

TrackMaker38 data logging system for Allegro CX

The **TrackMaker38** system for Geonics EM38 consists of two programs: field data acquisition component (NAV38) and the Windows (XP/2000/98) based data processing software (TrackMaker38).

TrackMaker38 software works with virtually any GPS receiver by supporting NMEA messages: GGA, POS, GLL, LLQ, LLK, GGK, and Leica Robotics Total Station TPS1100/TPS1200, and collects EM38 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 data is provided for the improvement of field data quality analysis.

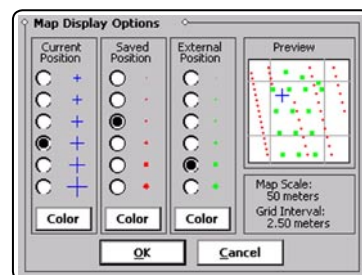
It also provides a view of any previously collected data files with a Geonics instrument that is supported by the **TrackMaker** software and will assist the operator to return to previously collected stations.



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 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



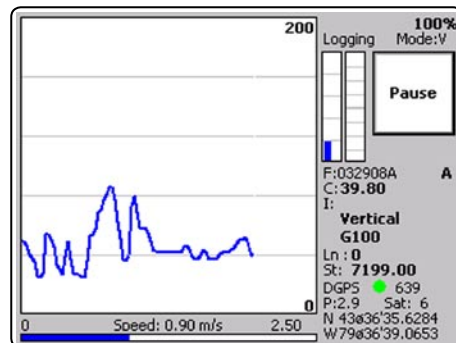
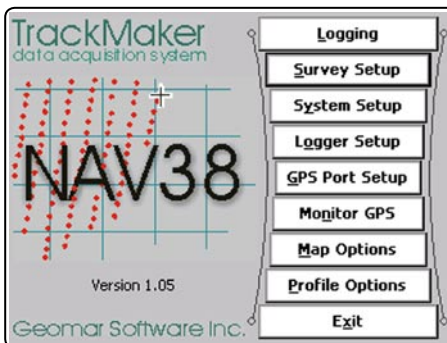
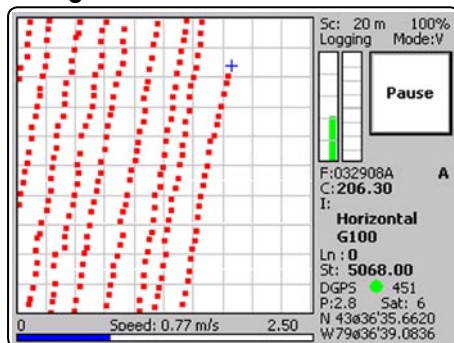
In addition to standard acquiring EM38 data the **TrackMaker38** system will convert your Allegro CX to a stand-alone logger for GPS/DGPS/RTK positions collection and navigation, taking away the need to purchase additional expensive GPS components.

also available for Geonics EM38-DD and EM38B

Navigation Mode

View from NAV38 program running on the Allegro CX Field PC

Profile Mode



GEOMAR SOFTWARE INC.
Tel: 905.306.9215
Fax: 905.276.8158
E-mail: geomar@geomar.com

Tools for the Field Geophysicist

www.geomar.com

GEOMAR
Software Inc.

NAV38 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 conductivity or Inphase data is displayed with moving graphic bars and in numeric form, EM38 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 is 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

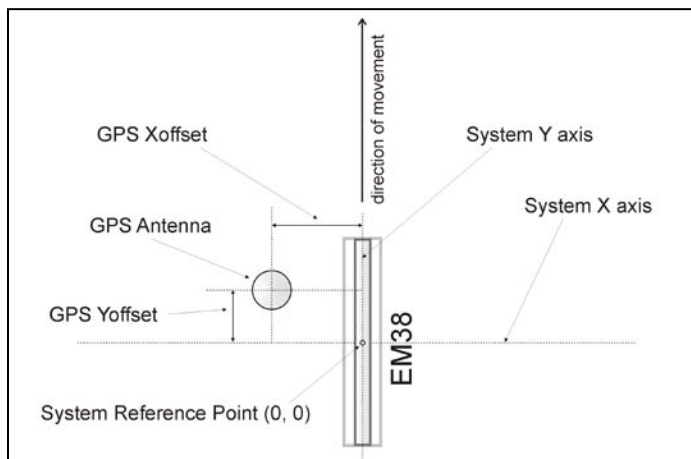
Survey parameters:

- Survey modes supported (Auto, Wheel, or Manual)
- Integration of readings available in Manual mode (up to 100 readings per station)
- Maximum rate of data acquisition is 10 Hz (assuming 1 Hz GPS output)
- New Line, New Station, Comment entry
- Change of scale in Navigation and Profile modes at any time

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, GKG, and Leica Robotics Total Station TPS1100/1200 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 (includes auto mode as well as more precise positions averaging), which allows data to be collected in GXY file format (compatible with any TrackMake program)

Add navigation capabilities to your EM38 surveys

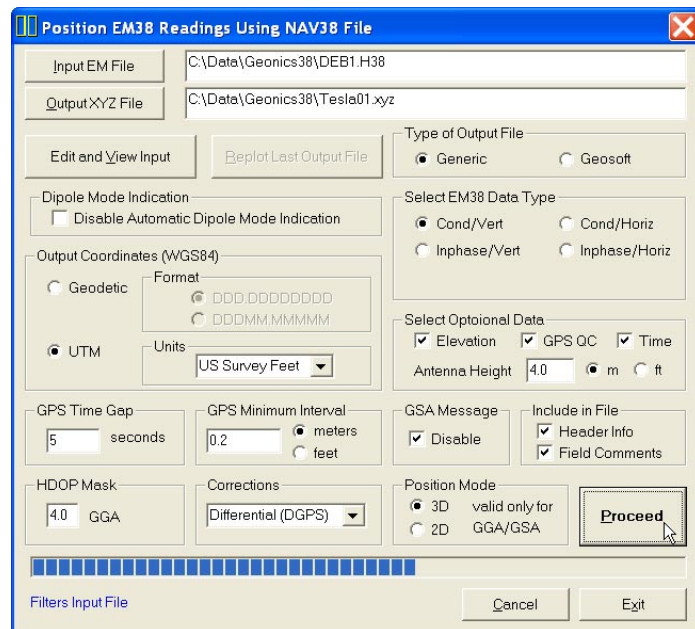


Example of specifying system geometry for EM38 and GPS antenna

TrackMaker38 Features (data processing program)

Position EM38 readings and create XYZ file based on standalone TrackMaker38 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 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, WGS1984 datum)



Position EM38 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 NAV38 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 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 TrackMaker38 files to Geonics DAT38W format
- Convert TrackMaker38 files to general format ASCII file
- Convert GXY file to ASCII file containing positions and elevations
- Retrieve and position field comments from TrackMaker38 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 TrackMaker38 file contents