

WinFrog Device Group:	GPS
Device Name/Model:	MX1107
Device Manufacturer:	Leica Geosystems Inc 23868 Hawthorne Boulevard Torrence, CA 95050 USA Tel: (310) 7915300 Fax:(310) 791-6108 E-mail: info@leica-gps.com
Device Data String(s) Output to WinFrog:	ASCII data string with latitude, longitude, speed, COG and time from filter.
WinFrog Data String(s) Output to Device:	N/A
WinFrog Data Item(s) and their RAW record:	POSITION 303

DEVICE DESCRIPTION:

This is a driver designed to read the data described above, as output from the MX1107 GPS receiver. It should be noted that there is no status indicator in the data string from the MX1107 to indicate to WinFrog whether or not the position received from the unit is a DGPS position or a single point GPS position.

DEVICE CONFIGURATION INSTRUCTIONS

WINFROG I/O DEVICES > EDIT I/O:

Baud Rate: 2400

Data Bits: 8

Stop Bits: 1

Parity: none

A dialog appears in which to change the name of the device if desired.

WINFROG I/O DEVICES > CONFIGURE DEVICE:

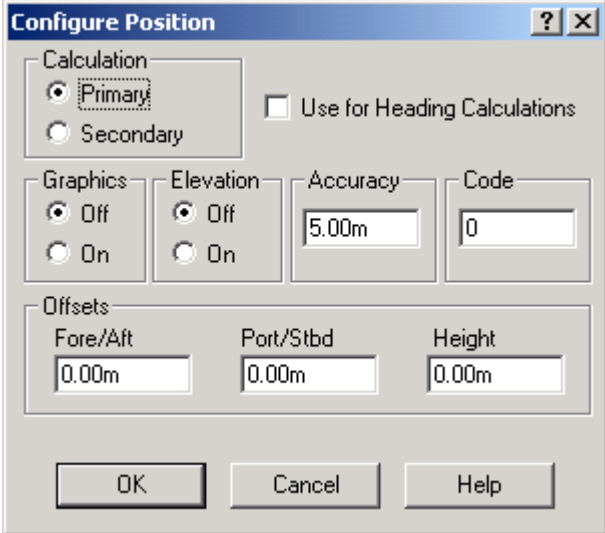
No configuration is required at the I/O Device window level.

WINFROG VEHICLE > CONFIGURE VEHICLE DEVICES > DEVICE DATA ITEM > EDIT:

Adding the MX1107 device creates the POSITION data item. Once the data item has been added to the vehicle, it must be edited to suit the application.

Data item: GPS, MX1107, POSITION

The Position data item must be edited once it is added to a vehicle's device list. Highlight the POSITION data item in the vehicle's device list and click the Edit button. The Configure Position dialog box appears as seen below.

The image shows a 'Configure Position' dialog box with a title bar containing a question mark and a close button. The dialog is organized into several sections. The 'Calculation' section has two radio buttons: 'Primary' (which is selected) and 'Secondary'. To the right of these is a checkbox labeled 'Use for Heading Calculations'. Below this is a 'Graphics' section with 'Off' (selected) and 'On' radio buttons. Next to it is an 'Elevation' section with 'Off' (selected) and 'On' radio buttons. To the right of these are two input fields: 'Accuracy' with the value '5.00m' and 'Code' with the value '0'. Below these is an 'Offsets' section containing three input fields: 'Fore/Aft' with '0.00m', 'Port/Stbd' with '0.00m', and 'Height' with '0.00m'. At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

Calculation:

Set the Calculation selection to Primary or Secondary. Devices set to Primary calculation are used to provide a vessel position. Note that more than one Primary positioning device can be added to a vehicle's device list; data from these devices will be combined in a weighted mean solution. (See the paragraph on Accuracy below for more on the weighting of Primary calculation device data).

If the Calculation type is set to Secondary, WinFrog will simply monitor the device's data. WinFrog will not use the position data from the device in the final solution of the vehicles' position.

Note: In the case of Primary device failure, WinFrog will not automatically use the Secondary devices for the vessel's position computation. Instead, the vehicle's positioning will go to dead reckoning (if dead reckoning is turned on). You must manually change a Secondary device to Primary in order for the data to be utilized.

Use For Heading Calculations:

Select this checkbox if the device is to be used in conjunction with another GPS device for determination of the heading of the vessel. The vessel's heading will be derived by the inverse of the GPS antenna coordinates.

Graphics:

If On is selected, a labeled square will show the raw (offset but unfiltered) location of the GPS antenna in the Graphics and Bird's Eye windows. This provides a means of comparing raw device and filtered vehicle positions.

Elevation:

Setting the Elevation option to On will result in the elevation determined by GPS to be used as the elevation of the vessel referencing the GPS (WGS84) Ellipsoid. The sounder data recorded in WinFrog's .RAW data files will not be affected.

This option is meant only for those applications where there is no fixed vertical reference (i.e. mean sea level), such as on a river. For acceptable results, this option requires the use of high accuracy "RTK" GPS data.

Accuracy:

The Accuracy value entered provides WinFrog with the expected accuracy of the position from this device. This value is used in the weighting of this device compared to other positioning devices that may be added to the vehicle's device list. The smaller the value entered, the more accurate it is considered to be, and hence the more weight that will be applied to the device's data. The Accuracy parameter can be changed from the suggested values, although changes should be made with caution, as they will affect the final filtered position of the vehicle.

Code:

This field is used when the GPS data is being received by a remote GPS receiver connected via telemetry link. If this is the case, set the Code to coincide with the code parameters associated with the GPS unit being used.

For all other applications, the Code entry must be set to 0.

Offsets:

Offsets are required to associate the GPS antenna position with the vessel's Common Reference Point (CRP). The offsets are applied *from* CRP (of the vehicle) *to* the GPS antenna location.

Forward Offsets are entered as positive values.

Aft Offsets are entered as negative values.

Starboard Offsets are entered as positive values.

Port Offsets are entered as negative values.

Height Offsets are positive upwards. (It is suggested that the vessel's Height origin should be at the water line.)

TELGRAM SPECIFICATION:

The ASCII input string WinFrog looks for is:

characters 21 - 32: latitude
characters 34 - 45: longitude
characters 54 - 58: speed
characters 59 - 63: course over ground
characters 65 - 67: time from filter

Note: There is no status indicator in the input string – i.e. WinFrog does not check the input position to see if it is a DGPS position or single point.