

User Manual

IoT Device

Model: PJ22IOT



1.Introduction

Thank you for purchasing the IoT devices of Segway Inc.!

The IoT device is designed for the shared scooter and it could communicate with the cloud server via cellular communication.

Our IoT device is highlighted with the following features. First of all, you could fully control the scooter, such as lock/unlock, power on /off, turn on/off the throttle, and switch between different riding modes, etc. Secondly, it could help monitor the state of the scooter through its communications with the server, such as sending alarms, firmware version information, battery temperatures, etc. In addition to that, it also has the auxiliary features like prompt voice and it has the superior waterproof design.

This user manual provides an overview of the basic functions of the IoT device. Please read it carefully to ensure your safe and proper usage of the IoT device.

The pictures showed in this user manual are for reference only. For the exact information of the IoT device, please subject to the packed goods. The accessories in the package may be different according to different models of scooters which will be connected to the IoT device, please subject to the shipped goods.

If other details required, please contact our technical staff.

[Email: Service@segwaydiscovery.co](mailto:Service@segwaydiscovery.co)

Service time: Monday to Saturday, 9:00- 18:00(GMT+8).

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This user manual is for reference only, it does not constitute any commitment to product. Please prevail in kind.

2. Basic Parameters

Item	Specification
Cloud Communications	Connected to the server through TCP socket
Bands of Northern America Version(US, Canada)	FDD-LTE B2/B4/B12
	UMTS/HSPA+ B2/B5
Bands of EMEA Version (EMEA/Korea/Thailand)	FDD-LTE B1/B3/B5/B7/B8/B20
	TDD-LTE B38/B40/B41
	UMTS/HSPA+ B1/B5/B8
	GSM/GPRS/EDGE 900MHz/1800MHz
Bands of Australia Version (Australia/New Zealand/South America/Taiwan)	FDD-LTE B1/B2/B3/B4/B5/B7/B8/B28
	TDD-LTE B40
	UMTS/HSPA+ B1/B2/B5/B8
	GSM/GPRS/EDGE 850MHz/900MHz/1800MHz/1900MHz
Bands of Japan(Japan)	FDD-LTE B1/B3/B8/B18/B19/B26
Connectivity/BLE	BLE4.0 (2402-2480MHz) (Auxiliary unlocking)
GNSS	GPS+GLONASS/GPS+BDS
Antenna Efficiency	Celluar>40%; GPS>70%
Unlocking Time	1-3s
Geolocation Precision	≦ 15m (open ground, sunny unobstructed)
Geolocation Time	Hard/Cold Boot <35s; Soft/Warm Boot<1s (open field)
Max. RF Power transmitted: (Declaration for EU Compliance)	Bluetooth: -5.89 dBm GSM: 33.0 dBm; DCS: 30 dBm UMTS: Band I: 22.60 dBm, Band VIII: 23.44 dBm LTE: Band 1: 22.85 dBm, Band 3: 22.99 dBm, Band 7: 23.75 dBm Band 8: 24.12 dBm, Band 20: 23.89 dBm, Band 38: 24.02 dBm, Band 40: 23.38 dBm

2.Basic Parameters

Item	Specification
Voice Prompts	Factory Defaults; Volume:70-90dB
Motion Detection	Triaxial Accelerometer
Operating Temperature	-20°C ~ 60°C
Storage Temperature	-40°C ~ 70°C
Operating Humidity	93%RH
IP Rating	IPX7
Unlocked state current	<40mA (36VDC average current)
Lock state (standby) current	<5mA (36VDC average current)
Battery&Communication Interfaces	5pin:36V,GND,TX (TTL),RX (TTL), Power_control_wire
Battery Supply Voltage	36VDC
Built-in Lithium Battery	3.7V/1000mAH (adaptation)
Backup Battery Life	>2h
Dimensions	170 X 80 X 56mm
Housing Material	PC+10%GF
Certifications	FCC/CE/*other customized certifications for different demands

3.Main Features

Main Features(Firmware Version: SD1.0.5) *This will be continuously updated
Lock&unlock, power on/off through both 4G and BLE4.0.
Two modes to locate: Single/Continuous
Adjustable sensitivity of accelerometer
User-defined communication interval between server and IoT
Headlight switch: manual or programmable
Enable/Disable Riding Modes Switch
Riding modes switch:manually or programmable
Enable/Disable Throttle, Cruise control, Front&rear lights flash
Searching scooter module
User-defined Max. Speed of different Riding Modes
Read and report scooter information remotely (speed, estimated battery life, Riding Modes. distance travelled and estimated remaining mileage, temperatures of scooter motor and mainboard, etc.)
Monitor charging state
Play voice prompts
IoT device dismantled alarm
Low batter alarm
Illegal scooter movements or shaking alarm
Scooter fallen down alert (report to server, no alarm)
Scooter fault alert
Remote firmware upgrades of scooters and IoT devices

4.Diagram

- a. IoT Device*1
- b. Rubber Stopper *4
- c. Fixer (U-shaped holder and board part)*1
- d. Screw (M5*12)*4
- e. Screw (M4*12)*4



5.Main Body Diagram



6. Assembling

a. The stem: **Remove the four anti-theft screws fixed to dismantle the stem.**



6. Assembling

b. The U-shaped holder: Put it on the stem and move it to the position as shown in the picture. Then reassemble the stem.



6. Assembling

c. The board part: First, pull the 5 pin cable of the scooter through the hole on board part. Second, after locating the board part according to the 2 screws on the stem, mount the 4 screws (M5*12) to attach the board part to the U-shaped holder.



6. Assembling

d. The IoT device: First, connect the 5 pin cable of the scooter with that of the IoT device. Second, mount the 4 screws(M4*12) to attach the IoT device to the board part. Third, mount the 4 rubber stoppers to the holes on the IoT device.



7. Notes

1. Do not use the IoT device beyond the operating temperature range: $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$.
2. Do not dismantle the IoT device to change SIM card inside because this will weaken its waterproof performance.
3. Keep the IMEI code label and Serial Number code label adhered on the IoT device intact.
4. Fixer may vary depending on the model of the scooter.
5. Environment surroundings, terrain and other factors may affect the signal quality of GPS and cellular communication.
6. The IoT device is a highly customized product. SIM cards will be installed into the IoT device in advance and the IP address of the server to which the IoT device will be connected will be written to the firmware. Please confirm this customization info with the manufacturer before your purchase.

8. Regulatory Info

FCC Regulatory Compliance

Note: 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 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 radio/TV technician for help.

Warning: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF Exposure Compliance

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

8. Regulatory Info

Supplier's Declaration of Conformity

47 CFR § 2.1077 Compliance Information

Unique Identifier:

Trade Name: Segway

Model No.: PJ22IOT

Responsible Party – U.S. Contact Information

Segway Inc.

14 Technology Drive, Bedford, NH 03110

Phone: +1 603-222-6000

Fax: +1 603-222-6001

www.segway.com

FCC Compliance 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.

8. Regulatory Info

ISED Regulatory Compliance

This device contains licence-exempt transmitter(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s).

Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2. L'appareil doit accepter tout brouillage radio électrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

8. Regulatory Info

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Cet équipement est conforme aux limites d'exposition aux radiations IC CNR-102 établies pour un environnement non contrôlé. Cet émetteur ne doit pas être situé ou fonctionner conjointement avec une autre antenne ou un autre émetteur. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.

CAN ICES-3 (B)/NMB-3(B)

Hereby, Ninebot (Changzhou) Tech Co., Ltd declares that the radio equipment type PJ22IOT is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:

https://www.segwaydiscovery.com/downloads/User_Manual_of_IoT_device_PJ22IoT.pdf

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