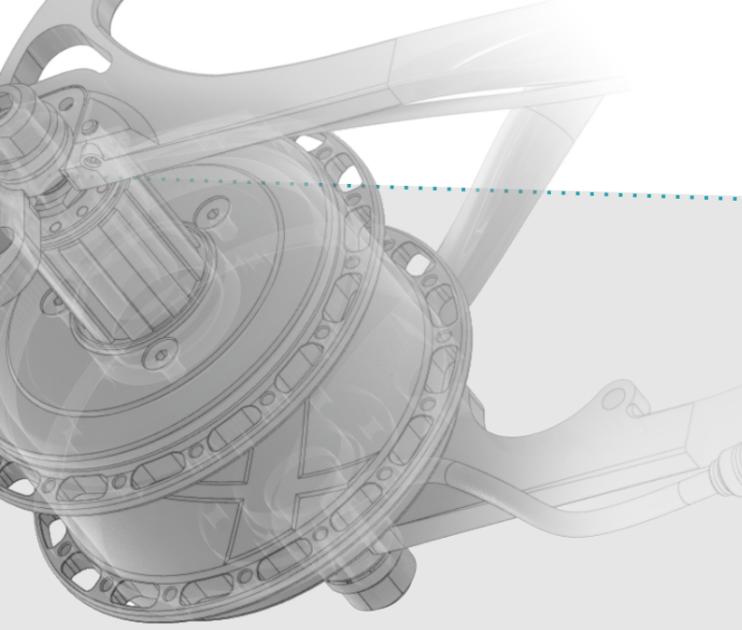


X SERIES

X35 integration for OEM

The X35 system includes the ebikemotion platform, that is, that all end-user applications, diagnosis, production and back office environments are available to both end users and OEMs themselves.

The ebikemotion platform includes: Mobile APP and sports Smartwatch. Diagnosis APP for stores. Production APP for OEM. WEB panel services for the end users. WEB monitoring and marketing tools for OEMs. All of this included in each X35 pack.

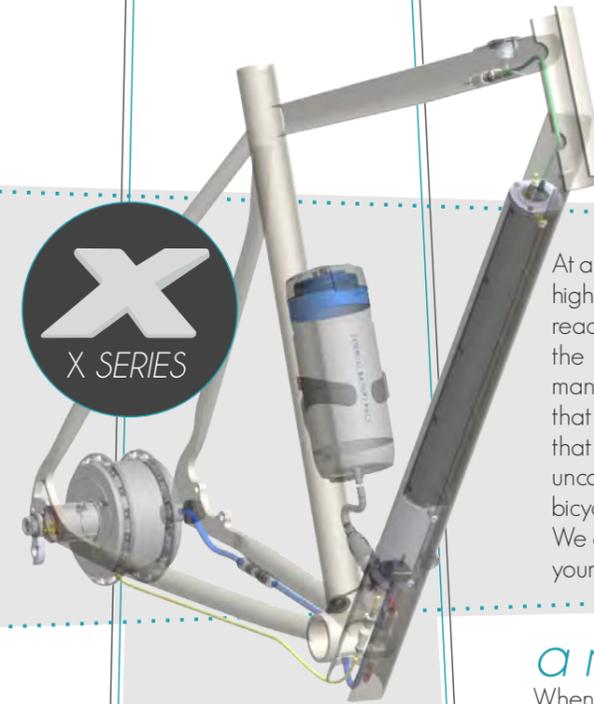


ebikemotion®

X35 - Light & Smart eBike System

At a time when most of the sector is looking towards a powerful electric bike, which involves high consumption and, therefore, large batteries and system and cost increases, almost reaching the motorbike concept, ebikemotion introduced an idea that may seem obsolete in the market. However, from the perspective of efficiency and optimisation, we have managed to recover the resources, creating a propulsion system (engine, battery, HMI, etc.) that offers the manufacturers of eBikes the chance to make something different, something that does not look like an eBike, something light (actually below 12 kg). A system with an uncommon autonomy that also allows the user to enjoy the feeling of cycling with an ordinary bicycle (non-electric).

We are talking about the X35, the first of a large family of propulsion products that will give your bike its identity back.



Designed & Manufactured in Spain (EU)

the ebikemotion platform is designed in Europe. Most of the essential parts, like Engine or Remote controls, are also made in Europe

Starting Pack

At ebikemotion we don't want you to leave anything behind, and we want the bike you design to be perfect. This is why we created the Starting pack.

It includes a series of demo Kits so that you can start developing the product, as well as comprehensive technical documentation, including 3D, models and integration examples.

Our engineering team will also check the 3D design of your eBike to make sure you didn't forget anything and that the integration is suitable. Our software engineers will also carry out verifications and work with your mobility managers in the customisation of the behaviour of your eBike. Inner downtube battery X35 (250 W) (Smart BMS & engine controller inside)

Components

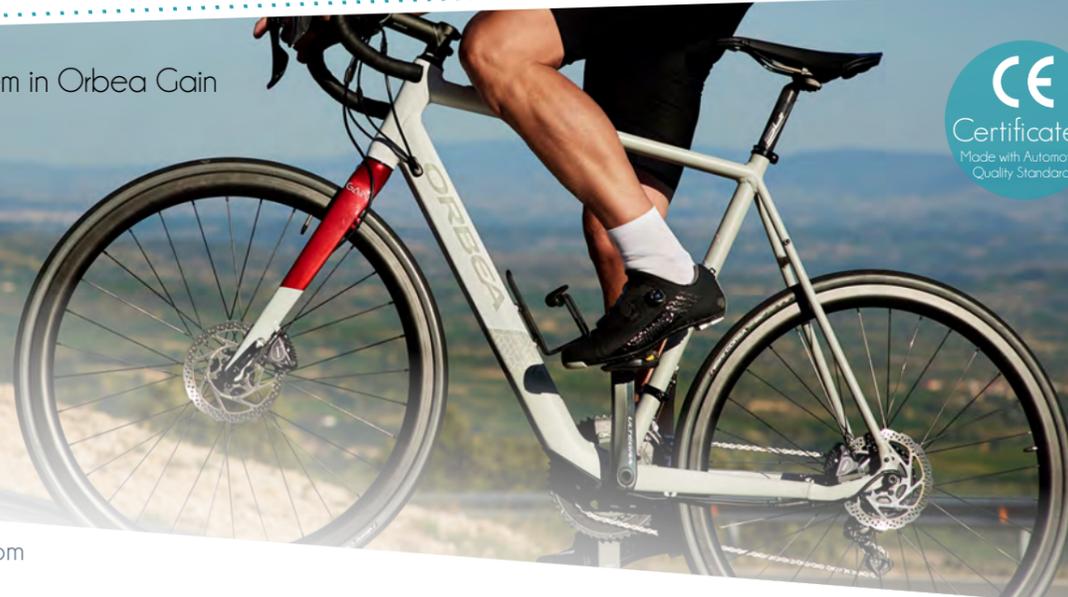
Each X35 OEM pack includes:

- Inner Tube X35 battery X35 (250W) (Smart BMS & motor controller inside)
- Lightweight X35 Hub engine
- Remote control (ONE, iWoc or TRIO depending of your electron).
- Charger, Wiring & accessories
- PAS sensor for freewheel
- ebikemotion APP maps license

The following are optional elements:

- User environment and OEM Ebikemotion Platform.
- One Smart Display
- Extra Power 250W optional battery
- GPS Tracker (Location and remote diagnosis system)

Integration X35 System in Orbea Gain



more info: ebikemotion.com

a new market

When some years ago they talked about electric bikes, we all had the idea of a city bike, with an engine on the wheel and a battery in the carrier. Who would have thought that the market's future would be the e-MTB. The eBike engine has gone through several versions: HUB, Central...

Nowadays, ebikemotion advocates for a new concept, mini-Hub and mini-Central engines that lower the weight, get rid of mechanical friction and optimise the power so that manufacturers can create new bike models. Genuine e-Race bikes or e-Gravel bikes, or even commuting bikes that just seem like ordinary bikes when looked at or lifted from the floor.

Target Applications:

- light ebikes:
- e-city bicycles
 - e-race/road bicycles
 - e-gravel
 - commuting e-bikes
 - e-mtb XC

- Motor M1 36V / 250W
- Battery 250Wh
- HMI, wiring & accessories

only 3.5 kg and completely transparent for the user when the engine is not in operation.

The first one of the ebikemotion Series "X" systems to arrive on the market is the X35, a light propulsion system based on a rear HUB engine, with incredible potential and only 3.5 kg for the entire system, this is: Battery + Engine + Charge point + HMI and cabling. This weight, combined with a battery of less than 48 mm section (non-removable and under patent), allows the manufacturing of electrical road bikes with weights that range between 12 and 14 kg, in aluminium, and below 12 kg in carbon. But they also add a series of improvements:

- X35 includes its own pedalling sensor (under patent) that enables the manufacturer to install the desired bottom bracket system. This way they get rid of friction, and they achieve very smooth system starts and stops, offering the user a conventional bike when the electrical system is not switched on. This is completely impossible in a central engine.

- The battery has everything in a single body -engine control, cabling, BMS- and it remains fixed on the inside of the downtube. However, this is not a problem. Up to two external batteries can be connected to the system to reach 750W, with autonomies of more than 250 km (or 75 km with the internal battery).

- The engine offers an incredible torque thanks to its gearing, reaching 40 Nm in the wheel axis, and with an optimal result at speeds between 15 and 25 km. These are ideal for commuting, city or road, right where it is needed: when ascending. Simple and efficient. The essence of the "less is more" concept is carried out in an elegant way and studying the smallest detail. solution for commuting, city or road just when you need, during uphill.

- The HMI interface breaks the moulds. The HMI CAN bus enables the connection of different solutions, from a single button with RGB LED integrated into the box, to a remote control of 3 or 5 buttons and a new-generation colour display based on the Cortex A7 processor. Of course, the APP platform is fully compatible.

Light & Smart eBike System

HEADQUARTERS

EBIKEMOTION TECHNOLOGIES Soc. Lim
C/ Orfebres, 10 - 34004
(Palencia, Spain)

phone: (+34) 810 101 201
email: hello@ebikemotion.com
internet: www.ebikemotion.com

RESEARCH CENTERS

BISITE R+D Group
(University of Salamanca)

MAHLE ELECTRONICS SA
(Valencia - Spain)

STAGEMOTION SL
(Palencia - Spain)

PRODUCTION CENTER

MAHLE NAGARES SA
(Motilla del Palancar - Spain)

MAHLE ELECTRONICS VALLADOLID SA
(Valladolid - Spain)



ebikemotion: X35 System Overview

Simple and efficient. The essence of the "less is more" concept is carried out in an elegant way and studying the smallest detail.

The X35 System offers a broad range of components and accessories so that the manufacturer can create its eBike.

As a platform, it requires the development of a custom-made frame. For its manufacturing ebikemotion has exhaustive documentation with drawings, details, alert points, 3D files, and a team of expert engineers in integration who review each one of the projects before they are launched on the market.

ebikemotion

X35 System

Intelligent Control Options

iWoc

- ON, OFF, LIGHT, WALK Mode, APP and DisplayControl
- Information by RGB LED
- 7 signal LED for notification
- CAN BUS compatible
- Bluetooth® BLE 4.1



iWoc TRIO

- ON, OFF, LIGHT, WALK Mode and Display
- Control Information by RGB LED
- CAN BUS compatible
- Vibration Function (under patent)



iWoc ONE

- ON, OFF & LIGHT, control battery & assist level information by RGB LED
- Smart & Compact for race e-bikes



Motor HUB Drive M1

- 36V - 250w
- Max. Torque: 40N.m
- Ratio: 14:1
- Maximum speed: 25km/h
- Diameter: 100 mm
- Compatible 11v & Brake Disk
- Weight 2.1 Kg
- Spokes: 32/14G
- Assambling by 2 Allen nuts



PAS Sensor

- 40 pulses
- Magnetized NUT
- Own algoritm & electronic to detect pedaling based in freewheel



Recharge Point

- CAN BUS included (charger, diagnosis and extra Battery connection)
- Coded connection
- Max. 12A for external battery and 2A for charging
- Diagnosis by CAN Adapter, computer, tablet or by bluetooth.
- Cover Tap Included



Smart Motor Controller

- CAN BUS Compatible
- 36 V
- Bluetooth® BLE 4.1
- High efficiency & perfomance



Inner Tube Battery

- 36V 250W Panasonic 18650GA - 10S/2P
- CAN BUS Compatible (Smart)
- Balanced
- Head light and USB output



Smart Color Display (optional)

- 2,2" Screen
- ARM cortex A7 architecture
- Linux OS
- 6/17V, CAN BUS Compatible
- 3G Axis Accelerometer & Wifi
- High efficiency & performance
- Bluetooth® BLE 4.2



each e-Bike is different

One of the biggest problems in the industry is that eBikes models are practically the same when the manufacturer uses a standard propulsion system. Only some ebike manufacturers can negotiate the modification of the behaviour of their eBikes with the manufacturer of the engine. The same thing happens with battery integration.

At ebikemotion it is exactly the other way round. In the integration services, we include a series of tasks to adapt the behaviour of the engine to the needs of the bike designed by the user. And we don't mean the colour of the bike or its presentation for the market. What we are saying is that two eBikes equipped with X35 in the same segment and from two different brands will behave differently, and this is decided by the manufacturer.

One Product + One Platform



Dealer / End User & Web Apps included

GPS Tracker (optional)

- Location, Position & Tracking of e-bikes
- User Loyalty
- Data & Update Firmware devices connected
- 36V and CAN BUS Compatible
- Bluetooth® BLE 4.1



Xtra Power (optional)

- 36V 250W Panasonic 18650GA-10S/2PCAN BUS Compatible (Smart)
- Balanced operation as charger or independent battery
- Adding the energy 250W +250W

