

## Sharing e-bike IOT WD-215



WD-215 is a IOT for the sharing e-bike&scooter . The terminal is equipped with 4G-LTE network remote control, GPS real-time positioning, Bluetooth communication, vibration detection, anti-theft alarm and other functions.Through 4G-LTE and Bluetooth, the IOT interacts with the background and mobile APP respectively to complete the e-bike control and upload the real-time status of the vehicle to the server.

### Functions:

- Rent/return the e-bike by 4G-Bluetooth
- Support battery lock/helmet lock/saddle lock
- Intelligent voice broadcast
- High precise parking on road studs
- Vertical parking
- RFID precision parking
- Support 485/UART/CAN
- Support OTA

### SPECIFICATIONS

Parameter	
Dimension	111.3mm × 66.8mm × 25.9mm

Input voltage range	Supports wide voltage input:12V-72V
Backup battery	3.7V, 2000mAh
Power consumption	Working: <10mA@48V Sleep: <2mA@48V
Waterproof and dustproof	IP67
The shell material	ABS+PC,V0 level fireproof
Working temperature	-20°C ~ +70°C
Working humidity	20 ~ 95%
SIMCARD	SIZE : Micro-SIM    Operator: Mobile
<b>Network performance</b>	
Support mode	LTE-FDD/LTE-TDD/WCDMA/GSM
Maximum transmit power	LTE-FDD/LTE-TDD: 23dBm
	WCDMA:24dBm
	EGSM900:33dBm;DCS1800:30dBm
frequency range	LTE-FDD:B1/B3/B5/B8
	LTE-TDD:B34/B38/B39/B40/B41
	WCDMA:B1/B5/B8
	GSM:900MH/1800MH
<b>GPS performance</b>	
Positioning	Support GPS and Beidou
Tracking sensitivity	<-162dBm
TTF	Cold start35S,    Hot start 2S
Positioning accuracy	10m
Speed accuracy	0.3m/s
AGPS	support
Positioning condition	The number of stars $\geq 4$ , and the signal-to-noise ratio is more than 30 dB

Base station positioning	Support, positioning accuracy 200 meters (related to base station density)
<b>Bluetooth Performance</b>	
Bluetooth Version	BLE4.1
receiving sensitivity	-90dBm
Maximum receiving distance	30 m, open area
Loading receiving distance	10-20m, depending on installation environment

### Functional Description

Function list	Features
Positioning	Real-time positioning
Lock	In lock mode, if the terminal detects a vibration signal, it generates a vibration alarm, and when the rotation signal is detected, a rotation alarm is generated.
Unlock	In unlock mode, device won't detect the vibration, but the wheel signal and the ACC signal are detected. No alarm will be generated.
UART/485	Communicate with the controller through the serial port, with the IOT as the master and the controller as the slave
Uploading data in real-time	The device and the platform are connected through the network to transmit data in real time.
Vibration detection	If there is a vibration, device would send out a vibration alarm, and buzzer speak-out.
Wheel rotation detection	The device supports the detection of wheel rotation. When the E-bike is in lock mode, the wheel rotation is detected and the alarm of wheel movement will be generated. At the same time, the e-bike won't be locked when the wheeling signal is detected.

ACC output	Provide power to the controller. Supports up to 2 A output.
ACC detection	The device supports detection of ACC signals. Real-time detection of the vehicle's power-on state.
Lock motor	The device send a command to the controller to lock the motor.
Induction lock/unlock	Turn on Bluetooth, the e-bike will be power on when device is nearby E-bike. When the mobile phone is away from the E-bike, the E-bike automatically enters the locked state.
Bluetooth	Supports Bluetooth 4.1, scans the QR code on the e-bike through APP, and connects to the Bluetooth of the user's mobile phone to borrow a e-bike.
External power detection	Battery voltage detection with an accuracy of 0.5V.Provided to the backstage as the standard for the cruising range of electric vehicles.
External battery cut-off alarm	Once detect the external battery is removed, it will send alarm to platform.
External battery lock	Working voltage: 3.6V Supports opening and closing the battery lock to lock the battery and prevent the battery from being stolen.
Reserved voice function	Reserved voice function, external voice speakers are required, it can support voice OTA
BMS	Obtain BMS information, battery capacity, remaining capacity, charge and discharge times through UART/485.
90°fixed point return (optional)	The terminal supports a gyroscope and a geomagnetic sensor, which can detect the direction and achieve a fixed-point return