

# MyChron4 eBox Extreme

## Quick Guide



## Introduction

eBox Extreme the external expansion module that adds your **MyChron4** the possibility of sampling data coming from three analogue inputs. Besides speed, two temperatures, internal accelerometer, RPM and beacon, **eBox Extreme** supports steering angle potentiometers, throttle and brake potentiometers as well as 0-100 sensors for your custom measurements.

**eBox Extreme** can be connected to **GPS Module**, **LCU-ONE** Lambda controller and **DataKey** to transfer data on a PC and analyse them with the powerful **Race Studio 2** free software that comes with the kit and can also be downloaded from [www.mychron4.com](http://www.mychron4.com).

**eBox Extreme** is the more complete tool for a professional analysis of the kart.



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## 1 – Start up

Once the **eBox** connected, please switch **MyChron4** on. The screenshot here below appears. It confirms that the two devices are correctly connected and **eBox** is ready.

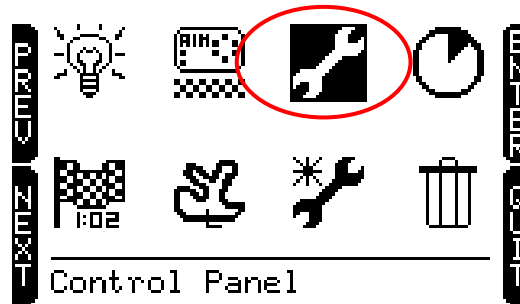
```

AIM MyChron 4 Extreme
MYCHR4 vXX.XX
EXTREME vXX.XX
S.N. 200125 EU Vers.
www.mychron4.com
  
```

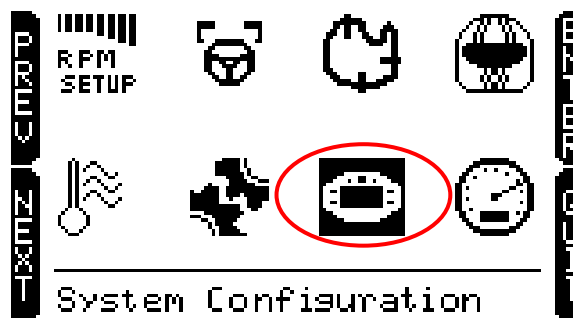
## 2 – Language setting

If **eBox Extreme** is connected to **MyChron4**, language menu is replaced by potentiometers menu. To change the language, please follow this procedure:

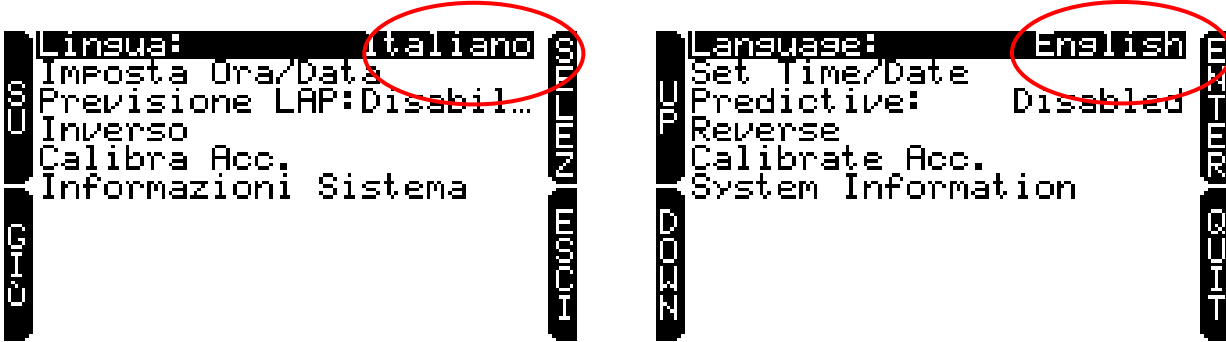
- enter the main menu pressing “MENU/<<” button
- the screenshot below appears



- select “Control Panel”
- confirm pressing “MEM/OK” button



- select “System Configuration”
- confirm pressing “MEM/OK” button



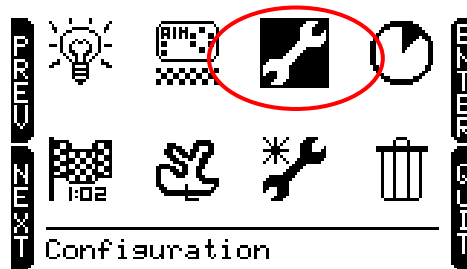
- Now, pressing repeatedly “MEM/OK” button, you will scroll language menu and select the one you want to set among Italian, Dutch, French, German, Japanese, Spanish, Sweden and English.
- When your menu appears in the desired language, press “ON/VIEW” to confirm and come back to previous menu.

### 3 – Analogue channels configuration

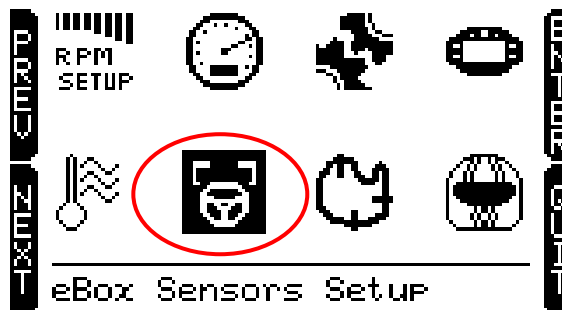
Connecting **eBox Extreme** to **MyChron4**, some voices will be added to the logger main menu so to allow you to configure the sensors and save changes.

Analogue channels configuration procedure is as follow:

- enter main menu pressing “MENU/←←” button



- select “Configuration” and confirm pressing “MEM/OK” button
- the screenshot shown below appears



- select “eBox Sensors Setup” and confirm pressing “MEM/OK” button.

```

Channel 1: Steer
Channel 2: Throt
Channel 3: PresBrk
Pressure Unit: PSI
View eBox Sensors
  
```

- now you can set each channel as you like; select the channel you connected the sensor to, using “MENU/<<” and “>>/OFF” button.
- press “MEM/OK” button to select the kind of sensor you installed on that channel; available options are:
  - Throt – Throttle Potentiometer
  - PotBrk – Brake Potentiometer
  - PresBrk – Brake Presssure
  - Steer – Steering angle potentiometer
  - 0-100 – Generic sensor for custom measurement

```

Channel 1: Steer
Channel 2: Throt
Channel 3: PresBrk
Pressure Unit: PSI
View eBox Sensors
  
```

```

Channel 1: Steer
Channel 2: Throt
Channel 3: PresBrk
Pressure Unit: PSI
View eBox Sensors
  
```

- scroll the menu until you reach “Pressure Unit” to set sensor unit of measure; available options are BAR and PSI
- having already selected the potentiometers you can now scroll until “View eBox Sensors” and confirm pressing “MEM/OK” button.

```

eBox Sensors
Steer 99 %
Throt 22 %
PresBrk 504 PSI
  
```

the system will show ON LINE sensors immediate values:

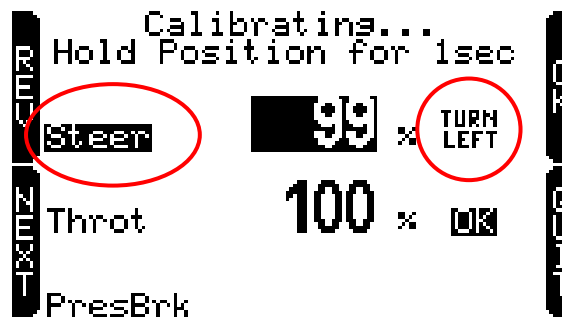
## 4 – Sensors Management

Steering angle potentiometer as well as throttle and brake ones. need to be calibrated:

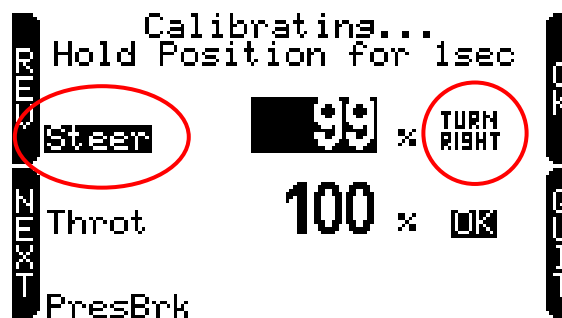
- when the message “CAL” appears top right on the display
- press “MEM/OK” button to start sensor calibration
- to switch from the calibration of one sensor to the calibration of the following one, press “MENU/>>” button.

### 4.1 – Steering angle potentiometer

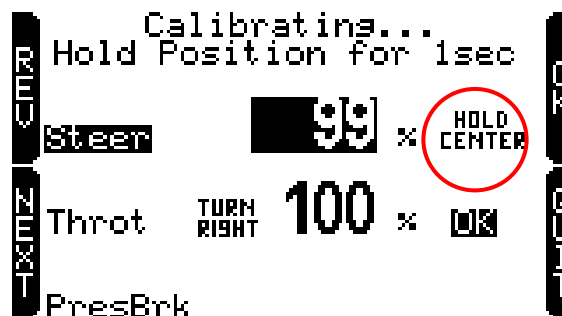
To calibrate steering angle potentiometer:



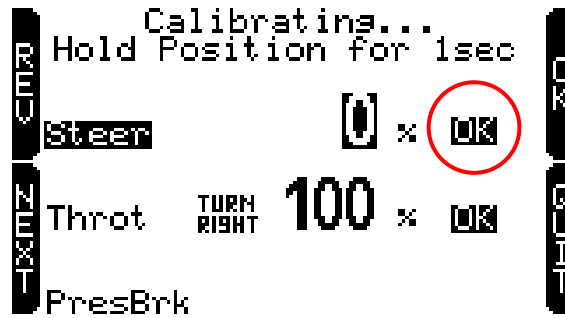
- wait until the display shows “TURN LEFT”
- turn the steering wheel completely left and hold the position for at least 1 second;



- afterwards the system will show “TURN RIGHT”
- turn the steering wheel completely right and hold the position for at least 1 second.



at the end the system shows “HOLD CENTER”: place the steering wheel in its center position and hold the position for at least one second.



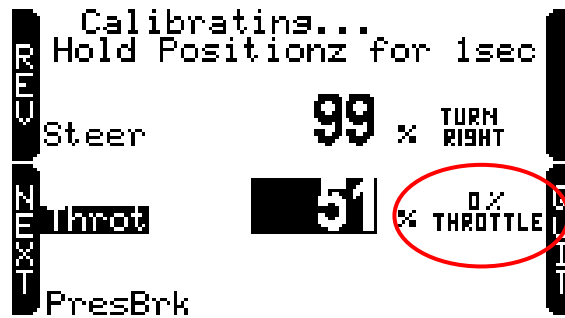
- When the system learnt the three points the system will show “OK”.

To reverse the sign of the calibration, press “MENU/←” button.

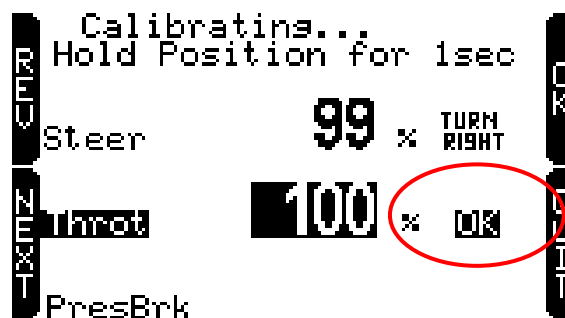
To switch from the calibration of one sensor to the calibration of the following one (if necessary), please press “→/OFF” button.

#### **4.2 – Throttle and brake potentiometer**

In the same page where you calibrate steering wheel potentiometer you will calibrate throttle and brake potentiometers (depending on the sensor you want to install).

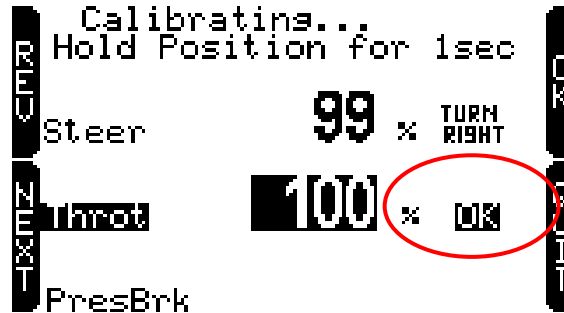


- starting the calibration you see 0% THROTTLE.
- leave the throttle in its zero position for at least one second.



- then press strongly the throttle and hold it pressed for at least one second
- during calibration start and end travel position should be held for at least one second.

When the system learnt start and end travel position “OK” appears beside the calibrated sensor, as shown below.



To reverse calibration sign press “MENU/←” button

To switch to the calibration of the following sensor (if necessary) press “→/OFF” button.

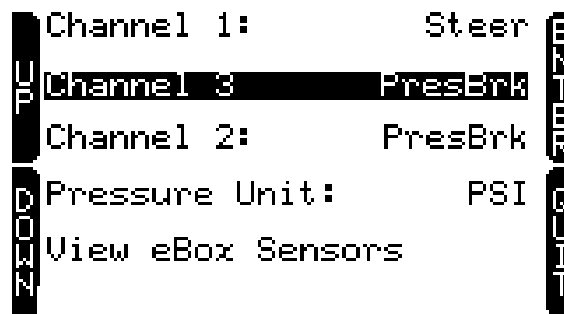
Once all the potentiometers calibrated, please confirm pressing “MEM/OK” button to save the calibration.

The screenshot shown below appears.



### 4.3 – Brake pressure sensor

In sensors page select “PresBrk” sensor and the related unit of measure, BAR or PSI:



Brake pressure sensor needs no calibration.

Selecting “View eBox Sensors”, pressure value appears with no additional configuration.

### 4.4 – 0-100 sensor

This option is intended only for expert users that wish to use custom sensors.

Value assignment follows this calibration curve:

0 counts            0 Volt

100 counts        5 Volt

This calibration curve too is already set and needs no calibration.

Please note: if you wish to connect custom sensors please pay attention to their power value:

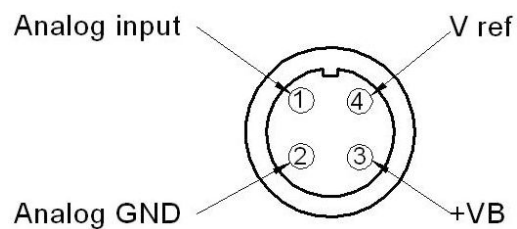
**VB** is reference power value:

- for internal power, VB will be not higher than 9V battery;
- for 12 V external power VB will have the same value of external power (12V).

**Note:** to correctly use custom sensors always refer to their user manual and to their datasheet the manufacturer usually provides you with.

## 5 – Pinout

4 pins female Binder connector pinout – Analogue Channels CH1 – CH2 – CH3



**Note:** this quick guide has to be considered as an integration of **MyChron4 eBox** user manual. Always refer to that documents for anything not expressly explained in this tutorial.