

DAKTON

μBOX

User Manual



DAKTON μ BOX: compact data logger and sensor

μ BOX is a sensor and a data logger together. It records data processed by DAKTON DASHBOARD with the addition of lateral and longitudinal accelerations. Together with data analysis software **DATAVIEW** it offers a very compact and simple way of monitoring performance of your engine, chassis and driver.

μ BOX CHARACTERISTICS:

- Max sample frequency: **50 Hz with High rate setting, 10Hz with Low rate setting**
- Data memory: **4Mb**
- Max recording duration: **> 5 hours with High rate setting**
- Powered through RKS DASH unit battery for more than 30 hours battery life
- Data offload through PC USB and Bluetooth
- Size: 35 x 35 x 15 mm
- Weight: 35g
- IP 67 rated

SETTING UP YOUR μ-BOX:

There is very little to do for setting up your μ-BOX as all the channels to log are automatically recognized. However you will still need to specify the following:

- Circuit Name*
- Driver Name*
- Logging rate* (High or Low)

This information is required for the following reasons:

- Directory structure for saving data is:

c:\DAKTON\DATAVIEW\Data*Year**Circuit**Day**Driver*|*Runs data* where

Year is the year setup in your PC date at the time of your data offload

Circuit is the circuit name specified in the μ-BOX

Driver is the driver name specified in the μ-BOX

Runs data are the run data files named with progressive numbers

This data saving structure is important in order to store data in the specific order. Important is also to make sure your PC date is always correct as it's used to define the directory name.

Read guidelines on how to install the USB cable (*Installation and setup USB cables UK.pdf*) that you will find C:\DAKTON\DATAVIEW\HELP once DATAVIEW will have been installed from the enclosed CD.



To connect to u-BOX once USB cable fitted

Following window will appear if connection established

μ-BOX serial number → SN00000

μ-BOX firmware → UB0107

30-OCT

FLASH OK

RESET button to clear run count manually

μ-BOX data memory status

μ-BOX logging rate

OFFLOAD button

Longitudinal and Lateral accelerometers values. Double click on each window to zero the sensors.

Total accumulated run number → 7

Number of runs still to be offloaded → 2

File Comment window to add notes before offloading the specific run

Important to know:

-When your PC date changes as a result of using the computer the day after you set up your μ -BOX you will be asked if you want to update μ -BOX date. If you choose YES your run count will be reset as the μ -BOX assumes you are starting a new day of data collection.

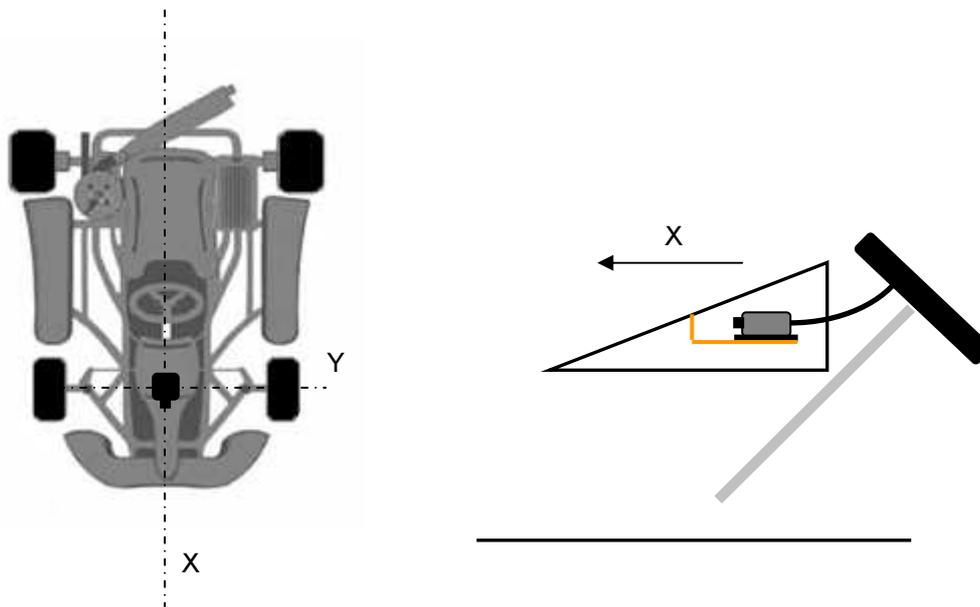
If your μ -BOX has still got data stored from previous day to be offloaded and you want to save these data then you need to answer NO, offload the remaining data that will be stored in the old date directory. Once this is completed you should connect again to your μ -BOX and this time answer YES.

For a detailed explication on how to use DATAVIEW for data analysis please refer to the specific manual.

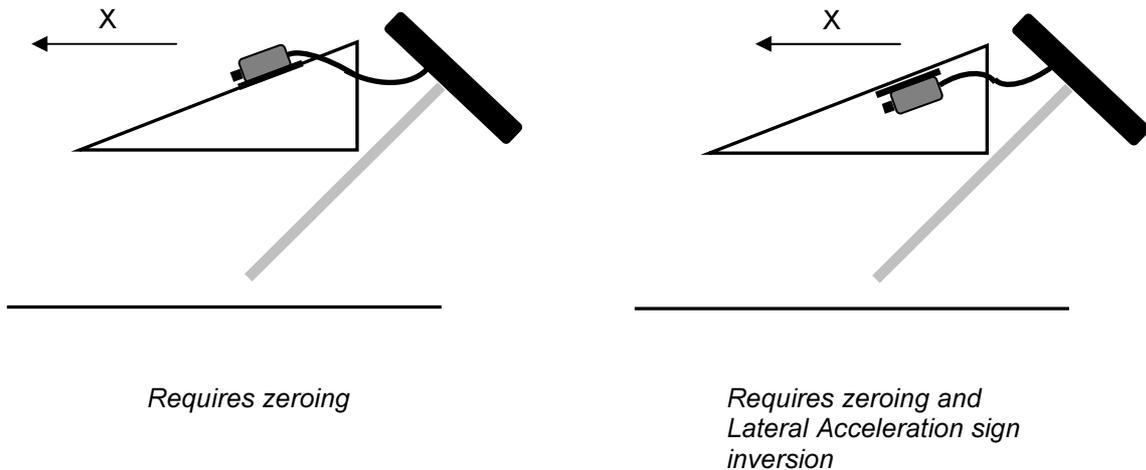
HOW TO INSTALL YOUR μ -BOX:

As your μ -BOX contains accelerometers it's very important to fit it correctly on your chassis. DAKTON provide a specific bracket to help positioning the device correctly.

Ideally your μ -BOX should be fitted horizontally to the ground, with the offload connector forward and μ -BOX logo facing upward. A suitable position is shown below:



Please consider that if you fit your μ -BOX with a different orientation you may affect the possibility to be able to plot your circuit correctly. The minimum requirement is to make sure the lateral accelerometer is oriented along the Y axis shown above. You can still fit the box upside-down with the offload connector facing forward but in this case you will have to invert A_y while plotting your circuit.



BLUETOOTH CONNECTIVITY WITH μ-BOX

Bluetooth connectivity is available in addition to the USB cable one. In this case the μ-BOX will include a class 2 Bluetooth module that allows your PC to discover the device as "μBOX".

Bluetooth connection range can vary from few meters up to 30 depending on positions and obstacles between your PC and your μ-BOX.

Make sure each Bluetooth μ-BOX you have has been setup as COM port in your PC.

Within DATAVIEW System Setup create a connection for each port (or for the ones you want to use) and name each connection differently (for example you can assign to it its driver name).

In order to be able to connect to your μ-BOX through Bluetooth:

- Make sure the DASHBOARD at which the μ-BOX is connected is powered. (μ-BOX will not respond if the DASHBOARD is switched off).

- Make sure to be in a strong Bluetooth signal range

- Access Connection to Logger and select the Connection Name related to that μ-BOX within the list of available connections.

If while PC is connected to your μ-BOX the DASHBOARD powers down, once you will exit the connection the μ-BOX will stay powered for further 20 seconds. This helps avoiding having to power on the DASHBOARD in case you want to connect again.

Once connected DATAVIEW will behave exactly the same as in the case of a cable connection.

Due to the variability of an RF connection compared to a cable one we have implemented different levels of data checks to avoid corrupted data to be offloaded and saved (see list of error messages below).

LIST OF MAIN ERROR MESSAGES:

NO ANSWER FROM LOGGER: your PC cannot connect to your μ-BOX either due to Bluetooth COM not being configured correctly or RF coverage issues.

CHECK ID ERROR: While you have been able to connect to your μ-BOX, the offload command has not been correctly received due to coverage issues.

CHECKSUM ERROR ABORTED OFFLOAD: While offloading a checksum error has occurred as a result of received data being corrupted. This is likely due to connection issues. Try to offload again while moving closer to your μ-BOX

N BYTES ERROR: Missing part of offloaded data. Try to offload again.

IMPOSSIBLE TO OFFLOAD, RUN WILL BE DELETED: After 5 consecutive retries of offload without disconnecting from your μ-BOX the data run will be cancelled to allow proceeding with the following.

NO REFRESH PARAMS: Either while programming new settings or after offloading data the parameters could not be updated due to connections issues between PC and μ-BOX. Retry offloading or repeat parameter setting.

RESET ERROR: An error has occurred while resetting your μ-BOX either following a new day update or following a manual reset.