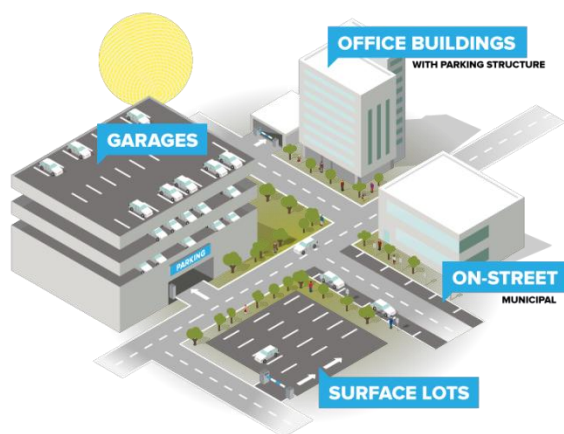




Parkifi Sensor v2 User Manual





About Parkifi

Founded in 2014 by Ryan Sullivan and Rishi Malik, Parkifi is revolutionizing the world of parking. Our mission is to reduce parking challenges using real-time data. Whether it's a parking owner or operator looking to increase their top line revenue, create more efficient processes and better understand their lot, or a person driving around for 15 minutes looking for a parking spot, Parkifi provides the solution. We use sensors to track data across all the parking spots you operate to gain valuable insights on trends and patterns.

By gathering, filtering and sharing this data in real time, we help you manage parking far more efficiently – and revolutionize the way they monetize it. Our solutions work equally well for parking garages, surface lots and municipal parking.

Some of the key parking frustrations we address include:

- City traffic congestion
- Harmful emissions
- Wasted fuel
- Lost time looking for parking
- Enforcement inefficiencies
- Lost revenue

Parkifi is headquartered in Denver, CO.



Sensor v2 User Manual

Instructions:

Chalk Lines:

- Measure half the depth of a spot in from the top of the spot and mark. Do the same on the other end of the line
- Chalk a line between the two ends
- Go through each spot and mark the midpoint on the chalk line to find the center of the spot where the sensor will go

Surface Lot (Recessed Installation):

- Use a 4.25" core drill bit and drill 1.25" deep into the center of the spot
- Use a chipping gun to chip out the inside of the core drilled hole
- Use a vacuum or gloves to clear out dust/debris from the hole
- Put in self leveling (SL) adhesive around the edge of the hole and on the bottom of the sensor



- Put the sensor in the hole so the top is level with the ground
- Default orientation is with the Parkifi 'P' facing up in the spot at 12 o'clock
- If the antenna is in the direction of the top or bottom of the 'P', rotate the sensor 90 degrees so that the top of the 'P' is now at 3 o'clock
- Put adhesive around the outside of the hole to fill in the gaps around the sensor. Put adhesive around the top of the sensor to cover the four screws
- Go to Installifi > Zones > View Spots and run base_recalibration on the spot. Wait 3 minutes then check to see that the Sensor Calibrated At time is populated
- Go to Installifi > Zones > View Spots and run cloud_recalibration on the spot. Verify that the Cloud Calibration Start Time is populated and wait 7 minutes. After those 7 minutes are up the spot is complete



Garage (Surface Mounted Installation):

- Lay all sensors into the center of the spots as determined by your chalk lines
- Go to Installifi > Zones > View Spots and run base_recalibration on all sensors in the zone.
Running a base_recal allows the sensors to start reporting magnetometer data
- Go to each sensor page and check the Sensor History Series Data. Hover over the furthest-right point to see the X, Y and Z magnetometer values
 - Check that all values are less than the absolute value of 1200 (less than 1200 or greater than -1200)
 - If any values are outside of that threshold, move the sensor a couple inches to the left or right in the spot, wait a couple minutes and check values again. Repeat until you find a point near the center of the space that has good magnetometer readings (less than absolute value 1200)
 - We prefer to move sensors left and right in the spot to keep the aesthetic so that if someone looked down the line of sensors they'd all be in line
- Put high viscosity (HV) adhesive on the bottom of the sensor and stick it in the spot
 - Default orientation is with the Parkifi 'P' facing up in the spot at 12 o'clock
 - If the antenna is in the direction of the top or bottom of the 'P', rotate the sensor 90 degrees so that the top of the 'P' is now at 3 o'clock



- Put high viscosity (HV) adhesive around the outside of the ring. Put the ring down around the sensor and stand on it



- - Go to Installifi > Zones > View Spots and run base_recalibration on the spot. Wait 3 minutes then check to see that the Sensor Calibrated At time is populated
 - Go to Installifi > Zones > View Spots and run cloud_recalibration on the spot. Verify that the Cloud Calibration Start Time is populated and wait 7 minutes. After those 7 minutes are up the spot is complete



Operation Description

Bluetooth LE Function Description

The Bluetooth LE transceiver includes PLL, VCO, LNA, PA, modulator and demodulator. The Bluetooth baseband signal processor incorporates hardware engines performs frequency hopping, error correcting, whitening, encrypting, data packet assembling and de-assembling. Bluetooth LE function is fully compliant with Bluetooth specification 4.0. Bluetooth basic rate use GFSK modulation, where an instantaneous data rate of 1 Mbit/s is possible.

433MHz RF Function Description

For 433MHz RF function operation, devices communicate using near field EM wave with 433MHz frequency. Its transmission data rate is set as 9600 bps for type of standards. The significant advantages of 433MHz wireless signal penetration is strong, able to spread further. 433MHz RF function generally used in some device which request less data transfer.



Federal Communication Commission Interference Statement

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 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.

FCC Caution:

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

This equipment complies with FCC & IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.



Industry Canada statement

- ❶ This device complies with Industry Canada license-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.
- ❶ Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
 - 1) l'appareil ne doit pas produire de brouillage, et
 - 2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
- ❷ This Class B digital apparatus complies with Canadian ICES-003.
- ❷ Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.
- ❸ This device complies with RSS-310 of Industry Canada. Operation is subject to the condition that this device does not cause harmful interference.
- ❸ Cet appareil est conforme à la norme RSS-310 d'Industrie Canada. L'opération est soumise à la condition que cet appareil ne provoque aucune interférence nuisible.
- ❹ This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter, except tested built-in radios.
- ❹ Cet appareil et son antenne ne doivent pas être situés ou fonctionner en conjonction avec une autre antenne ou un autre émetteur, exception faites des radios intégrées qui ont été testées.
- ❺ The County Code Selection feature is disabled for products marketed in the US/ Canada.
- ❺ La fonction de sélection de l'indicatif du pays est désactivée pour les produits commercialisés aux États-Unis et au Canada.