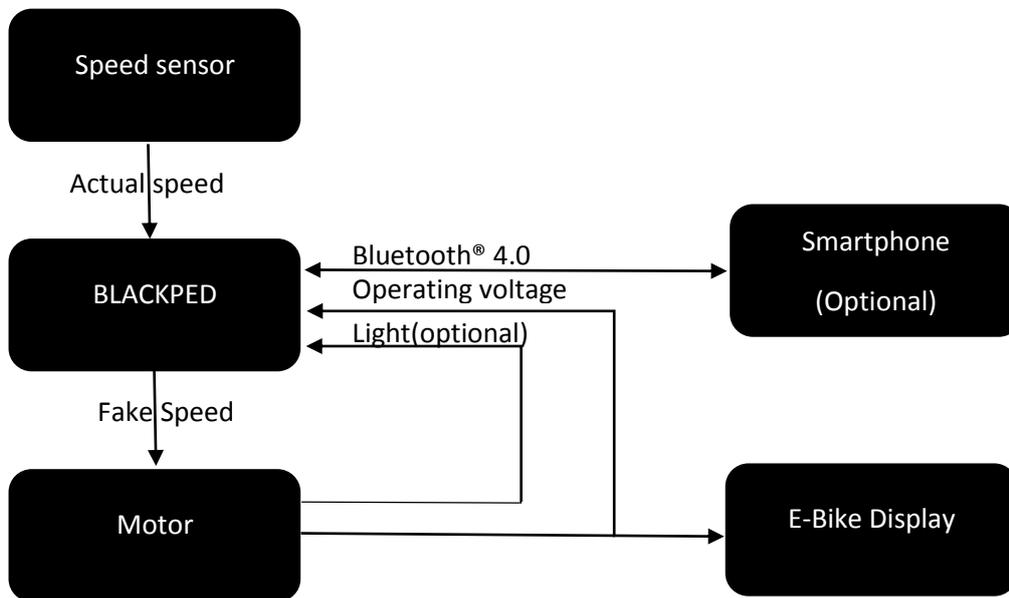# BLACKPED

E-Bike Tuning Chip

Manual

Version 2

Hints and Disclaimer

The use of the BLACKPED module is only allowed in private, gated areas, for example for sports or marketing purposes. It manipulates the maximum speed settings of your Pedelec or S-Pedelec, set by the manufacturer, which is prohibited by the road/streets' laws. The BLACKPED module manipulates the speed sensor signal and therefore the total distance display your E-Bike. The use of the BLACKPED module falls under own risk. No liability is assumed for any present and future damage caused to property and / or persons by the installation / removal and / or use. The guarantee of the E-Bike is completely extinguished by the use or application of the BLACKPED, because the installation or use represents a modification or manipulation of the E-Bikes (Pedelec or S-Pedelec). If your E-Bike has an operating license, it will extinguish. Always drive carefully, use protective clothing such as helmets or protectors and do not bring yourself and others in danger. Talk beforehand with your insurance company, so that all areas of your actions are protected. Please note further that other statutory provisions apply in other countries. This is especially true when you are driving with the E-Bike in your holidays. Please inform yourself beforehand about possible restrictions and keep principles in mind.

Inhalt

1. Mode of operation

The BLACKPED module is the link element between speed sensor and the engine. The headlight connector of the E-Bike can be optionally connected to the module.

The motor support limitation is removed by generating a lower fake speed.

Hint

The display of the E-Bike does not show the actual speed, average speed, maximum speed, total distance, distance if the tuning is activated.

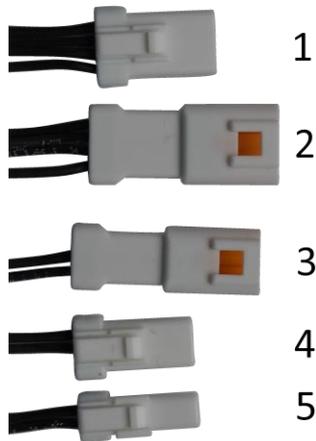You can see the actual values in the smartphone app.

2. BLACKPED module

The module is placed inside the frame of the E-Bike, after pluging all of the connectors.

BLACKPED module

There are two versions of the module: for Bosch and Haibike Yamaha E-Bikes. They differ in the connectors. A wrong connecting is not possible.

Haibike Yamaha

Bosch

Technical specifications	
Dimensions	4,5x2x1cm
Cable length	11cm
Power dissipation	50 mW
Radio range	10m
Radiocommunication	Bluetooth® 4.0
Splashproof	Yes

Connector connected with…	
1	the display
2	the motor display jack
3	the speed sensor
4	the speed sensor motor jack
5	the motor light jack

3. BLACKPED App for Android

There are two versions of the BLACKPED module, one PIN secured and the other not. The PIN secured module is compatible with Android 4.4.1 and 5 but not with Android 6. The not PIN secured module is compatible with Android up to 6.
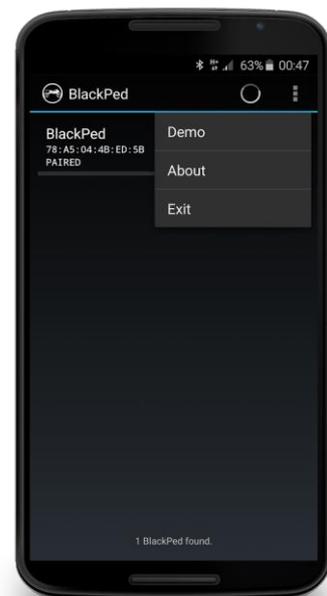
Home screen

The application will search for BLACKPEDs right after its launch. If a module is found, name, unique ID and signal strength are shown on the display. Further, the application shows, if the module and smartphone are paired. If there is no signal over 3 seconds, the module is being deleted from the list.

Before the app can connect to the BLACKPED, it has to be paired with the smartphone in the Bluetooth menu. The PIN default code is "000000".

Home screen - Options

Here you can start the demo. It shows the screen, which only can be seen if the module is connected to a BLACKPED. The controls can be tested without affecting any module or E-Bike.

Speedometer screen

As soon as the app is connected to a BLACKPED, it reads all data of the module. After all data is read, the controls are activated.

<u>Controls</u>
Max Speed: Actual max speed.
Mittlere Geschw.: Actual average speed.
Fahrzeit: Riding time in hours and minutes.
Strecke: Actual daily distance.
Gesamtstrecke: Actual total distance.

<u>Reset</u>
The values mentioned above can be reset by a **long** tap. With a **short** tap on the speed value you can switch the unit between km/h and mph.
With a **long** tap on the speed value, max speed, average speed, riding time and distance can be reset.

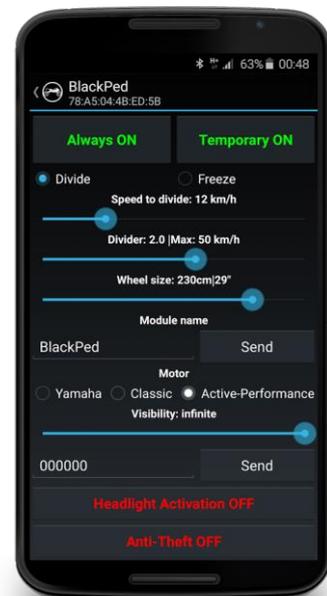**Always On/Off:** Shows if tuning gets activated automatically if the E-Bike is turned on.

Temporary On/Off: Shows if the tuning is active.

Divide: The speed is divided through the slider value. It's divided if it reaches the "Speed to divide" value.

Freeze: The speed stays constant if it reaches to "Speed to freeze" value.

Speed to divide: The speed is divided if this value is reached. The value depends on the divider.

Divider	Speed to divide
smaller than 1	1 to 8 km/h
2	min. 12 km/h
3	min. 18 km/h

Speed to freeze: If the speed reaches this value, it will freeze. Minimum value is 10 km/h.

Wheel size: Speedometer values are calculated with this value.

Module name: Advertising name, maximum length is 10.

Motor: Changing this control has no effect.

Visibility: This value determines how long the app can find the BLACKPED after turning on the E-Bike. Can be set from 0 to 240 seconds or to infinite. If set to 0 sec, the BLACKPED is competely invisible after turning on the e-bike. This value can be set to infinite with a reset. (Reset: Light button of the e-bike has to be pressed 10 times).

PIN: Consists of exactly 6 digits. If too few digits are entered, the value will be fillled with zeros. (1 = 000001; 345 = 000345)

Headlight activation On/Off: Shows if tuning can be activated with the E-Bike headlight button. The headlight button of Bosch E-Bikes has to be activated.

Anti-Theft On/Off: If activated, the speedsensor signal is cut off. The E-Bike will show an error and the motor will support up to 10 km/h.

Further features:

- The app connects automatically to the last connected module. It can be stopped with a tap on "Back".
- If the app loses connection to a BLACKPED, it tries to reconnect.
- The BLACKPED can be reset to factory settings by pressing the light button 10 times. On Bosch E-Bikes the light button has to be activated.
- All speedometer values are saved permanently to the BLACKPED if the E-Bike stops to 0 km/h.

4. BLACKPED App for iPhone/iPad

The iPhone/iPad App requires at least iOS 9.2.

Home screen

The app will search for BLACKPEDs right after its launch. If a module is found, name and signal strength are shown on the display. If there is no signal over 3 seconds, the module is being deleted from the list.

With a tap on the found BLACKPED, the app connects to the module. If it's a module is PIN code secured, the PIN "000000" has to be entered in the prompt. After entering the PIN the data is <u>not</u> loaded, the user has to reconnect.

Demo

The demo can be opened with a tap on the + symbol in the top left corner. It shows the screen, which only can be seen if the module is connected to a BLACKPED. The controls can be tested without affecting any module or e-bike.

Tacho-Bildschirm

As soon as the app is connected to a BLACKPED, it reads all data of the module. After data is read, the controls are activated.

<u>Controls</u>
Max Speed: Actual max speed.
Mittlere Geschw.: Actual average speed.
Fahrzeit: Riding time in hours and minutes.
Strecke: Actual daily distance.
Gesamtstrecke: Actual total distance.

<u>Reset</u>
The speedometer values can be reset with a **short** tap on the label. The unit of the speed can be switched between km/h and mph with a **short** tap on the speed label.

Always On/Off: Shows if tuning gets activated automatically if the E-Bike is turned on.

Temporary On/Off: Shows if the tuning is active.

Divide: The speed is divided through the slider value. It's divided if it reaches the "Speed to divide" value.

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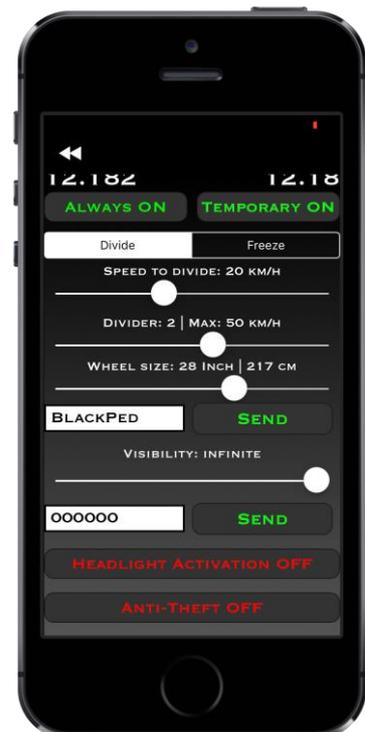
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- The BLACKPED can be reset to factory settings by pressing the light button 10 times. On Bosch E-Bikes the light button has to be activated.
- All speedometer values are saved permanently to the BLACKPED if the E-Bike stops to 0 km/h.

5. Appendix

R&TTE Declaration of Conformity (DoC)

We, M. Sc. Andreas Fischer, Hagstr. 2, 72762 Reutlingen, Germany

declare under our sole responsibility that the product:

BLACKPED

to which this declaration relates is in conformity with the essential requirements and other relevant requirements of the R&TTE Directive (1999/5/EC). The product is conform with the following standards and/or normative documents:
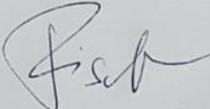
SAFETY

- EN 60950-1:2006+A11:2009+A1:2010+A12:2011

EMC (Art. 3(1)(a)):

- EN 301 489-1 v.1.9.2
- EN 301 489-17:V2.2.1
    - Radiated electric field immunity, EN 61000-4-3:2006

SPECTRUM (Art. 3(2)):

- EN 300 328 V1.8.1
    - Equivalent isotropic radiated power
    - Maximum spectral power density
    - Occupied channel bandwidth
    - Transmitter unwanted spurious emissions in the out-of-band domain
    - Transmitter unwanted spurious emissions in the spurious domain
    - Receiver spurious emissions

Reutlingen, 26.8.2015

M. Sc. Andreas Fischer, CEO

Reutlingen, 26.8.2015

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Bluetooth® Product Listing

The Bluetooth SIG Hereby Recognizes

M. Sc. Andreas Fischer
Member Company

D027959
Declaration ID

Referenced Qualified Design ID(s): 26384, 35451

Listing Date: 12 December 2015

Product Listing: BlackPed

This certificate acknowledges the products declared by the member were listed in accordance with the *Bluetooth*® Qualification Process

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SPECIAL INTEREST GROUP