

MetroCart Subsurface Utility Surveyor

PRODUCT INFORMATION



Continuously applied **ePaint** is synchronized to your GIS system

The industry's first survey-grade subsurface utility locating and positioning instrument.

Combining precision RTK-GPS and advanced signal processing methods, the new **MetroCart** Utility Surveyor facilitates underground geospatial utility location with clearly stated accuracy. Underground utility lines can now be surveyed and GIS-archived with sub-decimeter accuracy, while detecting environmental distortion that results from bleed-over and return currents originating in parallel conductors. Metrotech continues building upon patented features:

- Signal Select™
- Distortion Alert™
- Forward-looking Guidance Coil™

and MyLocator™ online data services to provide an innovative solution in a compact and mobile package.



MetroCart Compact Size

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Features

- Signal Select facilitates Positive Line ID of the target line, discriminating it from other current sources including co-located lines carrying bleed-over and return currents
- Forward-looking Guidance Coil alerts for bends and "T" junctions
- Distortion Alert recognizes signal bleed-over
- Electronic paintbrush (**ePaint**) recording of the targeted utility location is continuously combined with RTK-GPS derived geospatial position. Horizontal 1- σ position accuracy to 2 cm.
- Advanced Digital Signal Processing with 2 GB recording memory (independent of system controller)
- Selected frequencies between 250 Hz - 1000 Hz support surveying over long distances
- Tilt and roll sensors compensate for uneven grade
- Synchronization to GIS systems via MyLocator export, or ASCII file export of geospatially referenced position of the target utility position at each time interval (up to 5 Hz)
- On-board gyroscope, 3-axis digital compass, and wheel odometers support accurate dead-reckoning of utility position in the absence of RTK-GPS
- GSM or 3G enabled wireless communication to MyLocator data server, and for incoming RTK correction data.
- 24-bit sampling supports target detection even in high powerline interference environments

Standard Equipment

Collapsible cart-based receiver and sensors, i5000 10W transmitter, dual frequency GPS rover with compatible antenna, dead reckoning positioning system, rugged tablet PC, carrying case, battery charger, and user manual

Standard Software

Vector mode analysis, GPS RTK (real-time) position accuracy to 2 cm (with compatible base station), data export to Excel (.csv files)

Optional Software

MyLocator server based statistical confidence determination, reporting, data warehousing, and export to common GIS data formats

Licensing

Single software license subject to an annual maintenance fee that includes technical support, software updates, and MyLocator access. GSM or 3G data plan for the MetroCart tablet PC is required and not included.

Optional Equipment

i5000 Line Locating receiver, HPL-50 portable 50W Signal Select transmitter, 4" (100mm) Signal Select Clamp for inductive clamp hookups, UHF radio link for rover access to base station correction data.

SERVICE CENTER, SALES AND TECHNICAL SUPPORT INFORMATION

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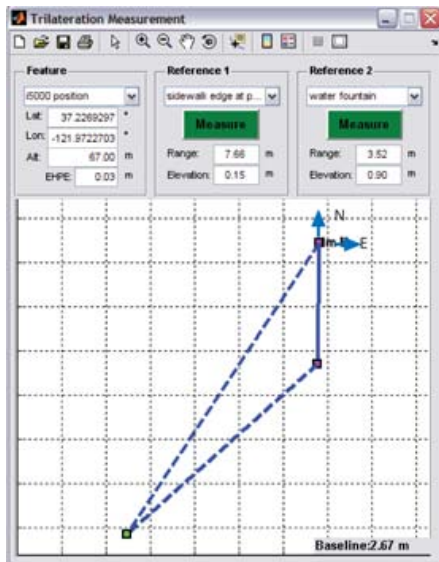
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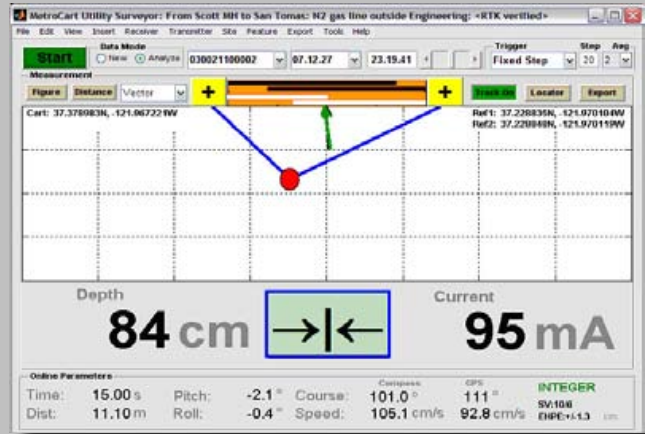
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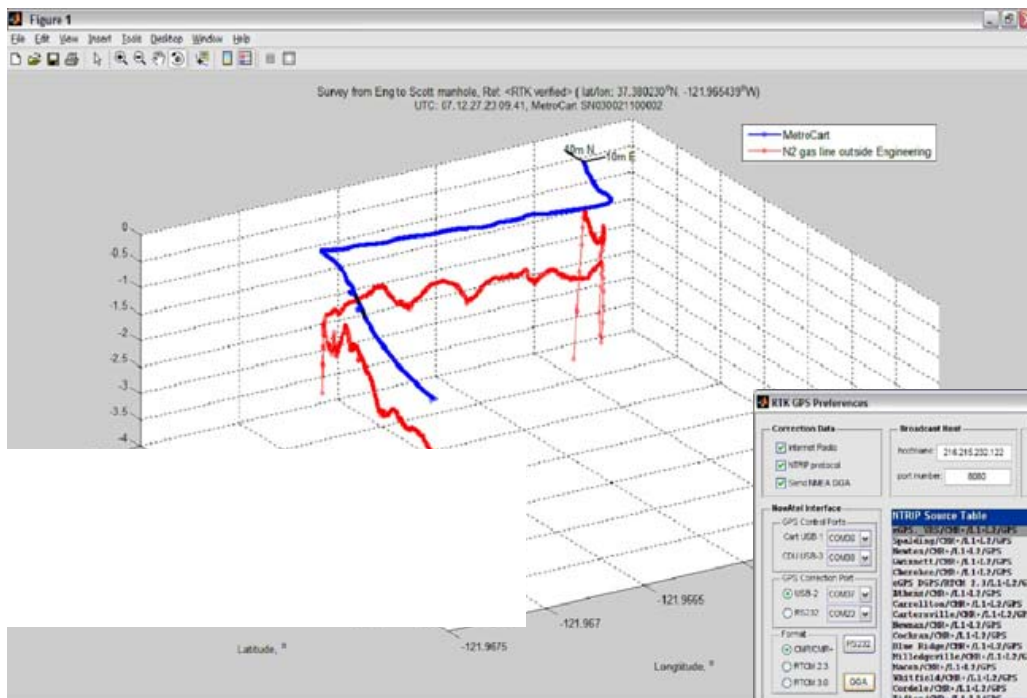


A trilateration tool allows accurate survey of off-line objects, avoiding the cost of having another RTK rover system on site. Through the wireless Bluetooth® interface, even i5000 handheld locate receiver data can be accurately positioned and saved as part of the dataset.



Vector mode user panel during a MetroCart survey is shown. Electromagnetic sensors at each side of the cart lock onto the target line, continuously updating the depth, centerline offset, and current while using other sensors (GPS and dead-reckoning) to locate the cart within a geographic reference frame. GIS position updates are available at 10 per second (approximately every 10 cm at normal walking pace).

Using Metrotech's proprietary Signal Select method, a distortion detection algorithm alerts the user that the environment is distorted, and also flags each positioning output. In the figure, moderate distortion is detected at the left sensor position (shown as yellow).



The MetroCart displays both the above ground cart track and the derived position of the utility (centerline and depth).

The MetroCart supports the latest standards-based NTRIP protocols, allowing easy real-time access to web-based GNSS correction services. A built-in wireless broadband modem is available for operation wherever NTRIP services are found. For traditional base station applications, the MetroCart supports an RS-232 link from a UHF base radio.

