

# TrackMaker38MK2 data logging system *for Windows Mobile*

The **TrackMaker38MK2** system for Geonics EM38-MK2 consists of two programs: field data acquisition component (Nav38MK2) and the Windows 10/7 based data processing software (TrackMaker38MK2).

**TrackMaker38MK2** software works with virtually any GPS receiver supporting NMEA messages: GGA, POS, GLL, LLQ, LLK, GGK, and Leica and Trimble Robotics Total Stations, and collects EM38-MK2 and GPS data into one file simultaneously, while providing a graphical view of the collected GPS positions to better control the survey line direction. A profile view of the collected EM38-MK2 data is provided for the improvement of field data quality analysis.

It also provides a view of any previously collected data files with a Geonics instrument that is supported by the **TrackMaker38MK2** software and will assist the operator to return to previously collected stations.

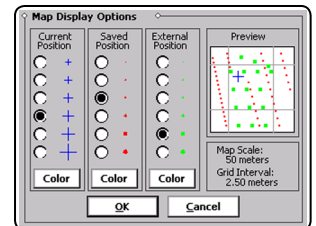


The **TrackMaker** system will allow you to perform surveys faster by covering sites with uniformly spaced lines while avoiding skipping areas, and preventing the potential overlap of survey lines. And with these features also comes the simultaneous full control of the electromagnetic instrument output, data quality, current settings, as well as GPS receiver parameters.



In addition to standard acquiring EM38 data the **TrackMaker38** system will convert your Windows Mobile device to a stand-alone logger for GPS/DGPS/RTK positions collection and navigation, taking away the need to purchase additional expensive GPS components.

In the event of any field obstruction you can resume your survey line at a precise location, without using conventional methods of positioning (tapes, stakes, etc.). You can complete your survey even with low visibility or darkness and still maintain full control over the area of coverage and the quality of electromagnetic instrument readings.



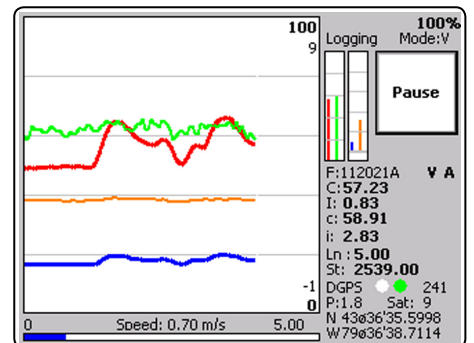
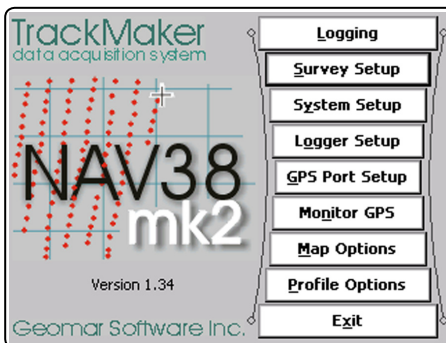
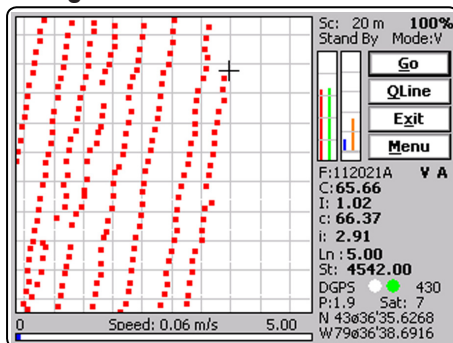
*Selecting map display options*

*also available for former Geonics EM38 models*

## Navigation Mode

View from Nav38MK2 program in horizontal display mode

## Profile Mode



GEOMAR SOFTWARE INC.  
Tel: 905.306.9215

E-mail: [geomar@geomar.com](mailto:geomar@geomar.com)

*Tools for the Field Geophysicist*

[www.geomar.com](http://www.geomar.com)



## Nav38MK2 Features (data acquisition program)

### Display functions:

- Displays locations of logged GPS positions and current location of an operator in real time while in Navigation mode
- Selectable colours and size of current cursor position and logged positions, and colour and thickness of profiles in Profile mode
- Scale of map and grid interval is user specified (meters or feet) and it scrolls automatically once the end of the screen is reached
- EM38-MK2 conductivity and Inphase data (both separations) is displayed with moving graphic bars and in numeric form, EM38-MK2 dipole mode, component and instrument range also monitored
- Current GPS antenna position in Latitude/Longitude, type of differential corrections (DGPS, RTK, Phase), PDOP or other equivalent parameter (depends on NMEA used), number of satellites, and number of GPS positions in the file
- Indicates when the user specified GPS warning mask is surpassed
- Monitors and alarms when the EM38-MK2 is OFF or disconnected
- Actual speed of the system is continuously displayed
- Display of stations from other TrackMaker files entered as an external file allow you to repeat survey layout (i.e. with another instrument), fill in new survey lines, or to re-start survey at proper location
- Positions of interpreted anomalies which are entered as an ASCII file allow you to navigate to points of interest

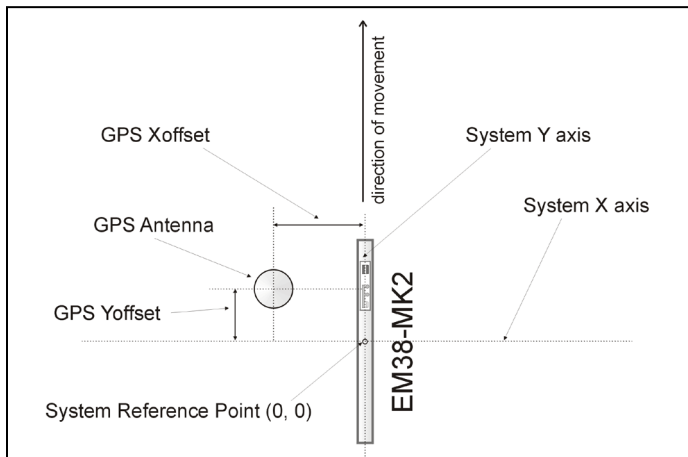
### Survey parameters:

- Survey modes supported: Auto and Manual (optional integration)
- Integration of readings available in Manual mode (up to 100 readings per station)
- Maximum rate of EM38-MK2 data acquisition is 20 Hz
- New Line, New Station, Comment entry
- Change of scale in Navigation and Profile modes at any time
- Selectable coordinates (Geodetic or UTM) in horizontal mode

### GPS functions:

- Configuration of logger serial port to accommodate any GPS settings
- GPS output monitoring
- Support for NMEA messages: GGA, GGA/GSA, GLL, POS, LLQ, LLK, GSK, and Leica and Trimble Robotics Total Station stream
- Offset for GPS antenna in any direction, applies to any type of survey (instrument carried by the operator or towed by vehicle)
- Option to act as a stand-alone GPS logger which allows data to be collected in GXY file format (compatible with any TrackMaker and RTmap program)

## Add navigation capabilities to EM38-MK2 surveys



Example of specifying system geometry for EM38-MK2 and GPS antenna

## TrackMaker38MK2 Features (data processing program)

### Position EM38-MK2 readings and create XYZ file based on standalone Nav38MK2 data file:

- Apply GPS antenna offset in any direction (as entered in the field with option of correcting this parameter during data processing)
- Include elevation data with correction for antenna height
- Filters the quality of positioned data based on GPS parameters as PDOP (or equivalent) and the degree of differential corrections
- Further enhancement of the collected EM38-MK2 readings position is obtained by specifying the GPS Time Gap and GPS Minimum Interval.
- Choice of coordinates in generated XYZ file: Geodetic coordinates (Latitude/Longitude in degrees) or in UTM coordinates (meters, feet or US Survey Feet) in WGS1984 datum.

### Position EM38-MK2 readings and create XYZ file based on external GPS file (This function is used when real time GPS differential corrections are not available, or when further post processing of GPS data may improve positioning accuracy. It is assumed that GPS positions are logged in Nav38MK2 and in GPS logger simultaneously.)

- Apply GPS antenna offset in any direction (as entered in the field with option of correcting this parameter during data processing)
- Further enhancement of the collected EM38-MK2 readings position is obtained by specifying the GPS Time Gap and GPS Minimum Interval
- Coordinates system, units and GPS positioning accuracy is determined by a content of an external GPS file

### Miscellaneous:

- Field QC parameters (Quality Indicator, number of Satellites and PDOP) are written into the generated XYZ file
- Convert TrackMaker38MK2 files to Geonics DAT38MK2 format
- Convert TrackMaker38MK2 files to general format ASCII file
- Convert GXY file to ASCII file containing positions and elevations
- Retrieve and position field comments from TrackMaker38MK2 file
- Apply System Time Constant delay (lag) in generated XYZ file
- Transfer data file from DOS based field computer to PC
- Edit, view, and save TrackMaker38MK2 file contents