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Electric Bicycle Wireless Charging Station

TRP-CS1

Main Market Challenges

• In the EU, over 5 million people use shared transport every day and this number is increasing by 30% per year. While the efficiency of shared transport is high, it faces challenges such as parking, locking and charging.

• According to the data, 3.5 million shared bicycles are operational across the country, with an average daily ridership of more than 10 million and growing.

• To replace bicycle batteries, operators spend 37% of their total operation and maintenance costs each year.

Problems such as charging, parking and locking of shared electric bicycles must be solved!

Advantages of Wireless Charging Operation Management

Charging

- With automatic shutdown and temperature detection functions wireless charging station charging safety control and risk prevention effectively.

Cost

- Reducing battery spare parts reserves and reducing fixed costs, on average, between $85-100 per vehicle saves money by lowering the cost.

Management

- Reducing the frequency of bicycle planning labor force reduces costs and efficiently utilizes the fleet manages it.

Tripy Electric Bike Wireless Charging Station

DESIGN A

DESIGN B

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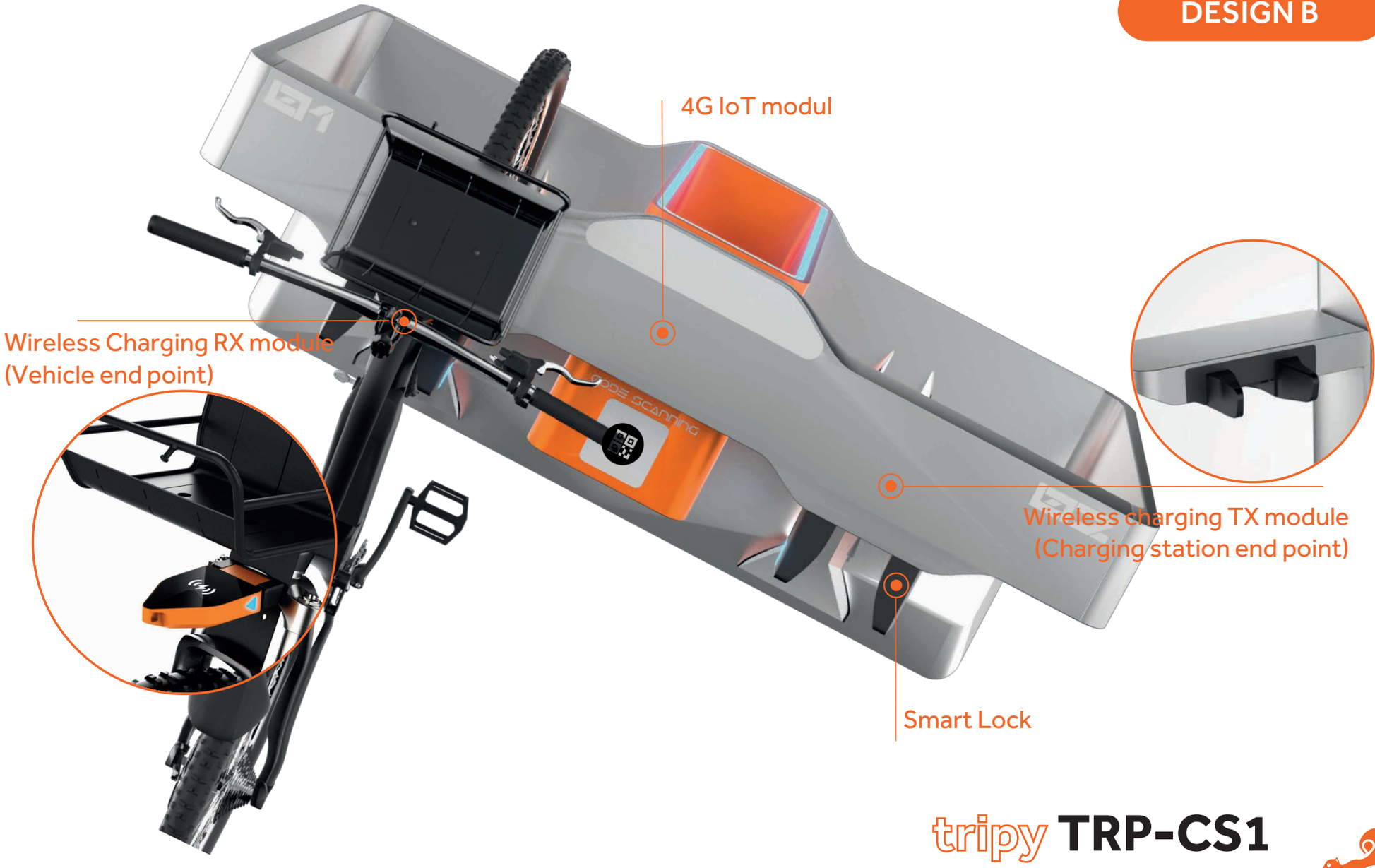
DESIGN B



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TASARIM B

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Electric Bike Wireless Charging Station

Charging Station IoT - Features

No.	Item	Specifications
1	Operating current	≤10mA@48V (not including internal battery charging current)
2	Operating voltage	24-72V (withstand up to 100V)
3	Standby battery	1000mAh (Polymer lithium battery)
4	Communication interface	RS485
5	BLE feature	BLE5.2 2.4GHz
6	Frequency	24bit, 8-96Kbps frequency, 82dB Signal-to-noise ratio
7	BLE	BLE5.2
8	Kornet	Class D amplifier, 4Ω 2W cornet
9	Operating temperature	-20°C ~ +65°C
10	Storage temperature	-40°C ~ +80°C
11	Water resistance	IPX7

Technical Specs.

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Charging Station RX Module - Features

No.	Item	Özellikler
1	Material	Bottom - metal, Top - plastic
2	RX output voltage	42V ±0.2V
3	RX output current	2.5A
4	Charging mode	Constant current - constant voltage
5	Protection mechanism	Over current, over pressure, over temperature
6	Productivity	Max 90%

Technical Specs.

Electric Bike Wireless Charging Station

Charging Station TX Module - Features

No.	Item	Specs
1	Power	120W
2	TX input voltage	48V/DC ±2V
3	TX input current	<3A
4	Heat dissipation mode	Aluminum heat sink, naturally cooled
5	Communication interface	RS485
6	Protection temperature	85°C

Station Interlock Module - Features

No.	Item	Specs
1	Operating voltage	24-48V/DC
2	Standby Current	<2mA@48V
3	Operating Current	<100mA@48V
4	Lock material	Metal kasa
5	Communication type	RS485

Technical Specs.

E-Bike Wireless Charging Station System Configuration

01 Main Connection Part

02 IoT System

03 Wireless Charging TX Module

04 Station Lock

05 Wireless Charging RX Module on E-Bike

06 E-Bike IoT / Smart Lock

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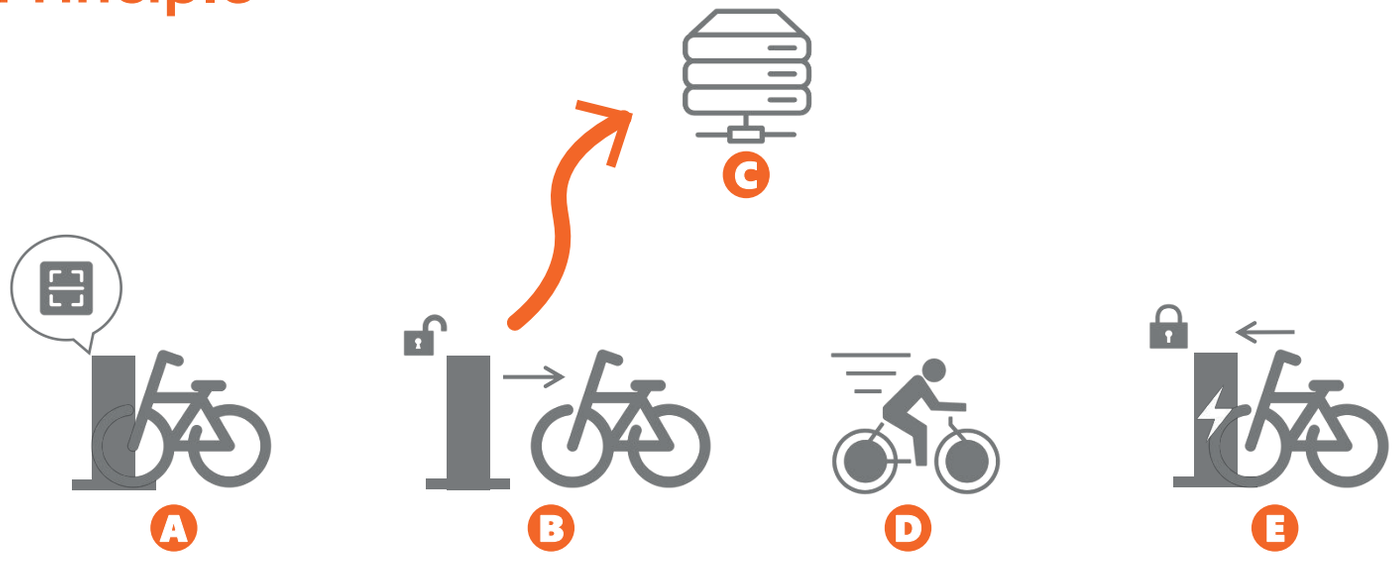
Working Principle



1. The user scans the bike IoT QR code and the server sends an unlock command; A
2. After the bike IoT receives the unlock command, it sends the unlock command to the charging station via wireless charging RX and then synchronously unlocks the vehicle; B
3. After the charging station receives the IoT unlock command, the station is unlocked and charging is stopped; then the status information of the station is reported to the server; C
4. The user takes out the bike and starts riding; D
5. After riding, the user locks the bike by pushing it back to the charging station and starts charging after authentication is successful; E

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