

GPS Data Logger Evo3

Firmware revision 2.5v and higher.

Description:

The Evo3 data logger is a simple-to-use product that records position/time track and event data from an integrated GPS receiver for later download to a PC via USB. Simply install the battery, switch ON, and record data.

Features:

- Simple operation: ON-OFF switch.
- Five separate event buttons on front panel.
- Each event button has a unique identifier field in the output data.
- Non-volatile memory preserves data for up to 10 years.
- Power from 9V Alkaline/Lithium battery or external 12-24V
- Great for handheld/mobile data gathering
- Sample rate programmable.
- Memory saving Automatic Log function.
- Programmable 4-character Identification/serial.
- Downloads data to your PC in csv text format.
- Easy to use Windows based download software.
 - Ozi Explorer Track File support
 - Ozi Explorer Event File Support
 - Ozi Explorer Waypoint File Support
 - GPS Exchange (GPX) file support

Do This First!

Install USB Drivers and Download Software:

The USB drivers *must* be installed before plugging the Evo3 into your computer.

USB Driver Installation – Important!

To install the USB drivers, plug the supplied USB flash drive into a spare USB port. Open file explorer, locate the USB flash drive, go to the 'USB' directory and double-click on CDM212364_Setup.exe... Follow the prompts to install the USB drivers.

“Datalogger Download” Software Installation:

To install the download software, plug the USB flash drive into a spare USB port. Open file explorer, locate the USB flash drive, go to the 'DataloggerDownload' directory and double-click on Setup.exe. Follow the prompts to install the Datalogger Download software.

Ensure that no other applications are running while you install this software. Shared files may not install correctly if other applications are running during the Install process.

When installing under Windows 7-10, ensure you are in Admin mode, and make the installation available to 'all users'. If the installation asks about compatibility mode, select 'XP compatibility'

Evo3 is Simple to use:

- Switch ON to record data
- Switch OFF to save power and/or download data

Evo3 Quick Start:

To get up and running fast:

- 1) Install the 9V battery and close the battery compartment.
- 2) Go outdoors with a clear view of the sky.
- 3) Click the On-Off switch to the ON position.
- 4) Observe the red LED indicator flashing.
Long flash at first while the GPS searches for satellites.
Short flash once, the GPS has a position fix.
Short flash twice, the position has been saved.

Once the GPS has a position fix, pressing any of the 5 event buttons will save an event (waypoint)

Downloading your data:

- 1) Turn the On-Off switch **OFF** to save power.
- 2) Connect the logger to your USB port and observe the green USB light is on.
- 3) Start the Datalogger Download software.
- 4) Once the software is connected to the logger, click the Download button on the software to begin data transfer.

Battery Installation:

Use a 9 volt alkaline battery, type MN1604, PC1604, 522, 6LR61 or equivalent.

Some lithium-ion '9V' rechargeable batteries are also suitable.

Open the battery compartment by gently pressing and sliding the battery cover towards the edge of the case.

Attach the battery clip to the battery.

Place the battery in the battery compartment. Ensure that the battery clip wires are clear of the DIP switches and push buttons.

Stored data will not be lost if battery is disconnected. Data is retained in non-volatile memory

External Power:

External 12-24 volt power can be supplied via the DC barrel connector.

When using external power, the 9V battery is not required, but you can leave it in if you want.

The 9V battery may be safely left in place when external power is applied.

The 9V battery will not be discharged when 12V external power is applied.

On-Off Switch:

The On-Off switch is used to enable the internal GPS receiver.

Switch ON: Receiver is enabled. Data will be received and stored in logger memory.

Switch OFF: Receiver is disabled. Data can be downloaded to your computer with the switch OFF.

Red LED Indicator:

The red LED indicator flashes when data is received. The number of flashes gives you information about logger status:

ONE flash:	Data has been received.
TWO flashes:	Data has been received and saved.
THREE flashes:	Data has been received and battery is low.
FOUR flashes:	Data has been received and memory is more than 88% full.
FIVE flashes:	Data has been received and memory is full. New data will not be saved; existing data will be protected.
ONE LONG Flash:	Invalid GPS data received. Most likely the GPS has not locked-on to satellites. This is normal during start-up time.
ON constant:	Download in progress.

Note: The LED will only flash if data is received. This is because the logger goes into power-save mode if there is no data, in order to improve battery life and protect stored data.

Green LED Indicator:

The green LED indicator is located beside the USB socket and will illuminate when the USB is connected to your PC and recognised by the installed USB drivers.

Event Buttons: (5 on front panel)

There are 5 event buttons, each of which will save a separately identified 'waypoint' or 'event' when pressed.

Pressing an Event button will save position and time data regardless of the DIP switch settings.

The Download Software can save Event Button presses in separate Ozi Explorer Event and Waypoint files if required.

During data download, pressing event button #1 will cancel the download. This may be useful in the event of computer malfunction. Data stored in the logger will not be lost.

DIP Switches: (inside battery compartment)

Use these switches to select memory saving and data logging options.

DIP switches may be changed 'on the fly' while the datalogger is operating.

Helpful Tip: You can use a corner of the battery compartment lid to operate the DIP switches.

DIP switch 1: Speed Check

Switch ON to activate Speed Check. In this mode, the logger will not save at speeds below 2 knots (3km/h). This reduces 'rats-nest' (due to position drift) when the GPS is stationary.

Results in significantly cleaner track-logs and saves memory. Good for vehicle-based use.

Switch OFF to log at any speed including zero knots. Good for walkers.

DIP Switch 2: Automatic Save

Switch ON to activate Automatic Memory Save. This intelligent feature greatly reduces memory usage with minimal loss of track detail. You may want to experiment with this feature to find out if it suits your requirements.

DIP switch 1 has higher priority than this switch. Therefore if DIP switch 1 is ON, speed must be higher than 3 km/h before data will be saved.

DIP Switch 3: Timed Save

Switch ON to log pre-set intervals. (Default 10 seconds) Saves memory.

Switch OFF to log every valid RMC sentence.

DIP switches 1 & 2 have higher priority than this switch. If either or both are ON, conditions for those switches must be met before timed save will occur. If conditions are met during the pre-set time, data will be saved at the end of the pre-set time.

DIP Switch 4: Normal/Date Save

Switch ON to save position PLUS time and date. (Uses more memory)

Switch OFF to save position data only. (Normal mode saves memory)

Also see the Event buttons.

DIP Switch Settings:

Here are some recommended DIP switch settings for various activities:

	Switch 1	Switch 2	Switch 3	Switch 4	
	Speed	Auto	Timer	Timestamp	
Vehicle	ON	ON	OFF	ON	
Walking	OFF	ON	ON	ON	
Row Boat	OFF	ON	ON	ON	
Boat >4 knots	ON	ON	OFF	ON	
Mapping	OFF	OFF	OFF	ON	Best track detail
Long Trip	ON	ON	ON	ON	
Long Duration	ON	ON	ON	OFF	Best Memory Life
As Supplied	OFF	OFF	OFF	ON	Best track detail

Pushbuttons: (inside battery compartment)

Press BOTH buttons at once to reset the logger and clear all memory.

USB Cable:

USB Type-B cable. Connect one end to the logger and the other end to a USB port on your PC.

Map Datums NOTE:

The positioning data used by the internal GNSS receiver is WGS84 datum.

Specifications:

Storage Modes/capacities:

NORMAL: Store Latitude and Longitude only
540,000-point capacity
TIMESTAMP: Store Latitude, Longitude, Time (UTC), Date
393,000-point capacity

When memory is FULL, new data will not be stored: existing data will be retained.

Indicator:

Red LED flashes when data is received.

Electrical:

External Voltage: 10-30V DC, barrel connector, 2.5mm centre pin (+).
Supply Current: Active (GPS ON) 20mA Avg with 9V supply
Standby (GPS OFF) 30uA Avg
Main Battery: 9V Alkaline type MN1604, PC1604, 522, 6LR61 or equivalent.
Some lithium-ion '9V' batteries are also suitable.
Battery Life: Approx. 20 hours GPS operation
Memory Backup: Nonvolatile Memory, 10-years with no power.

Interface:

USB-B connector for data download.
USB-Virtual com port (VCP)
Compatible with USB VCP drivers from FTDI

Cables:

12V Power cable, for in-vehicle operation.
USB-A to USB-B cable for data download.

Physical:

Dimensions: 66 x 140 x 28 millimetres
Weight: 200 grams including battery
Colour: Black
Case Material: ABS

Stored Data:

Data is stored and downloaded in a simple Comma Separated Variable (csv) text format. The Datalogger Download software can convert this data into several commonly used formats or the csv data can be loaded directly into a text editor for customising.

Logging mode is controlled by DIP switch 4.

Normal: DIP switch 4 OFF

CR/LF

A(V)(a)(v),ddmm.mmm,N(S),dddmm.mmm,E(W) CR/LF

A(V)(a)(v),ddmm.mmm,N(S),dddmm.mmm,E(W) CR/LF

EOT

header, latitude, longitude

Date & Time: DIP switch 4 ON, OR Event button pressed

CR/LF

A(V)(a)(v),ddmm.mmm,N(S),dddmm.mmm,E(W),hhmmss,ddmmyy,,,,,e1,e2,e3,e4,e5 CR/LF

A(V)(a)(v),ddmm.mmm,N(S),dddmm.mmm,E(W),hhmmss,ddmmyy,,,,,e1,e2,e3,e4,e5 CR/LF

EOT

header, latitude, longitude, time(UTC),date,,,,,event1, event2, event3, event4, event5

This Datalogger supports five separate event buttons on the front panel. Each button has a unique identifier field in the output data as shown above.

'0' field indicates an INACTIVE event button

'1' field indicates an ACTIVE event button

The line header indicates a button press:

Uppercase 'A' or 'V' indicates that no buttons are pressed.

Lowercase 'a' or 'v' indicates that one or more buttons are pressed.

The Datalogger incorporates memory saving features such as selectable save interval and speed masking. Pressing any event button will over-ride the memory saving features and save a point instantly.

Notes:

A=Valid data sentence, GPS OK

a=Valid data sentence, GPS OK, Event button pressed.

V=First valid sentence after 1 or more invalid sentences. Indicate track gaps.

v=As Above. Event button pressed.

Send ESC to cancel download

Press Event button #1 to cancel download

Warranty:

This product is warranted to be free from defects in materials and workmanship for 90 days from the date of purchase. The manufacturer will, at its sole option, repair or replace any components that fail under normal usage during this period. The Customer is responsible for any transportation costs. This warranty does not cover failures due to abuse, misuse, accident, tampering or unauthorised alteration or repairs.

In no event shall the manufacturer be liable for any direct, indirect or consequential damages, whether resulting from the use, misuse, or inability to use this product, or from defects in the product.

Notes:

Due to ongoing product development and improvement, this user manual and specification is subject to change without notice.