

RTD Rover

RTD Rover is a high-accuracy PDA-based GPS real-time network positioning application for stationary and moving platforms.

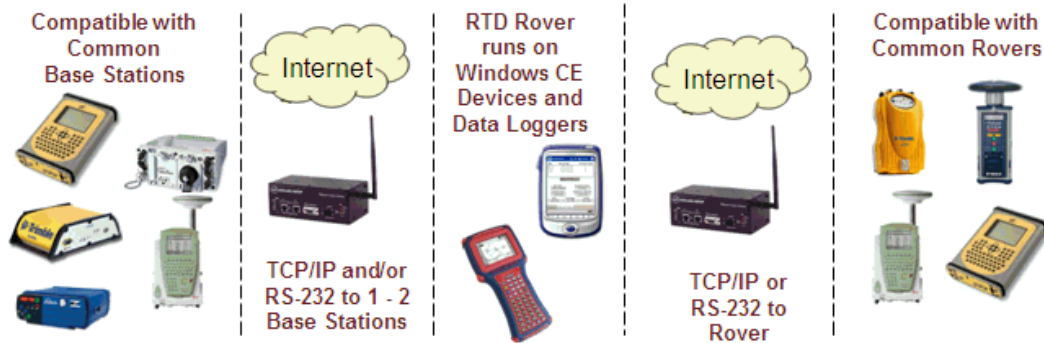
RTD Rover is powered by Precise Intermediate Network (PIN) positioning, based on Geodetics' Epoch-by-Epoch™ technology.

Geodetics' PIN-positioning creates a network of up to 3 GPS receivers (2 reference and 1 rover) and provides an independent multiply-determined estimate of rover position for each epoch of dual-frequency (L1 and L2) observations.



RTD Rover Features

- Epoch-by-Epoch™ network adjustments computed without initialization or re-initialization delays inherent in RTK (single-base or network) methods
- Extends effective range significantly compared to RTK methods
- Compatible with equipment from all major GPS hardware manufacturers – no need for in-receiver RTK and extends lifetime of legacy equipment
- Works with existing base stations, with or without reference network software
- Smart client mode for interactions with Geodetics' RTD Pro server software
- Makes use of TCP/IP or RS-232/Bluetooth communications to field receiver, base stations and data loggers
- Compatible with PDA mobile phones from Verizon, Cingular and Sprint



Technical Specifications

Applications

Surveying, precise GIS, precision agriculture, machine control, vehicle tracking, harbor navigation, robotics, fleet and product tracking.

Operations

Modes: All modes support real-time initialization-free (instantaneous), wide-area positioning, including ionosphere correction. Troposphere delay also estimated Epoch-by-Epoch™. Single-base mode – single baseline operations using RTCM. Dual-base mode – Precise Instantaneous Network (PIN) positioning with two base stations using RTCM. RTD Smart Client mode – PIN-positioning with two base stations from a reference network managed by Geodetics RTD Pro server. Short baseline option (< 5 km).

Comm: Supports RS-232, Bluetooth, TCP/IP communications with rover receiver and up to two reference (base) stations.

Output: Solutions in NMEA GGA and GSV delivered via RS-232, Bluetooth, TCP/IP to external applications running on the same or separate device.

User Interface: Intuitive, guides the user through the setup process.

Sensors: Leica dual-frequency receivers (CRS1000, System500 series, GPS1200 series), Ashtech dual frequency receivers (Z series), Trimble dual frequency receivers (4000SSi, 4000 SSE, 4700, 4800, 5700, NetRS), Topcon receivers, Novatel OEM4 receivers

Data Logging

Position solutions and raw field receiver data. Diagnostic displays and logging.

Analysis

Algorithm: Proprietary Real-Time Network Analysis (RNA) module with Geodetics' Epoch-by-Epoch™ technology.

Solution: Independent position computation at each epoch in baseline or network mode.

Precision*: Single-epoch precision*:

± [10mm + 0.2 mm/km)] horizontal
3-5 times less precise in vertical

(1 standard deviation). Average multiple epochs for increased precision and reliability.

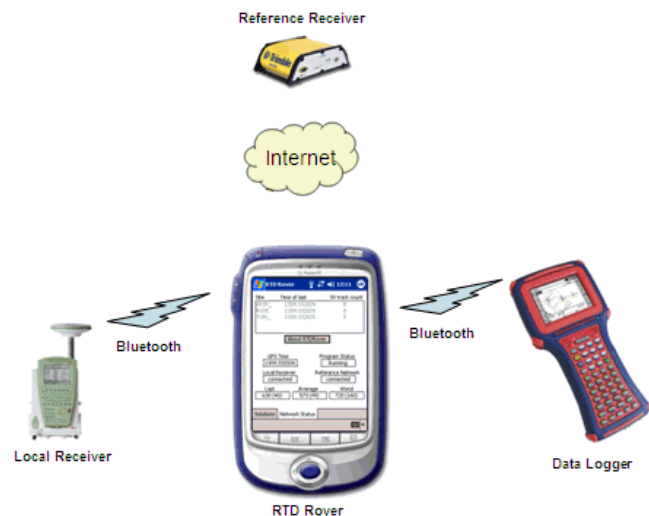
Range*: Up to 50 km in multiple-base station modes

Hardware Requirements

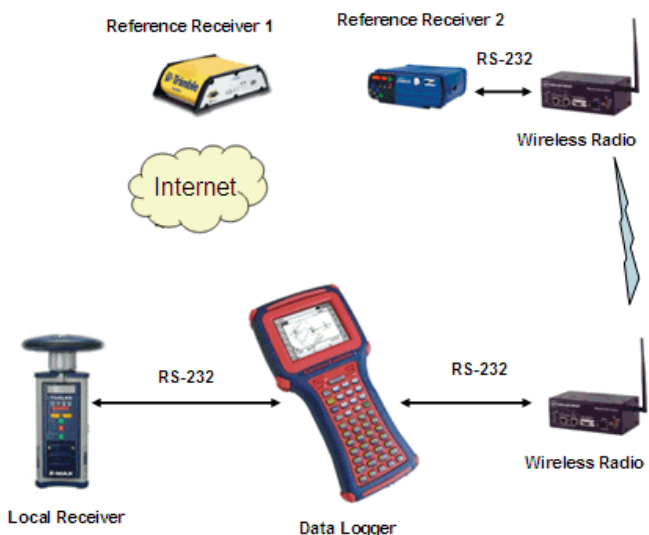
Processor: 400 MHz. ARM minimum

OS: Microsoft Pocket PC 2003, Windows CE.

Example Configurations



Single-base mode: Communications between RTD Rover and the reference receiver made via TCP/IP over the Internet. Communications between RTD Rover and the local receiver are made via Bluetooth. Communications between RTD Rover and the data logger are made via Bluetooth.



Dual-base mode: RTD Rover running on data logger simultaneously with third party application (e.g., Carlson SurvCE) making use of RTD Rover computed solutions. Communications between RTD Rover and reference receiver 1 made via TCP/IP over the Internet. Communications between RTD Rover and reference receiver 2 made via an RS-232 connection to one end of a wireless radio pair. The other end of the pair is connected via RS-232 to reference receiver 2. Communications between RTD Rover and the local receiver made via an RS-232 connection.

*Accuracy and station spacing are dependent upon GPS satellite system performance, ionospheric conditions, and other factors.

