

GeoExplorer II

Pocket-sized GPS mapping system

***Powerful,
affordable
GPS for
mapping and
GIS data
collection***

Trimble's GeoExplorer™ II mapping system is a pocket-sized, lightweight GPS receiver with user-friendly processing software designed for mapping and GIS data collection. It's a versatile, powerful and affordable solution for a variety of applications including resource mapping. The GeoExplorer II system incorporates all of the features that made the original GeoExplorer system one of the most popular and widely used GPS mapping products today, plus standard submeter accuracy and optional external antennas. The GeoExplorer II is part of the GPS Pathfinder™ Series, so it has many of the benefits found only in a Trimble GPS mapping system, including reliable, accurate differential GPS and powerful processing software. It's the smallest and lightest GPS mapping system available today.

The GeoExplorer II design philosophy emphasizes simplicity so it is easy to learn without sacrificing capability. All of the receiver's extensive functions operate through an intuitive menu-driven user interface controlled with a seven-button keypad. The receiver stores positions quickly with the accuracy necessary for cost-effective asset management applications. The GeoExplorer II system typically provides two-to-five meter accuracy after differential correction. Using the carrier phase processing module in Pathfinder Office, the GeoExplorer II system yields submeter performance for more demanding applications. For applications that require an external antenna, such as use in a vehicle, the GeoExplorer II system offers an optional plug-in external antenna. In the field, the GeoExplorer II receiver collects and stores up to 9,000 3D GPS positions. Both real-time corrected and uncorrected positions can be stored in a single file in the receiver. The positions not corrected in real-time can be processed back in the office with the post-processing software.

The GeoExplorer II system allows you to capture detailed feature and attribute information. Pathfinder Office™ software is included for data dictionary creation, differential correction, and GIS output. The software's Microsoft



Windows graphical user interface allows you to easily display, edit, and plot features at any scale. Most GIS and CAD systems are supported, including ARC/INFO, AutoCAD, Intergraph MGE, ERDAS, and GRASS.

The GeoExplorer II system requires minimal training but offers the power necessary for most mapping and GIS data collection applications.



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Features

- Small, lightweight, pocket-sized design
- Integrated high-performance six-channel GPS receiver and antenna
- 2-to-5 meter accuracy after differential correction
- Pathfinder Office software—Microsoft Windows-based software for planning GPS mapping, differentially processing GPS data, GIS output, plotting, and data dictionary creation
- Carrier phase processing software for submeter accuracy
- Records points, lines and areas
- Powered by off-the-shelf AA batteries
- Tracks up to 8 GPS satellites
- 1/4 Megabyte internal memory for storage of over 9,000 three-dimensional GPS positions
- User-selectable map coordinate system display
- GPS satellite status including Az, El, URA and SNR
- Average position function
- Screen backlight for night time operation
- ASCII, RTCM SC-104 and XMODEM serial protocols
- Carrying case with belt loop
- Navigation functions, including range, bearing, cross-track error, and storage for 99 waypoints
- Real-time differential GPS capability using RTCM SC-104 standard input
- CE Mark approved

Options

- External power kit: includes rechargeable camcorder battery and vehicle cigarette lighter adapter
- External antenna—magnetic or range pole mount

Physical Characteristics

Size:	17.3cmW x 8cmD x 4cmH
Weight:	0.4kg (14 oz.) with AA battery pack
Power:	2.0 watts
Operating temperature:	-10°C to +50°C
Storage temperature:	-20°C to +70°C
Humidity:	95%, non-condensing
Casing:	Splash-proof (will not withstand immersion)
Memory:	1/4 megabyte data storage
Communication:	Dual EIA-RS-232 serial port
Display:	Backlit, 4-line, easy-to-read alphanumeric
Antenna:	Internal; connector for external antenna

Technical Specifications

Update rate:	Minimum interval once every 0.7 sec
Time to first fix:	<2 minutes, 2D (typical) <3 minutes, 3D (typical)
Tracking:	6 channels parallel/sequential L1 C/A code
Battery:	Runs on 4 standard AA alkaline batteries or optional external rechargeable battery

Ordering Information

Geo Explorer II Part Number 28778-00
Includes GPS receiver, carrying case, one set of alkaline batteries, Pathfinder Office software, data download cable and manuals.

120V External Power Kit Part Number 23225-00
Includes rechargeable camcorder battery, battery recharger and vehicle lighter power adapter. UL listed.

230V External Power Kit Part Number 23225-10
Includes rechargeable camcorder battery, battery recharger and vehicle lighter power adapter. CE Mark approved.

External antenna—Vehicle Part Number 28779-00
Magnetic mount for vehicle use

External antenna—Range Pole Part Number 28780-00
Range pole mount with ground plane

Accuracy

Under the conditions outlined below, the GeoExplorer II system will compute positions that have a horizontal accuracy of less than five meters on a point-by-point basis and two meters CEP with averaging of differentially corrected data. Using the carrier phase data collection capability, the GeoExplorer II system will compute positions that have a horizontal accuracy of less than one meter with a ten minute occupation time. System accuracy is a function of Selective Availability (S/A), local environmental conditions and operational techniques and settings.

S/A: Without differential correction, all GPS receivers are subject to degradation of position and velocity accuracies under the U.S. Department of Defense-imposed S/A. Accuracy may be degraded so that 95% of the positions are within 100 meters (330 feet) of truth.

Local environmental conditions: Ionospheric conditions, multipath signals or obstruction of the sky by buildings or heavy tree canopy may degrade accuracy by interfering with signal reception. Optimal accuracy is obtained by collecting data in an environment that is devoid of large reflective surfaces and also has a clear view of the sky.

Operational techniques and settings:

Differential correction mode—In order to achieve stated accuracies, you must use differential correction, which requires two receivers; one in base mode and one in rover mode.

Baseline length—Accuracy degrades as the distance between the base and rover increases. An estimate of this degradation is 2 ppm (for example, 2mm of degradation of every kilometer between base and rover).

Maximum PDOP—Accuracy degrades as PDOP increases. Data should be collected with a PDOP mask of six or less.

Minimum signal strength—Accuracy degrades as signal strength decreases. Data should be collected with a signal mask (SNR mask) of five or higher.

Minimum number of satellites—Greater accuracies are achieved when more than four satellites are used in the position computation. Position data must be collected as 3D positions.

Minimum satellite elevation—Low elevation satellites tend to yield noisy position data. Position data must be collected using only satellites that are at least 15 degrees above the horizon.

Trimble follows a policy of continuous product improvement. Specifications are therefore subject to change without prior notice.



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