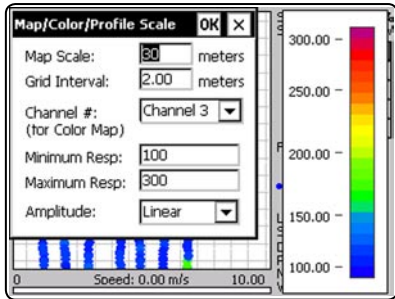


RTmap data logging & mapping system for EM61-MK2

for Allegro CX

The **RTmap** system for Geonics EM61-MK2 consists of two programs: field data acquisition component (RTmap61MK2) and the Windows 98/2K/XP and later based data processing software (RTM61MK2).



RTmap software works with virtually any GPS receiver by supporting NMEA messages: GGA, POS, GLL, LLQ, LLK, GGK, and selected Robotics Total Stations, and collects EM61-MK2 and GPS data into one file simultaneously, while providing a graphical view of amplitude (pseudo-grid), and the collected stations positions to better control the survey line direction and coverage. A profile view of the collected EM61-MK2 data is provided for the improvement of field data quality analysis.

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

In addition to acquiring EM data the **RTmap** system will convert your Allegro CX to a stand-alone logger for GPS/DGPS/RTK/RTS data collection. Just disconnect EM61-MK2 and start position site features using **RTmap** automatic, or more precise averaging mode. Purchase of any additional expensive GPS components is not necessary.



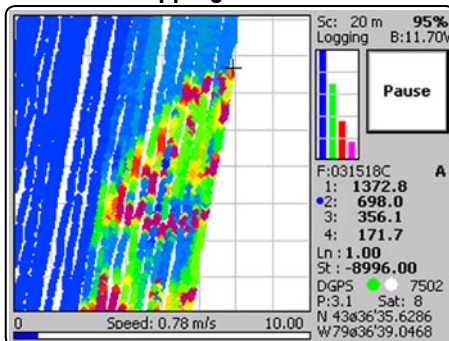
The **RTmap** system will provide unmatched real time QA/QC in the field. Viewing the displayed spatial image will also allow the user to adjust the survey speed according to where anomalies are seen. The **RTmap** will allow you to perform surveys faster by covering sites with uniformly spaced lines while avoiding skipping areas, and preventing the potential unnecessary overlap of survey lines.

And with these features also comes the simultaneous full control of the specific EM61-MK2 output, data quality, current instrument settings, as well as GPS signal quality parameters and Latitude/Longitude coordinates display.

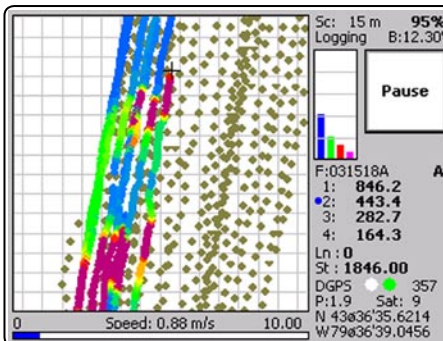
In the event of any field obstruction or any pause you can resume your survey line at a precise location, without using conventional methods of positioning (tapes, stakes, etc.). You can complete your survey even with low visibility or darkness and still maintain full control over the area of coverage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

RTmap61MK2 Display Modes on the Allegro CX Field PC

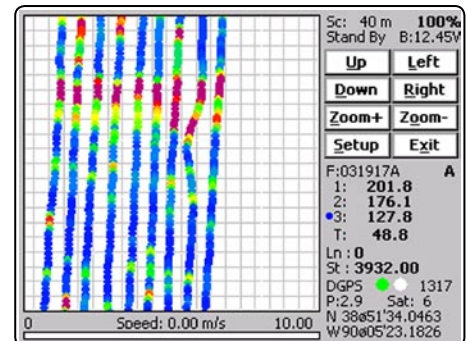
Standard Mapping Mode



Fill In Mode



Review Mode



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

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RTmap61MK2 Features (data acquisition program)

Display functions:

- Mapping mode: real time display of locations of recorded EM61-MK2 readings in form of colour scaled pseudo-grid of the selected channel and current location of an operator, the screen is updated at the rate of the GPS receiver frequency; this mode includes all functions of Navigation mode.
- Navigation mode: real time display of locations of logged GPS or EM61-MK2 positions and current location of an operator
- Profile mode: profile plot is displayed instead of a map in Mapping or Navigation mode, the display can be toggled between Profile and Mapping modes at any time during the survey
- Review mode: collected data can be reviewed in form of pseudo-grid using Zoom In and Out, and Pan function in any direction; changing step for Zoom and Pan, selection of viewed channel, specifying new scale for map as well as for the instrument range are available while using this mode
- Display of EM61-MK2 Channels 1, 2, 3, and 4 or T with moving graphic bars and in numeric form while using any display mode, instrument battery level and cable connection are also monitored
- Colours and size of current cursor position, positions dots, and colour and thickness of profiles are user specified
- Range of the instrument response and associated colour scale distribution for pseudo-grid, as well as a selection of channel to be mapped are user specified at any time during logging session
- Scale of map and grid lines interval are user specified (m or ft) and the screen scrolls automatically once the display limit is reached
- Indicator of GPS activity is provided by two highly visible green and white circles alternating with a frequency of GPS stream, they change to red when the user specified GPS Warning Mask is surpassed
- Actual speed of the system is continuously displayed
- Display of stations from other RTmap or TrackMaker (for any supported instrument) files which are entered as an external file allow you to repeat survey layout (with another instrument), fill in new lines, or to re-start survey at adequate 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)
- Maximum rate of data acquisition is 16 Hz (at 1 Hz GPS output)
- New Line, New Station, Comment entry
- Change of scale in Mapping/Navigation, Review, and Profile modes at any time
- User specified System Time Constant Delay (Latency) correction applied in real time

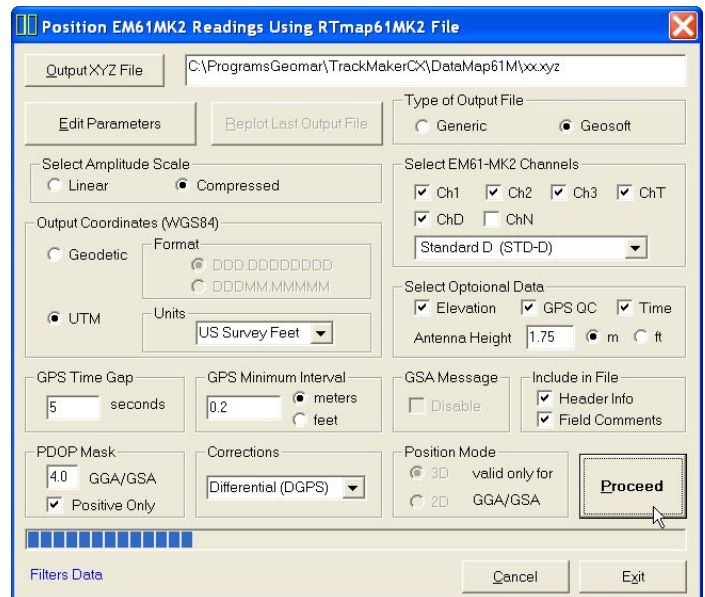
GPS functions:

- Configuration of logger serial port to accommodate any GPS settings
- Continuous GPS output monitoring and display: current position in Lat/Lon, type of differential corrections (DGPS and various modes of RTK), PDOP or other equivalent parameter (depends on NMEA used), number of satellites, and number of GPS positions in the file
- Support for NMEA messages: GGA, GGA/GSA, GLL, POS, LLQ, LLK, GGK, and selected Trimble and Leica Robotics Total Stations
- User specified GPS Warning Mask (PDOP, Quality Indicator, Satellites number), can be modified at any point during survey
- Offset for GPS antenna in any direction, applies to any mode of survey
- Option to act as a stand-alone GPS logger (includes automatic data collection or positions averaging at chosen stations), which allows data to be collected in GXY file format (compatible with any RTmap, TrackMaker, or Multi program), supports comments entry

RTM61MK2 Features (data processing program)

Position EM61-MK2 readings and create XYZ file based on standalone RTmap61MK2 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 EM61-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, WGS1984 datum)



Position EM61-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)

- 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 EM61-MK2 readings position is obtained by specifying the GPS Time Gap and GPS Minimum Interval

Position EM61-MK2 readings edited in DAT61MK2 (This function is used when RTmap61MK2 readings were converted to M61 format and processed in DAT61MK2 program)

Miscellaneous:

- Field QC parameters (Quality Indicator, number of Satellites and PDOP) are written into the generated XYZ file
- View all field parameters, edit, and save RTmap61MK2 data file
- Convert RTmap61MK2 files to Geonics DAT61MK2 format
- Convert RTmap61MK2 files to general format ASCII file
- Convert GXY file to ASCII file containing positions and elevations
- Retrieve and position field comments from RTmap61MK2 file
- Apply System Time Constant delay (latency) in generated XYZ file
- Transfer data file from DOS based field computer to PC
- View 2-D layout of created XYZ files