



Parklio Gateway

User manual



Dear Customers,

Thank you for the confidence you have shown us by purchasing our Parklio Gateway. We hope that all your expectations of this product will be fulfilled. Parklio Gateway is manufactured using the latest technologies and has undergone rigorous quality control procedures.

The User Guide will help you use your product quickly and safely.

Information contained in this manual is subject to change without notice.

Trademarks

Parklio™ is a trademark of Amplifico d.o.o.

Other brand and product names are registered trademarks or trademarks of their respective holders.

Statement of Conditions

In the interest of improving internal design, operational function, and/or reliability, Parklio™ reserves the right to make changes to the products described in this document without notice. Parklio™ does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein.

Thank you for the confidence you have shown us by purchasing our gateway.

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1. Package Contents

The product package should contain the following items:

	1 x Parklio™ Gateway
	1 x Waterproof power connector
	1 x Ethernet cable waterproof connector
	1 x Pole mount bracket
	1 x Pole mount hose clamp
	4 x M4 screws
	QR Code stickers (UUID, MAC address and password)

If any of the parts are incorrect, missing, or damaged, please contact Parklio support. Keep the original packaging, in case you need to return the product.

NOTE

- For the installation a T8 (torx), slotted and cross-slot screwdriver is required
- An Electric Drill (if mounting to a wall) is required
- RJ45 Crimping Tool
- Parklio™ does not provide a RJ45 connector for the Ethernet port

2. Safety warnings

This section contains safety instructions that will help to protect you from risk of injury or property damage. Failure to follow these instructions will invalidate all warranties.

- Do not use the product, if you have not read and understood the operating instructions before.
- Before first use, make sure that all the parts listed in these instructions are inside of the original packaging.
- Only plugs, batteries, chargers, and other spare parts, supplied by the manufacturer of the product should be used. Use of non-manufacturer provided parts may affect the loss of warranty.
- Ignoring usage instructions, improper installation and use of the product may result in damage to the product or injuries to the user. Instructions should always be at hand.
- Never expose the inner workings to water.
- The device and external supply must be disconnected from power supply during installation, maintenance, cleaning and repairs.
- Leave the product repairs to a specialist. Improper repairs may lead to an accident or a malfunction in the unit.
- The warranty does not cover consumable parts of the device, color fading and chipping, increased noise as a result of aging of the device and other aesthetic effects that do not affect its functionality or safety.
- Strictly follow the instructions for proper installation and connection to the electrical network.
- The installer must provide a device (e.g. magnetothermic switch) ensuring the omnipolar sectioning of the equipment from the power supply. The standards require a separation of the contacts of at least 3 mm in each pole (EN 60335-1).
- Installation requires mechanical and electrical skills, therefore it shall be carried out by qualified personnel only, who can issue the Compliance Certificate concerning the whole installation.
- The upstream electric system shall comply with the laws and rules in force.
- Do not install the product in explosive environments and atmospheres, the presence of inflammable gases or fumes is a serious safety hazard.



WARNING

Operation of this equipment in the residential environment could cause radio interference!

3. Features

Placed in the middle of the Parklio™ universe, the Parklio™ Gateway enables remote control of Parklio™ products. It serves as an intermediary between Parklio™ products and the end-user. Besides coordinating and managing all the data communication between the products, the Parklio™ Gateway provides real-time parking occupancy information.

It is ideal for the car parks with a larger number of parking spaces and constant flow of users or anybody who wants to have remote control of their Parklio products. There is no need for your clients to directly control the products, the lot operator will be able to do it remotely regardless of the distance.

Features:

- Real-time information
- Easy and convenient to install
- Controls up to 20 products
- Control diameter of up to 50 m

4. Gateway overview



Status and connector panel

1	Reset Button	Hold to reset the gateway. Short press to enter 'Connection' mode. On - The LED ring indicates there is power supply to the gateway. Off - The gateway is powered off. Blinking - The gateway is upgrading or the Reset button was pressed.
2	 Power	See gateway status table below for additional information.
3	 Ethernet	
4	 Bluetooth	
5	 4G connection	
6	Ethernet port	LAN port for Internet connectivity
7	AC port	Power supply connector

Status LED and connector description

				Description
OFF	OFF	OFF	OFF	The gateway is booting up.
ON	OFF	OFF	OFF	No network connection.
ON	ON	OFF	X	Network connection established. There is no connection to Parklio servers, check network and firewall settings.
ON	ON	OFF	ON	The gateway started up successfully, GSM connection established, there is no connection to Parklio servers.
ON	OFF	OFF	ON	The gateway started up successfully, GSM connection established, there is no internet connection. Check APN settings or mobile network provider.
ON	BLINK	X	X	Network error / connection lost - please check the network connection.
ON	X	BLINK	X	There is an internal error, check error log.
ON	ON	ON	X	Gateway operational.
BLINK	BLINK	BLINK	BLINK	The gateway is in <i>Connection</i> mode.

ON - The LED is on.

OFF - The LED is off.

X - The LED is either ON or OFF.

BLINK - The LED is flashing.

On the Gateway back side there is a sticker with the gateway UUID (Unique ID / Serial Number) identifying the gateway. Please keep this in mind, the serial number is used when adding the gateway to the user account and when accessing the gateway web user interface.

The sticker also contains the gateway MAC address, located below the QR code.

A copy of this sticker is provided in the gateway packaging. In addition to the UUID and MAC address, these stickers contain the gateway web interface passwords. Please keep these stickers, they may be used later.



5. Technical Specification

Parameter	Value
Input Voltage	85 VAC - 264 VAC 120 VDC - 370 VDC
Frequency	47 Hz - 440 Hz
AC Current (Typ.)	0.35 A / 230 VAC ⁽¹⁾
Inrush current	40 A / 230 VAC
Working temperature range	-20 °C - +60 °C
Working humidity	Up to 90% RH
Operating altitude	1000 m
Ingress rating	IP65
Dimensions	220 mm x 220 mm x 50 mm (H x W x D)
Pole mount diameter	Ø60 mm - Ø125 mm
Weight	750 g
LED	4 status LEDs
LAN	10/100BASE-T with waterproof connector
Wireless Connectivity	BLE LTE with 3G/2G fallback
Software upgrades	Yes, automatic update checking via web
Antenna interface	Internal BT and 4G/3G/2G antennas
Color	Lava and white grey
Max. supported devices	Max. 20 Parklio™ BLE devices can be associated with one gateway

Regulatory standards	EN60950-1:2006 + A1:2010 + A11:2009 + A12:2011 EN 300 328 EN 300 440 EN 301 489 - 1 EN 301 489 - 3 EN 301 489 - 17 EN 55024 EN 55032 EN 61000-6-3 EN 61000-3-2 EN 61000-6-2 EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-8 EN 61000-4-11 EN 61000-3-3
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(1) Parklio™ Gateway power supply input is protected with a 0.5 A 250 VAC fuse. The fuse is not user replaceable.

6. Hardware installation guide

Good placement of the Gateway is very important for correct system functionality. Try to position the gateway as close to the products as possible. Do not place the Gateway in an enclosed area such as a closet, cabinet, attic, office or garage if the Parklio products which are meant to be controlled by Gateway are positioned outside of the mentioned places.

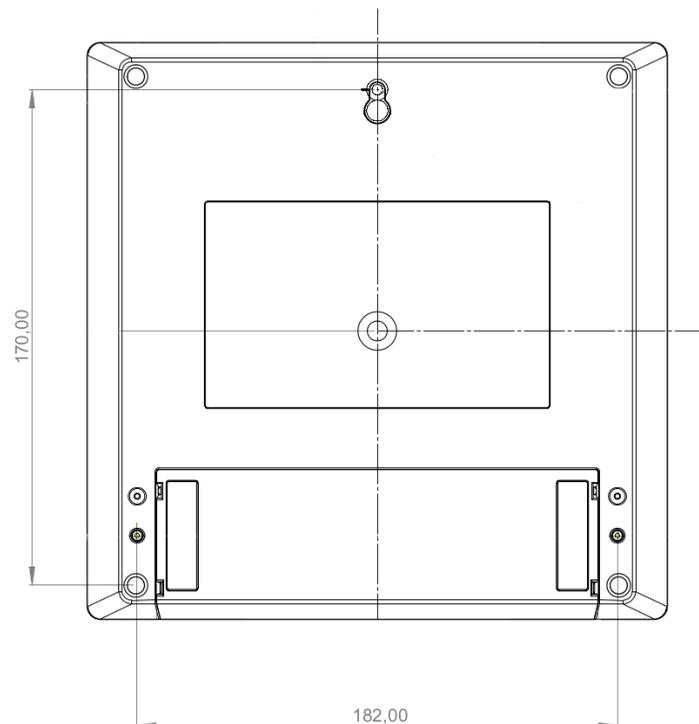
Keep the number of obstacles of the Parklio™ Gateway and other Parklio™ devices to a minimum - each wall or ceiling can reduce your Gateway range 1 to 30 metres (3 to 90 feet). Position your devices so that the connection between Parklio™ Gateway and other Parklio™ devices is handled without problem.

There are two options for mounting the gateway:

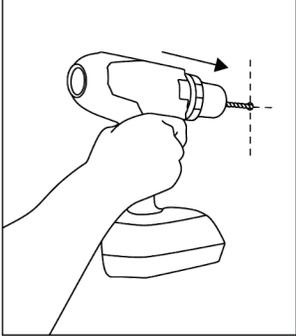
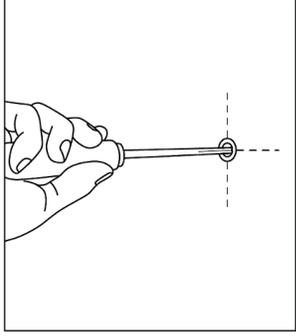
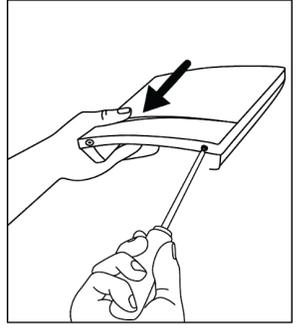
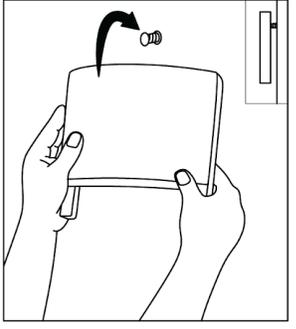
- Wall mounting
- Pole mounting

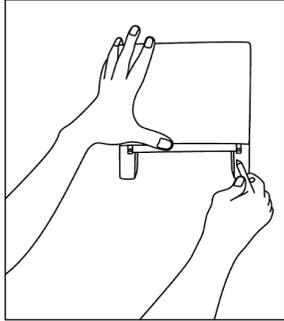
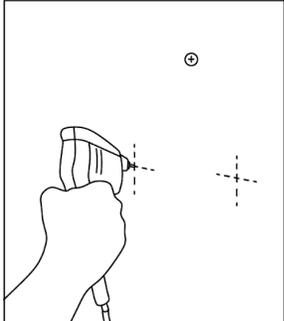
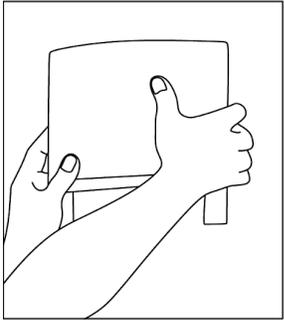
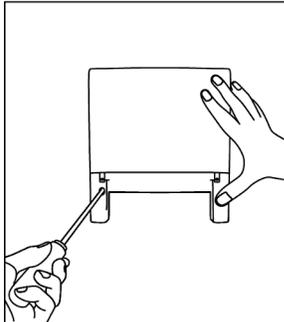
6.1. Wall mount

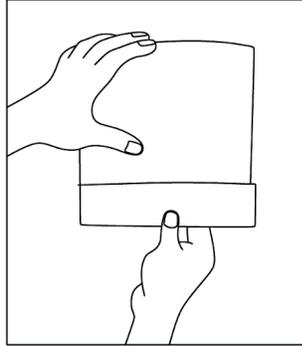
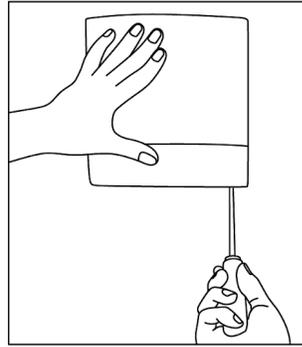
To mount the gateway to a wall please follow the steps below.



Dimensions for the wall mount

	<p style="text-align: center;">Step 1</p> <p>Drill the top centre hole. Use an electric drill with a 6mm masonry bit to drill the hole at the desired spot.</p> <p>NOTE: The drill bit size may vary depending on the type of wall plug used.</p>
	<p style="text-align: center;">Step 2</p> <p>Place the 6mm wall plug into the drilled hole, screw the screw into the plug. Leave the screw head out by 5 mm, because the Gateway needs to be hung over it.</p> <p>NOTE: Make sure to use wall plugs intended for the type of wall or surface you are installing the gateway on.</p>
	<p style="text-align: center;">Step 3</p> <p>Unscrew the bottom cover of the Parklio Gateway and remove it.</p>
	<p style="text-align: center;">Step 4</p> <p>Hang the Parklio™ Gateway onto the mounted bolt.</p>

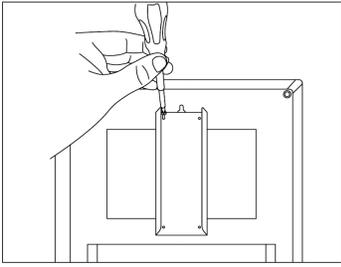
	<p style="text-align: center;">Step 5</p> <p>Mark the two holes initially positioned under the removed cover.</p>
	<p style="text-align: center;">Step 6</p> <p>Remove the Gateway and drill the previously marked holes. Place the wall plugs into the drilled holes.</p>
	<p style="text-align: center;">Step 7</p> <p>Hang the Gateway back onto the first screw.</p>
	<p style="text-align: center;">Step 8</p> <p>Tighten the screw into the wall plugs.</p>

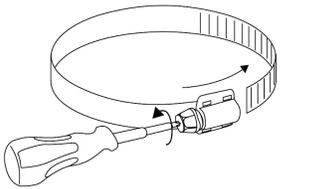
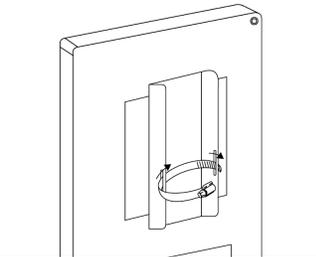
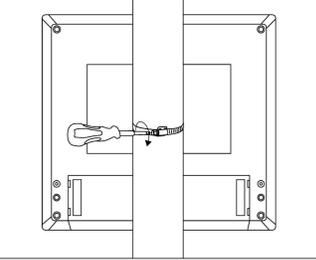
	<p style="text-align: center;">Step 9</p> <p>Place the plastic cover back.</p>
	<p style="text-align: center;">Step 10</p> <p>Screw the bottom of the Parklio Gateway so that the plastic cover is fixed.</p>

NOTE: The wall plugs and screws are not provided.

6.2. Pole mount

The gateway is mounted to a pole via a single hose clamp. The gateway comes with a clamp holder and four M4 screws for installing a hose clamp carrier to the gateway.

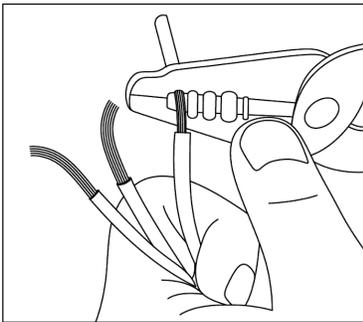
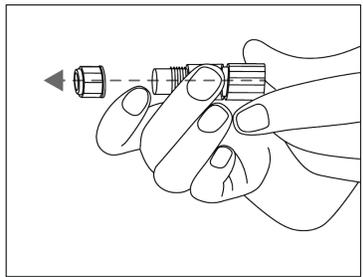
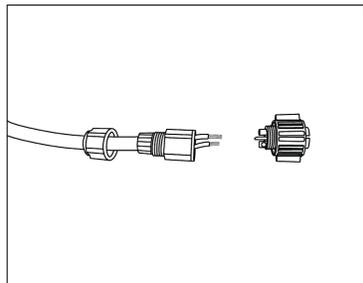
	<p style="text-align: center;">Step 1</p> <p>Position the pole mount holder so that the holes of the pole mount holder coincide with the holes on the back of the Parklio™ Gateway. Use the screwdriver and the provided M4 screws to fix the pole mount holder.</p>
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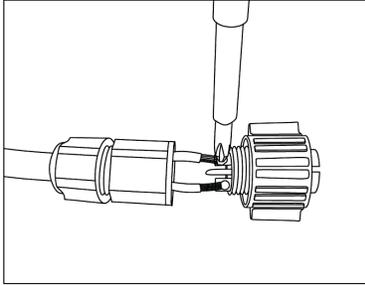
	<p style="text-align: center;">Step 2</p> <p>Unscrew the hose clamp.</p>
	<p style="text-align: center;">Step 3</p> <p>Pull the hose clamp through the holes on the sides of the pole mount holder.</p>
	<p style="text-align: center;">Step 4</p> <p>Wrap the desired spot on the pole with the hose clamp and use the screwdriver to tighten the hose clamp.</p>

6.3. Power connector

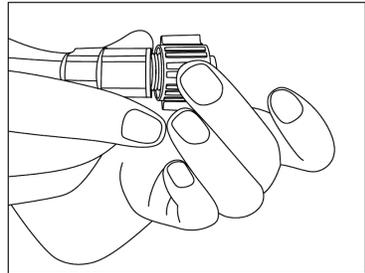
The supply circuit must have an all-pole mains switch (circuit breaker used as a switch is acceptable). The mains power supply must be protected by a differential magneto-thermal switch complying with the law provision in force.

Disconnect the mains supply before proceeding.

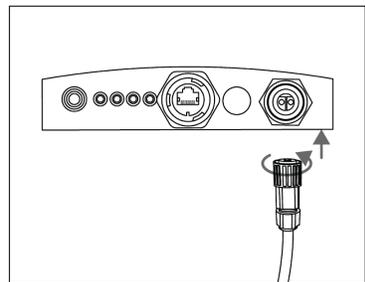
	<p style="text-align: right;">Step 1</p> <p>Strip the cable.</p>
	<p style="text-align: right;">Step 2</p> <p>Unscrew the provided power connector.</p>
	<p style="text-align: right;">Step 3</p> <p>Pull the previously stripped cable through the power connector.</p>

**Step 4**

Insert the stripped wires into the terminals on the head of the power connector and screw them in place.

**Step 5**

Tighten the all three parts of the power connectors.

**Step 6**

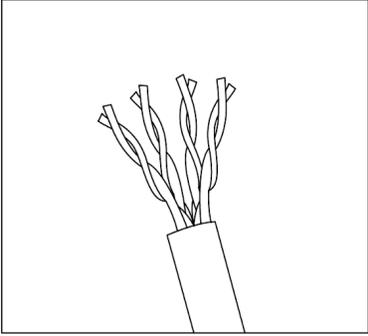
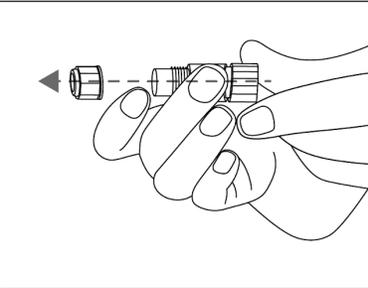
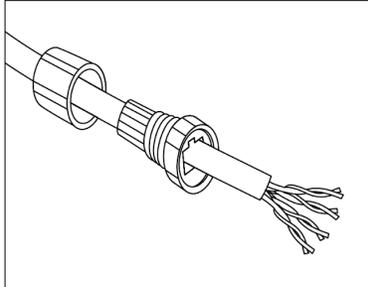
Push the power connector into the power socket on the connection board and turn it clockwise to fix it.

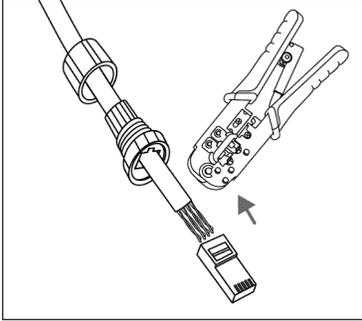
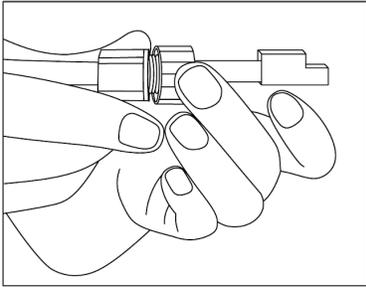
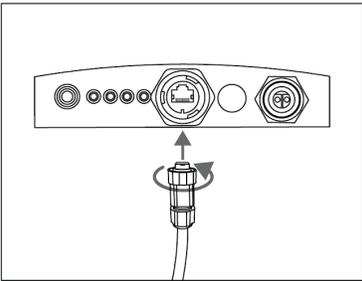
6.4. Ethernet connector

It is recommended to use a cable with a minimum of Cat5e rating for Ethernet.

If the gateway is provided with a SIM card this step is optional.

Parklio can embed a SIM card into the Gateway to enable connection to the Parklio server via 4G/3G/2G mobile network.

	<p style="text-align: center;">Step 1</p> <p>Strip the outer shield of the Ethernet cable.</p>
	<p style="text-align: center;">Step 3</p> <p>Unscrew the provided Ethernet connector.</p>
	<p style="text-align: center;">Step 3</p> <p>Pull the previously stripped ethernet cable through the Ethernet connector.</p>

	<p style="text-align: center;">Step 4</p> <p>Strip the colored wires and organise them in the proper way. Use a crimping tool to crimp the RJ45 connector.</p>
	<p style="text-align: center;">Step 5</p> <p>Tighten the Ethernet connector parts through which the Ethernet cable is routed.</p>
	<p style="text-align: center;">Step 6</p> <p>Push the ethernet connector into the ethernet socket on the connection board and turn it clockwise to fix it.</p>

7. Gateway setup

7.1. Prerequisites

Your Parklio gateways will always come preset with DHCP enabled to configure its IP address, the default gateway, and DNS. Installation site specific network connectivity will need to be configured by customers. This is described in the Network Configuration chapter. SIM enabled cellular network gateways will come pre-configured for cellular connectivity based on your prior coordination with the Parklio Engineering team.

If the network has a firewall enabled you may need to enable the gateway to access the remote hosts it needs. The list of services is provided below:

HOST	PROTOCOL / SERVICE	PORTS
api.parklio.com	TCP / HTTPS	443, 80
www.google.com	TCP / HTTPS	443, 80
connectivitycheck.gstatic.com	TCP / HTTPS	443, 80
time.android.com	UDP / NTP	123

Please be aware that the hosts may resolve to multiple IP addresses which may change at any given time.

7.2. Powering on

The Parklio Gateway will start and boot up automatically as soon as power is present. It may take a few minutes for the initial bootup of the device. When the device is booted the *Power LED* will turn on.

7.3. Hardware reboot

The button on the panel of the Parklio Gateway is dual purpose.

To reboot the Gateway press and hold the button until the button LED turns off or in the PMS choose a Gateway that you wish to reboot by clicking on it and go to System Control and click on reboot. The reboot process may take a few minutes.

7.4. Installing Parklio Connect

In order to add the gateway to your Parklio account please download the Parklio Connect application. If you already have the application installed, skip this step.

The application can be downloaded by scanning the following QR codes:

Android



iOS



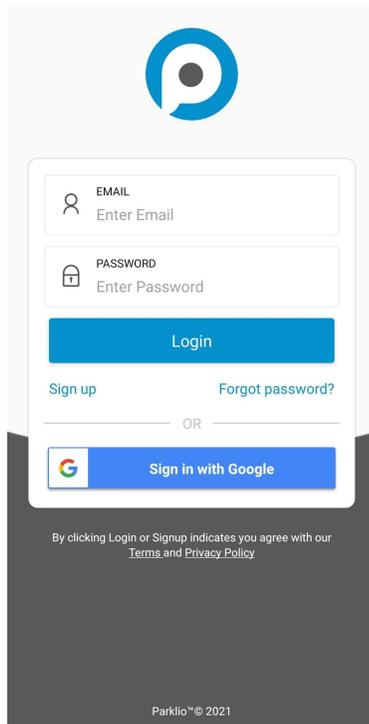
Or on the following links:

Android - <http://bit.ly/2iMkln5>

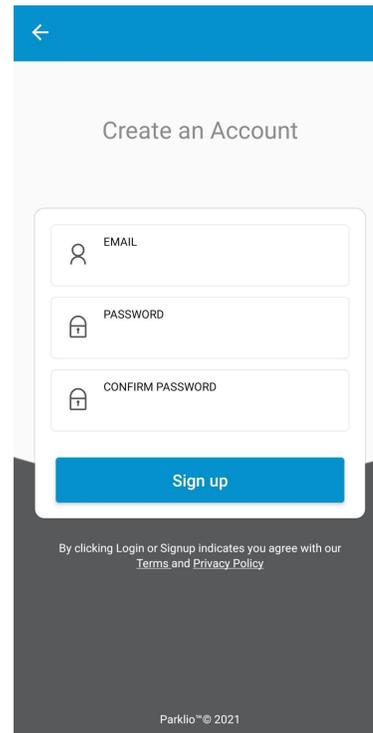
iOS - <https://apple.co/2iaV7aA>

7.5. Login

To use Parklio Connect to setup the Parklio Gateway the user needs to be logged in. An user may login with their provided Parklio PMS account credentials.



The login screen features the Parklio logo at the top. Below it are two input fields: 'EMAIL' with a person icon and 'PASSWORD' with a lock icon. A blue 'Login' button is positioned below the password field. Links for 'Sign up' and 'Forgot password?' are located below the 'Login' button. An 'OR' separator is followed by a 'Sign in with Google' button with the Google logo. At the bottom, there is a disclaimer: 'By clicking Login or Signup indicates you agree with our Terms and Privacy Policy' and the copyright notice 'Parklio™ © 2021'.



The 'Create an Account' screen has a back arrow in the top left. It contains three input fields: 'EMAIL' with a person icon, 'PASSWORD' with a lock icon, and 'CONFIRM PASSWORD' with a lock icon. A blue 'Sign up' button is at the bottom. A disclaimer at the bottom reads: 'By clicking Login or Signup indicates you agree with our Terms and Privacy Policy' and the copyright notice 'Parklio™ © 2021'.

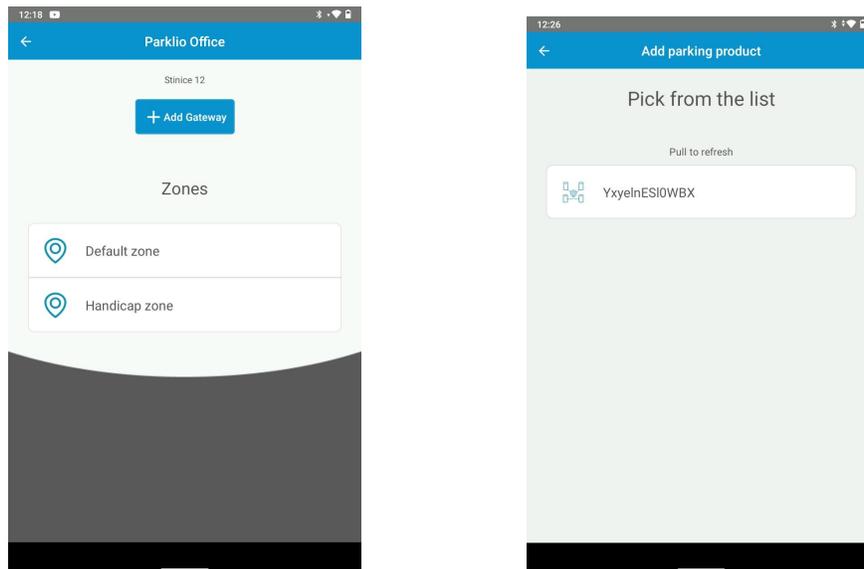
The user must enter their PMS email and associated password into the corresponding fields and press *Login*.

7.6. Assigning the Gateway to a Parklio account

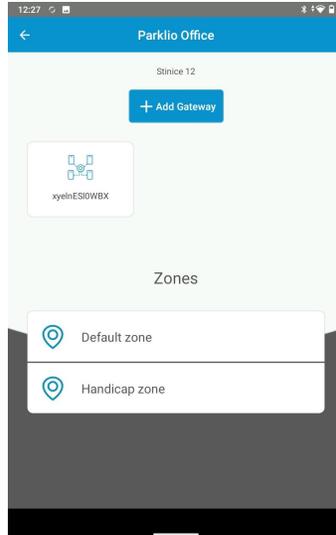
To be able to add Parklio Gateway through the Parklio Connect mobile application, the Parklio Gateway needs to be in the 'Connection' mode.

To add a gateway to the account first select the lot and click on + Add Gateway. The Add parking product screen opens and the smartphone starts scanning for nearby Gateways. This step should be done in close proximity to the Parklio device you are adding.

Note: It is recommended to first add the Gateway and then other devices.



In the list of devices find and click on the gateway you wish to add. The device name will be the capital letter 'Y' followed by the gateway UUID. In our case if the UUID is "xyelnESIOWBX" the device will appear as "YxyelnESIOWBX". If the setup is successful the device will appear under the + Add Gateway button on the parking lot that it was added to.



7.7. Unassigning the Gateway

In order to move the Gateway to another lot or another parklio account it is required to unassign the Gateway from the current account

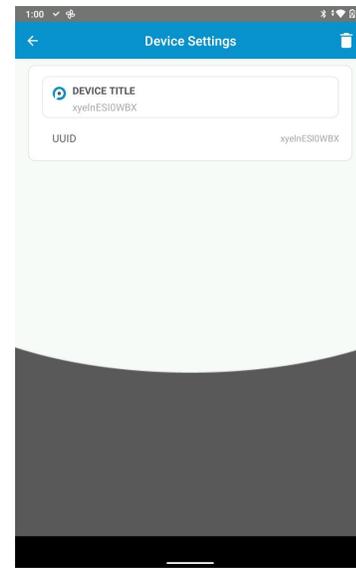
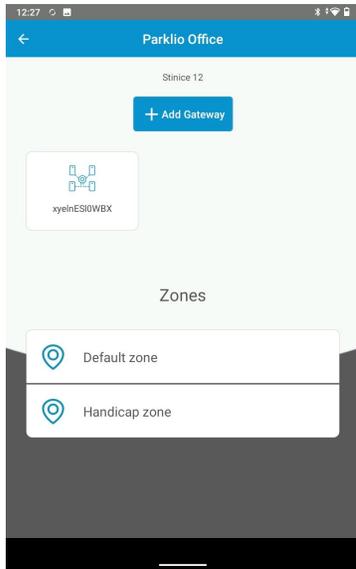
The gateway is provided in a blank state and not assigned to any lot. It is not possible to assign the gateway to another lot before removing it from the previous.

Unassigning using Parklio Connect

To remove the gateway from a lot using Parklio Connect, open the application and go to the lot that the Gateway was added to.

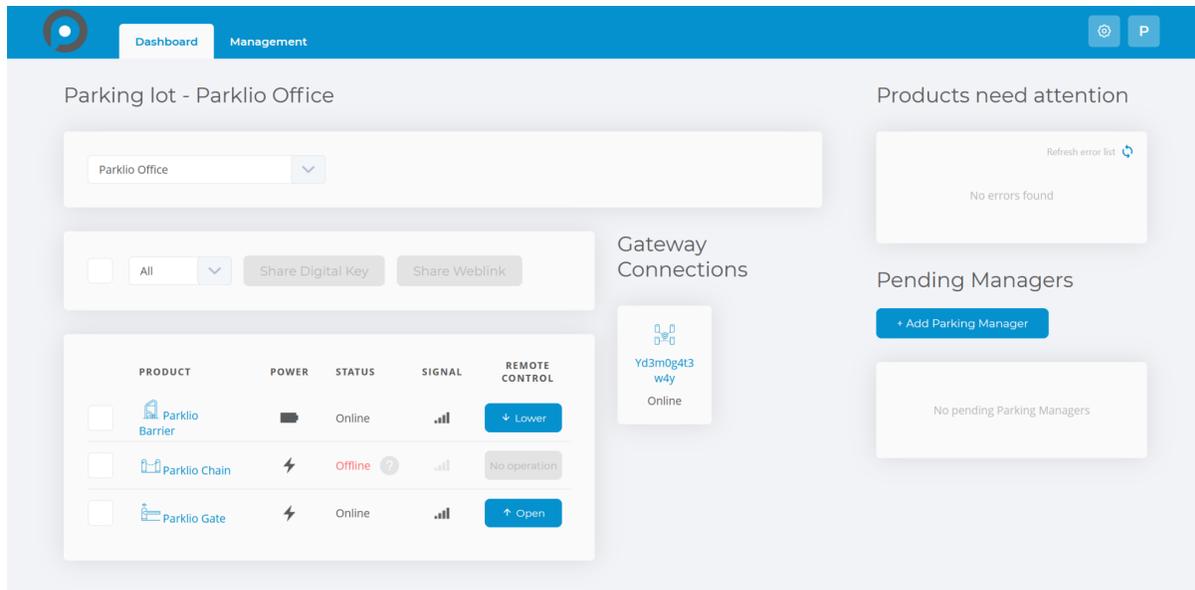
Click on the gateway you wish to remove from the lot, the gateway *Device Settings* screen will open.

Click on the remove icon in the top right corner of the screen and confirm the removal. The gateway is now removed from the lot and available to be assigned to other lots.

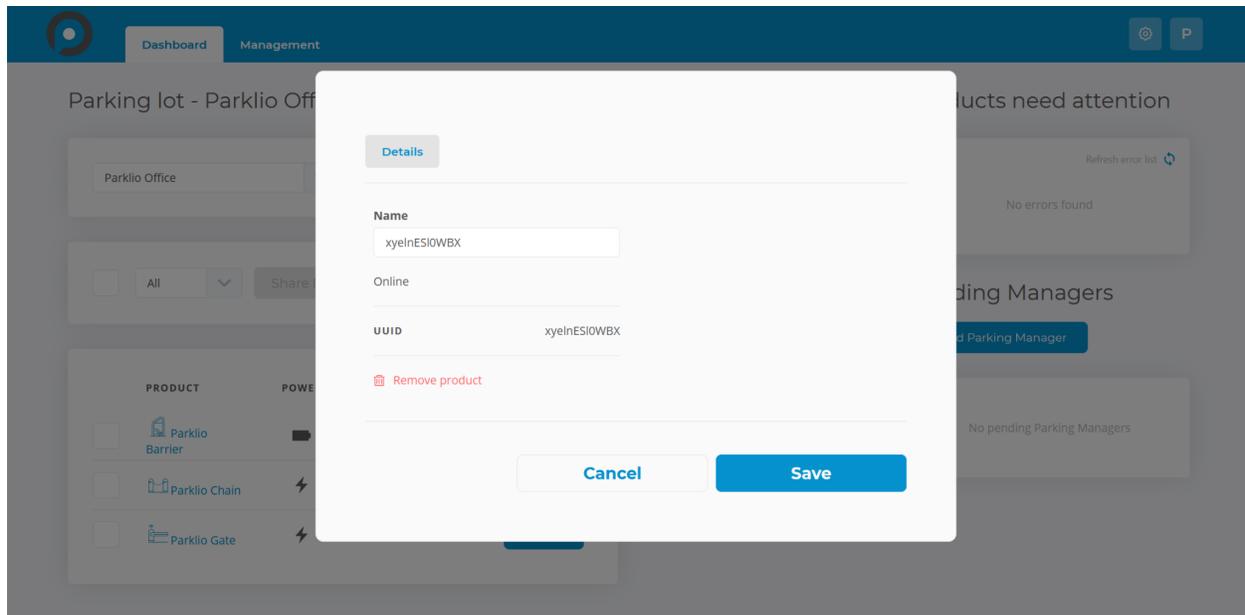


Unassigning from the Parklio PMS

If the Gateway is added on a Parklio PMS account it can be unassigned via the PMS interface. Login into the Parklio PMS and select the parking lot with the Gateway you wish to unassign.



Click on the Gateway you wish to remove in the Gateway Connections section. A popup window with gateway settings will appear.



Click the *Remove product* button and confirm that you wish to remove the gateway.

7.8. Web interface

The Parklio Gateway has a built-in web interface for managing gateway settings.

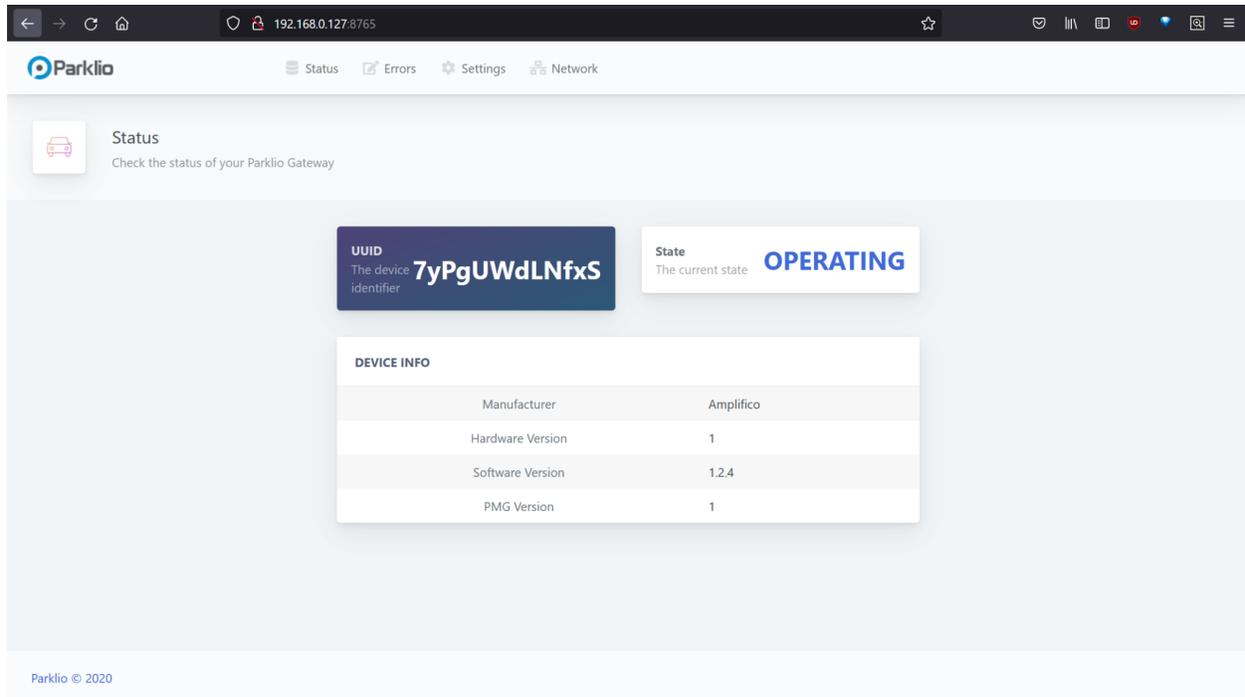
The unit is configured to obtain an IP address from a DHCP server. The gateway will have the hostname `PGATE_UUID`, where the `UUID` is the gateway UUID. If the DHCP server is not available, the unit automatically configures itself with a self-generated IP address in the `192.168.0.x/24` subnet.

To access the web interface of the product, simply use a browser to connect to **`http://ipAddress:8765`**, where `ipAddress` is the gateways IP address.

When logging in to the gateway interface an *ID* and *password* will be required. The username is the gateway UUID and the password for the web interface may be found on the stickers included in the packaging.

Gateway status

The homepage of the web interface displays the gateways status, the hardware and firmware versions.



The screenshot shows the Parklio web interface for gateway status. The browser address bar shows the URL 192.168.0.127:8765. The interface includes a navigation menu with 'Status', 'Errors', 'Settings', and 'Network'. The main content area is titled 'Status' and contains a 'Status' card with the text 'Check the status of your Parklio Gateway'. Below this, there are two summary cards: 'UUID' with the value '7yPgUWdLNfxS' and 'State' with the value 'OPERATING'. A 'DEVICE INFO' table is also present, listing the following details:

DEVICE INFO	
Manufacturer	Amplifico
Hardware Version	1
Software Version	1.2.4
PMG Version	1

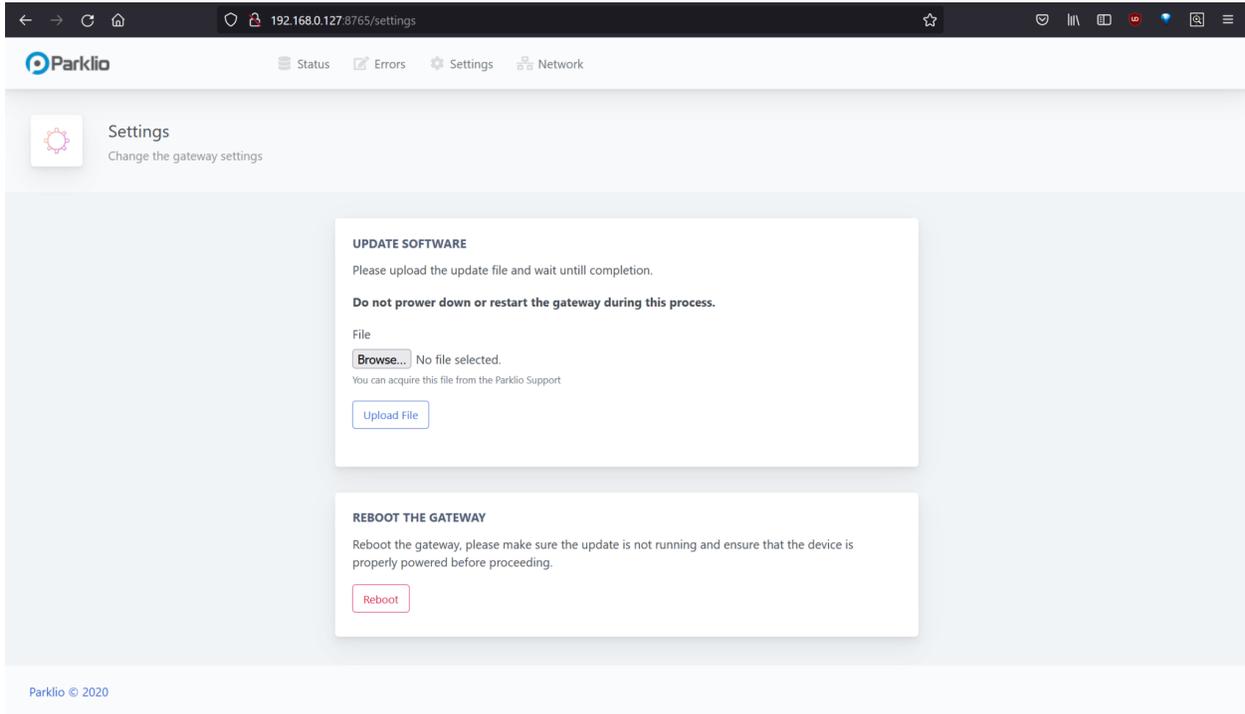
The footer of the page displays 'Parklio © 2020'.

Gateways status:

- OPERATING - The gateway is operational
- BLE ERROR - There is a bluetooth error or an error connecting to Parklio servers
- DISCONNECTED - There is a network error, the gateway cannot connect to the Internet

Gateway settings and manual firmware update

In the gateway settings tab on the web interface it is possible to manually update the gateways firmware if required. To update the gateway browse to the firmware update file provided by Parklio and click on *Upload file*.



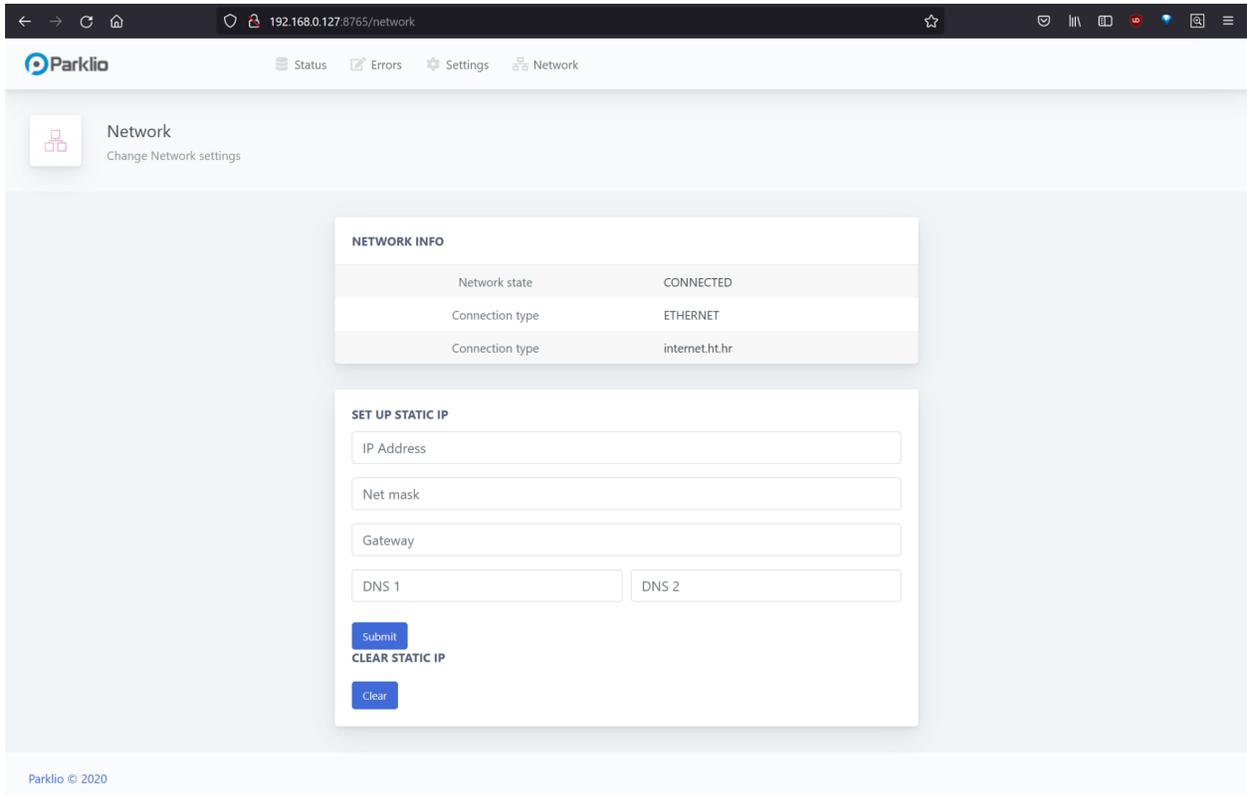
The screenshot shows a web browser window with the address bar displaying `192.168.0.127:8765/settings`. The page title is "Settings" with the subtitle "Change the gateway settings". The main content area contains two sections:

- UPDATE SOFTWARE**
Please upload the update file and wait until completion.
Do not power down or restart the gateway during this process.
File
 No file selected.
You can acquire this file from the Parklio Support
- REBOOT THE GATEWAY**
Reboot the gateway, please make sure the update is not running and ensure that the device is properly powered before proceeding.

The footer of the page displays "Parklio © 2020".

7.9. Network configuration

To change the gateways network settings (static IP) open the *Network* tab in the gateways web interface.



NETWORK INFO	
Network state	CONNECTED
Connection type	ETHERNET
Connection type	internet.hLhr

SET UP STATIC IP	
<input type="text" value="IP Address"/>	
<input type="text" value="Net mask"/>	
<input type="text" value="Gateway"/>	
<input type="text" value="DNS 1"/>	<input type="text" value="DNS 2"/>
<input type="button" value="Submit"/>	
CLEAR STATIC IP	
<input type="button" value="Clear"/>	

The current network status and information is displayed under Network Info. If the gateway is configured with cellular network access the APN and cellular network parameters are displayed.

To configure the gateway to use a static IP address fill in the IP Address, Net mask, Default Gateway and DNS addresses. To confirm the changes, press *Submit*.

After inputting the network parameters the gateway needs to be restarted in order for the changes to take effect. Please reboot the gateway from the *Settings* menu.

Use this configuration with extreme caution. If the router your Parklio Gateway is connected to is not configured properly or does not respect the configured IP address, this Parklio Gateway could become unreachable. We strongly recommend you keep the ethernet connection configured to use DHCP where possible.

To revert back to DHCP press the *Clear* button and restart the gateway.

8. FAQ

What is the optimal height to install the Gateway?

Optimal height for the installation of the Gateway is 3 metres with the distance from other Parklio products being up to 20 metres and without any obstacles in between.

Where can I install the Gateway?

The Gateway can be installed on a wall or on a pole.

Does the gateway have PoE capability?

The Parklio Gateway does not have PoE capability.

Can the Gateway work outside in the snow and rain?

Yes. The Gateway is completely waterproof and resistant to the external conditions with operating temperature resistance in the range from -20 °C to +60.

How to set up the Gateway?

A set of video instructions is provided on youtube:

<https://www.youtube.com/watch?v=Mn1Y5POARps>

Where can I find the gateway MAC address?

The MAC address can be found on the back side of the gateway, or on the sticker provided in the packaging.

What is the typical bandwidth consumption in normal operation?

The approximate monthly bandwidth for a Gateway controlling 20 products is around 1GiB, this may vary based on required software updates and intensity of use.

When I press the button for entering the connection mode the gateway appears as COM-BTD on the Parklio Connect application?

Please wait for the gateway to exit connection mode (LEDs stop blinking) and put the Gateway into connection mode again.

How is the Gateway powered and connected to the Internet?

The Gateway needs its own power supply and Ethernet connection that needs to be brought to the Gateway. The Gateway can also be connected to the Internet via mobile network.

How many and what products can the Gateway control?

One Gateway can control up to 20 Parking Barriers or 4 Parklio Gates/Chain/Bollards/Brains.

Is there any remote management option or any way to connect to the gateway locally?

The Parklio Gateway has a built-in web server which can be used to set network parameters, perform updates and check the state of the gateway.

Is there any way to check connectivity to the Parklio server from our network?

You can check connectivity by typing in *api.parklio.com* in your browser. You should get a response like: {"success":true,"message":"Parklio API - DEPLOYMENT_ENV"}.

My device is offline after restarting the Gateway. What should I do?

If all the LEDs are turned on after reset you should connect to the device with the connect app. This will restart the connection between the Gateway and the device.

