact your Dockmate dealer when any abnormality is detected.
- 2.10. Make sure you can operate the Dockmate like an expert before actually using it in a crowded harbour.
- 2.11. In very exceptional circumstances, the communication between the remote and Receiver can be disturbed by radio frequency remotes in the immediate neighborhood.
- 2.12. Never use the Dockmate if you are not on the ship. Remember that the use of the Dockmate from ashore or the jetty is a criminal offense in several countries.
- 2.13. Batteries should be charged as soon as the **stat** LED on the remote lights up yellow.
- 2.14. Please note that when the system is in operation each involuntary push on the buttons of the remote has an action as a result.
- 2.15. It's a good habit to briefly test your Dockmate when you first turn it on, before untying your ropes, lifting the anchor, or heading into the marina or port. Just like it's a good habit to test your boat's engine and thruster controls (and other systems) before heading out on the water.

- 2.16. If you detect or experience any abnormal behaviour of your Dockmate system, do not use it. First verify if all the controls on your fixed station(s) work correctly and then contact your Dockmate dealer for support.
- 2.17. The remote, Receiver and any other Dockmate device may only be opened by an authorised technician. Opening of a Dockmate device by an unauthorised person will void the warranty.

## 3. INSTALLATION

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The installation must be done by a qualified technician.

Our system consists of two major components: a remote and a Receiver. These have already been paired so they recognise each other. Detailed installation instructions can be found in the installation manuals supplied with the Dockmate.

### 3.1 Installation of the Receiver

Dimensions Dockmate® RED Receiver: 22 x 22 x 5,4 cm or 8.66 x 8.66 x 2.12"

Install the Receiver in a dry, not too warm area.

Install the Receiver free of vibrations.

Place the Receiver behind or close to the dashboard, and as close as possible to the controls of the required functions (engine/motor controls, horn, anchor winch or windlass, bow- and stern thrusters).

At the same time, you need to consider placement of the Receiver so the antenna is not too close to cables and devices, which may reduce its range.

Please note that a technician may need access to the Receiver, so check if it is easily accessible by screwdriver.



### 3.2 Installation of the wireless charging pad

The Dockmate wireless charging pad is a Qi certified charger. It comes with a micro-USB to USB-A cable. The cable must be plugged into the charging pad's micro-USB port on one side and a USB-A power adapter on the other side.

Input power: DC 5V=2A 9V=2A

Output power: 10W (Max)

Charging Efficiency:  $\geq 72\%$

Charging Distance:  $\leq 8\text{mm}$

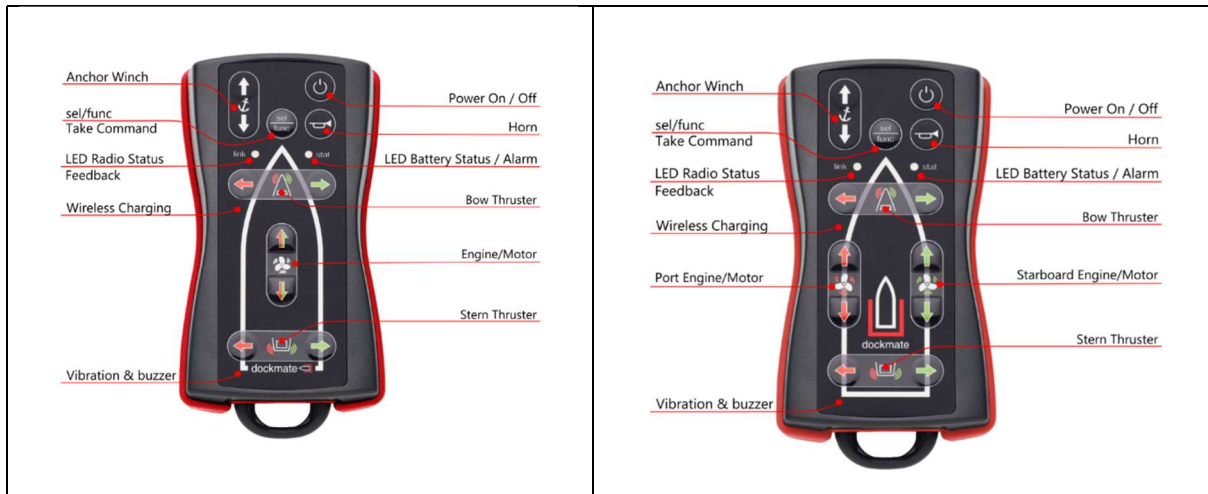
Certifications: Qi, CE, FCC, ROHS

The Dockmate wireless charging pad is not waterproof.

The Dockmate wireless charging pad may also be used to charge other Qi enabled devices like smartphones.



## 4. USING DOCKMATE RED TWIN OR DOCKMATE RED SINGLE



We recommend that you always wear the lanyard around your neck while using the Dockmate RED TWIN or Dockmate RED SINGLE.

The Dockmate RED remote has the following features:

- **On/Off button**

Press and hold the on/off button for 2s to turn the remote on.



Press the on/off button 3 times quickly or hold the on/off button for 3s to shut the remote off.

NOTE: When this button is pressed (even shortly) while another button is pressed, all inputs are inhibited for safety, so Dockmate's outputs go to neutral, until all buttons are released again.

**In case of emergency, press the On/Off button to force Dockmate's outputs to neutral.**

- **Horn button**

Pressing this button will sound the horn.

- **"sel" button**

The "sel" button's function is Take Command.

- **Anchor winch buttons**

By pressing the upper button, you lower the anchor.

By pressing the lower button, you raise the anchor.

This behaviour can be switched in the Dockmate Settings, during the installation or sea trial.

These buttons only operate an anchor winch if installed on the boat and your Dockmate Receiver is configured for it. Otherwise, this has no effect.

- **link: Radio Status LED**

Shows the status of the connection with the Receiver

It also shows warnings and errors if there are any.

- **stat: Battery Status LED**

Shows the battery status of the remote on start-up and when the battery charge gets low.

While charging your TWIN or SINGLE, this LED will blink to indicate it is charging and how full the battery is.

- **Buzzer & Vibrator**

Indicates no communication, low battery, warning, or error.



- **Bow thruster buttons**

By pressing the left button (red = port), the bow thruster will push the bow to port.

By pressing the right button (green = starboard), the bow thruster will push the bow to starboard.

These buttons only operate a bow thruster if installed on the boat and your Dockmate Receiver is configured for it. Otherwise, this has no effect.

- **Engine button(s)**

By pressing the upper left button (red = port), the port engine is engaged in idle forward. By pressing the lower left button (red = port), the port engine is engaged in idle reverse. By pressing the upper right button (green = starboard), the starboard engine is engaged in idle forward. By pressing the lower right button (green = starboard), the starboard engine is engaged in idle reverse.

On the SINGLE remote there is only one set of engine buttons for a single engine or moto

- **Stern thruster buttons**

By pressing the left button (red = port), the stern thruster will push the stern to port.

By pressing the right button (green = starboard), the stern thruster will push the stern to starboard.







These buttons only operate a stern thruster if installed on the boat and your Dockmate Receiver is configured for it. Otherwise, this has no effect

## 5. CHARGING THE BATTERIES

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The Dockmate **RED** TWIN & Dockmate **RED** SINGLE remotes are fitted with a Li-Ion battery that must be charged occasionally.




When the Dockmate **RED** TWIN or Dockmate **RED** SINGLE remote is turned on, both LEDs will go white. Then the Status LED will show one of the following:

	Battery fully charged	90-100%
	Battery OK	26-90%
	Battery Low	6-25% (charging highly recommended)
	Battery Warning	1-5% (may fail at any moment)
	Battery Failed	0%
	Battery Failed	0%

It is not possible to turn on the remote when the battery voltage drops below 3.40V.

It is highly recommended to charge the remote when the LED shows yellow on startup.

The Dockmate RED TWIN/SINGLE remote will start to charge when switched off and placed on the Dockmate wireless charging pad. The LEDs on the Dockmate charging pad will light up constant green , indicating the charging process.

Also, the Status LED on the remote will start to flash in different colours depending on the battery percentage (6-25%: , 26-90%: , 90-100%: )

When the battery is fully charged the Dockmate remote will shut down automatically.


*When the battery is fully charged, there will be no reaction from the remote when placed on the charger. After some use, when the charge drops, it will be possible to charge the remote again.*

**When the Dockmate RED TWIN or SINGLE is being charged, it is not possible to switch it on using the on/off button. It must be taken off the charger first.**


When taking the remote off the charger, while it is still charging, the Dockmate RED remote will stay in "charging mode" for about 15s. Only when the remote stops blinking, will it be possible to turn the remote on.

## 6. TURNING THE REMOTE ON AND OFF





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Press and hold the  key for 2 seconds to turn on the remote.

If you hold the  key for 3 seconds or more on startup, the remote will immediately shut off again.

The remote will be automatically switched off after 30 minutes of non-use. Alternatively, the remote can be switched off by pressing the  button 3 times quickly or holding it down for 3 seconds.

After the remote is switched on, both LEDs will go white. Then the **link** LED will go dark, and the **stat** LED will show one of following:

	Battery fully charged	90-100%
	Battery OK	26-90%
	Battery Low	6-25% (charging highly recommended)
	Battery Warning	1-5% (may fail at any moment)


## 7. ERROR CODES

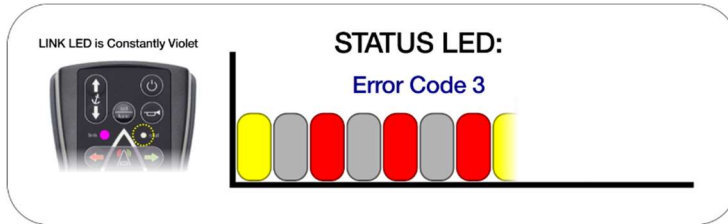
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*The software of the remote has built in safety features to check upon start-up whether one of the buttons is pressed. While the stat LED is on, and the link LED is off (about 2s), the user cannot press any button. Otherwise, the software will recognise this as a fault situation (signaling a STATIC ERROR CODE) and will switch off the unit. When this happens, the remote needs to be restarted.*

*As soon as the status LED is off and the link LED is on, the user may start using the Dockmate remote.*

*If after switching on, the link LED is constantly violet , that means that the remote encountered a problem and it displays a STATIC ERROR CODE. The status LED will simultaneously display the error code: the cycle starts with one yellow blink, then followed by one or more RED blinks (and beeps); the cycle ends with a 0.5s break. After 10 cycles, the remote switches itself off.*



**Possible STATIC ERROR CODES ARE:**

Code #3 – One or more buttons pressed during start-up

*No button, except for On/Off, may be pressed when switching on the remote.*

Code #7 – Serial Number in the remote not set

*The remote doesn't have a serial number set*

Code #8 – Trying to use a demo remote as a normal unit






*The remote has the DEMO FLAG set, but the serial number is different than*

*1,2,3 or 4.*

## 8. LED BEHAVIOUR DURING OPERATION

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After start-up the **stat** LED will go dark, and the **link** LED will show the communication status:

	Communication OK, actively transmitting data	When pressing a button
	Communication OK, standby mode	When not pressing any button for more than 5s
	Communication lost	When communication could not be established or was interrupted. The remote also beeps.
 	Purple / Green Blinking Feedback from the Receiver: error	Receiver status error. For example: Receiver is supplied by too low voltage

When turning on the Dockmate RED TWIN/SINGLE, it will automatically try to take command from the boat's controls. If at some point Dockmate relinquishes command, because you took command on one of the boat's fixed stations for example, then you can take back command on your Dockmate remote by shortly pressing the SEL button.

To take command, depending on your boat's control systems, all or a subset of the following conditions must be met:

- The Receiver and remote must be powered on.
  - Dockmate must support take command on your engine. Ask your Dockmate dealer if take command is supported on your systems.
  - Control heads on all stations must be in neutral.
  - Engine(s) is/are running

If Take Command is not supported on your controls, then you must manually take command on the station, where Dockmate is connected, before you can use your Dockmate remote. You may also need to turn on the thruster control panel, before using Dockmate.

If the error persists, the Receiver needs to be diagnosed by a Dockmate dealer or technician with Dockmate's DockControl1 computer software to read out specific fault codes.



## 9. TROUBLESHOOTING

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PROBLEM	POSSIBLE CAUSE	SOLUTION
The Receiver does not work.	<p>The Dockmate remote is switched off.</p> <p>The Dockmate Receiver does not receive D/C Volts.</p>	<p>Switch the remote on (see point 6 in this manual).</p> <p>Check:</p> <ul style="list-style-type: none"> <li>- power on?</li> <li>- fuse blown?</li> </ul>
The remote does not work.	The batteries are empty.	Charge the batteries (see point 5 in this manual).
The LED low battery on the remote is on.	The batteries are empty.	Charge the batteries (see point 5 in this manual).

<p>The remote has fallen in the water.</p>		<p>Rinse with clear water and dry with a soft cloth. Have your Dockmate technician check if your remote is still in good operating condition, and test the remote before use with the boat in a safe environment.</p>
<p>Red STATUS LED, Receiver beeps (100ms / 1s) – Violet / White LED inside the Receiver is blinking</p>	<p>Power supply to the Receiver is too low.</p>	<p>Check the boat's battery voltage and connection. Dockmate requires a minimum of 11,0 V.</p>
<p>Receiver beeps (100ms / 1s) – Yellow LED inside the Receiver is blinking</p>	<p>Internal settings memory corrupted.</p>	<p>Call your Dockmate technician, to setup all necessary settings.</p>

## 10. TECHNICAL SPECIFICATIONS

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- REMOTE

Dimensions:	70 x 150 x 40 mm or 2.75 x 5.91 x 1.57"
Weight:	ca. 150 gr or 5.29 oz
RF Band:	433.05MHz to 434.79MHz (US, Australia and others) 868,00MHz to 870,00MHz (Europe)
Range:	50 metres or 165 feet
Housing:	ABS & rubber - according to IP67 specifications
Battery:	Lasts up to at least 15 10min docking manoeuvres 320+ mAh Li-ion Qi-certified wireless charging
Operating temperature:	0°C to +43°C or +32°F to +110°F

- RECEIVER (DOCKMATE® RED)

Dimensions:	22 x 22 x 5,4 cm or 8.66 x 8.66 x 2.12"
Weight:	ca. 0,95 kg or 2.09 lbs
RF band:	433.05MHz to 434.79MHz (US, Australia and others) 868,00MHz to 870,00Mhz (Europe)
Range:	50 metres or 165 feet
Housing:	ABS - according to IP50 specifications
Power:	12V or 24V
Operating temperature:	-10°C to +60°C or +14°F to +140°F

### Using and charging my TWIN or SINGLE

When using a Dockmate remote, that was charged to 100%, it takes up to 3 hours of constant use (remote actively communicating with the Receiver) to deplete the battery.

This translates to a few very difficult and/or long docking manoeuvres, or at least 15 10min docking manoeuvres.

During our test charging a Dockmate remote from empty to completely full takes up to 1h 30min. In practice we have observed a typical charging time for a Dockmate remote of 20 to 40 min. For boaters using our latest Dockmate Cradle, their Dockmate remote is virtually always charged up and ready for use

- **FCC WARNING**

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 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 Dockmate technician for help.

Caution: Any changes or modifications to this device not explicitly approved by the manufacturer could void your authority to operate this equipment.

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 has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

## 11. ENVIRONMENTAL INFORMATION

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The equipment that you have bought requires the extraction and use of natural resources for its production. It may contain substances that are hazardous to health and the environment.

To avoid the dissemination of those substances in our environment, and to diminish the pressure on natural resources, we encourage you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials of your end-of-life equipment in an environmentally sound way.

The crossed-bin symbol marked on your device indicates you should use these systems.



If you need more information on the collection, reuse, and recycling of this product, please contact your local or regional waste administration.

You can also contact us for more information on the environmental performance of our products



## 12. WARRANTY

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Each Dockmate has a 3-year warranty from the date of purchase by the first owner. The warranty covers all defects and failures that are not caused by the customer. The manufacturer will repair or replace your product free of charge on the following conditions:

- This 3-year warranty covers this Dockmate system only and not any devices or systems connected to it or devices that are mounted in or on the Dockmate Cradle. No warranty is given for users' other devices or systems, and users expose their devices and systems to hazards, known or unknown, at their own risk.
- The warranty is not valid in case of improper installation or improper use of the device. Products must have been used strictly in accordance with operating instructions supplied. Dockmate will have no liability for defects caused by accident, misuse, alteration, or neglect.
- The electrical components must remain complete. They may not be disassembled, not tampered with, nor be modified in any way. The use of non-original electronic accessories can damage the device. This is not covered by the warranty.
- Damage to the Receiver caused by water or other liquids is not covered by the warranty.

- Returns of defective equipment under this warranty:
  - Before returning, please contact the vendor of the device by phone or email.
  - Always include a brief description of the problem that occurs.
  - Do not forget to include your full contact and delivery details: name, telephone, email, complete address.
  - To avoid damage during shipment, the unit must be adequately packaged.  
The manufacturer will accept no liability for units lost or damaged in transit from the customer.
  - Shipment costs are always for the buyer.
- The liability of the manufacturer is limited to replacing or repairing the unit.  
The manufacturer decides whether the device will be repaired or replaced.
- The buyer agrees that the liability of the manufacturer is limited to the purchase price of the equipment, regardless of the circumstances. The manufacturer is not responsible for damages resulting from the use of the device. The manufacturer can never be held responsible for any accidents and / or damage caused to persons and / or property.
- The repair or replacement of the equipment during the warranty period, does not extend the original warranty period.
- Without warning the manufacturer may at any time make changes to the specifications of the device, both to the hardware and the software.
- The manufacturer has taken all the necessary steps to ensure that the information in this guide is accurate and complete.

## 13. MAINTENANCE

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The installation is 100 % maintenance free, except for battery charging.

Occasionally the remote and Receiver can be cleaned with a damp cloth.

The Receiver should not remain powered on constantly. It's good to turn it off and on again every couple of days.

## 14. DOCKMATE IS COMPLIANT WITH THE FOLLOWING STANDARDS

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- FOR DOCKMATE USING THE 433MHZ BAND
  - FCC: Part 15.231
  - EMC:
    - EN 55032:2015+A1:2016
    - EN 55035: 2017
  - RED:
    - ETSI EN 301 489-1 V2.2.3 (2019-11)
    - ETSI EN 301 489-3 V2.1.1 (2019-03)
    - EN 55032: 2015
    - EN 55035: 2017
    - ETSI EN 300 220-1 V3.1.1 (2017-02)
- FOR DOCKMATE USING THE 868MHZ BAND
  - EMC:
    - EN 55032: 2015+A11: 2020
    - EN 55035: 2017+A11: 2020
  - RED:
    - ETSI EN 301 489-1 V2.2.3 (2019-11)
    - ETSI EN 301 489-3 V2.1.1 (2019-03)
    - EN 55032: 2015
    - EN 55035: 2017
    - ETSI EN 300 220-1 V3.1.1 (2017-02)

## 15. DECLARATION OF CONFORMITY

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Manufacturer: PPA Electronics  
Address: Leuvensesteenweg 177  
BE-3191 Boortmeerbeek  
BELGIUM  
VAT Number: 0891.773.260

Declare under own responsibility the conformity of the product:

Trademark: Dockmate  
Description: Dockmate, remote docking system for motor yachts

With the requirements of :

- Low Voltage (LVD) 2014/35/EU
- EMC Directive 2014/30/EU
- R&TTE Directive 2014/53/EU

Following standards:

EN62368-1:2014+A11:2017 +A1:2010+A2:2013+A12:2011	Safety of information technology equipment, including electrical business equipment.
EN 60945:2012	Maritime navigation and radio communication equipment and systems - General requirements - Methods of testing and required test results
ETSI EN300 220-1 V3.1.1:2017-02; ETSI EN300 220-2 V3.2.1:2018-06	ETSI EN300 220-1 V3.1.1:2017-02 Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 1: Technical characteristics and test methods. ETSI EN300 220-2 V3.2.1:2018-06: Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive.
EN IEC 61000-3-2:2019; EN 61000-3-3:2013; EN301 489-1 V1.9.2; EN301 489-9 V1.4.1; EN55022:2010; EN55024:2010.	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1000 MHz frequency range with power levels ranging up to 500 mW; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive.



Mechelen, 5.10.2015

Dirk, Illegems, Owner



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PPA-Electronics bv, Leuvensesteenweg 177, 3191 Boortmeerbeek, BELGIUM

**more info & contact**

[www.dockmate.eu](http://www.dockmate.eu)

[info@dockmate.eu](mailto:info@dockmate.eu)

The product as illustrated and the technical specifications are subject to  
modification without prior notice.

