The GPS Pathfinder Pro XR and Pro XRS expand the use of GPS for GIS applications. Now you can not only map with submeter accuracy, but also find your way to new or previously located sites easily by using integrated real-time differential capabilities. Trimble now offers you two systems with a choice of real-time differential technology. The GPS Pathfinder Pro XR system integrates the most advanced GPS receiver with MSK beacon real-time differential capabilities. The new GPS Pathfinder Pro XRS is Trimble’s most versatile real-time GPS mapping system ever. By combining a GPS receiver, a MSK beacon differential receiver and a satellite differential receiver in a single housing, the Pro XRS system offers the user unsurpassed flexibility in choosing a source for real-time differential corrections. One receiver and antenna is all that is required for the flexibility of receiving GPS, MSK Beacon differential corrections, and satellite differential corrections. Add Trimble’s powerful data collection software Asset Surveyor or ASPEN to either system and the result is a robust, powerful tool for mapping and GIS applications.

Real-time differential correction means you do not have to wait to be sure your work is accurate. Postprocessing your GPS data back at the office is no longer necessary, so you can spend more productive time in the field. This allows you to quickly and efficiently transfer data directly from the field to your GIS.

The satellite differential receiver and antenna in the Pro XRS system can be used for reception of D GPS correction signals transmitted from satellite differential providers. A subscription to a differential correction service is required and multiple vendors are supported. The integrated GPS/Beacon receiver and antenna in the Pro XRS and Pro XR systems can be used for reception of D GPS correction signal from MSK radio beacon broadcasts. If you are not located within a beacon coverage area and choose not to use a satellite differential provider, we offer a GPS only version of the Pro XR. This system is easily upgraded to utilize the radio beacon broadcasts to receive free real-time differential corrections when a beacon becomes available in your area. Both the GPS/Beacon and GPS only versions of the Pro XR receiver can be upgraded to a Pro XRS receiver capable of reception of correction signals from satellite differential providers.

The Pro XR and Pro XRS system include powerful Pathfinder Office software for planning and processing your GPS data. The Microsoft Windows compatible software is designed for ease-of-use and high productivity too. Pathfinder Office ensures all functions including GPS planning, data dictionary creation, batch processing and data export, are easy and successful. If your project requires decimeter or even centimeter level accuracies, various options and defined procedures allow this to be achieved.
Trimble is a pioneer in developing GPS as a data acquisition tool. Since bringing the first mapping system to market in 1984, Trimble has worked closely with customers for continual improvement. This has resulted in today's higher performance levels making geographic data collection even simpler and more accurate than ever before. The GPS Pathfinder Pro XR and Pro XRS systems are the products of many years of development and research. Providing submeter accuracy on a second-by-second basis, these systems make GPS data collection not just a promising technology but a productive reality.

**Free Differential**

The Pro XR now makes differential correction unbelievably simple. By completely integrating a radiobeacon receiver and antenna with the GPS receiver and antenna, you can now tap into the worldwide network of differential GPS radiobeacons. Using the Pro XR, customers within the broadcast area of a DGPS radiobeacon can now receive reliable real-time differential corrections, free of charge. If you are in areas not yet covered by beacon transmissions, you can purchase the Pro XRS or the GPS-only version of the Pro XR and can use the existing network of community base stations to differentially correct your data.

**Satellite Differential**

The Pro XRS now extends the use of real-time where satellite differential corrections are most appropriate or where other sources of real-time differential corrections, such as MSK radiobeacons, are currently not available. The satellite differential receiver requires a subscription to a differential service and provides multiple vendor support. A built-in virtual reference station (VRS) permits the satellite corrections to be uniformly accurate over the entire satellite coverage area, without degradation in the accuracy associated with increasing distance from fixed reference stations.

**Productive**

The Pro XR and Pro XRS systems are the fastest, most accurate and productive mapping tools ever created. While the GPS receiver accurately records the location of your features, you can enter detailed descriptive information about your feature. The GPS receiver automatically calculates and stores the position of the feature. With this efficiency, you can map thousands of features to submeter accuracy every day. If your project requires higher accuracy, following appropriate procedures, you can process carrier phase data to better than 10 cm. For those needing to map lines or areas such as roads, trails, boundaries or coastlines, the Pro XR and Pro XRS systems enable line and area features to be recorded dynamically while you walk, drive, cycle or even fly around them. Using a data collector with Asset Surveyor, you can employ the use of digital devices, for example, laser rangefinders, bathometric and chemical concentration meters, and Geiger counters. Data from these devices is automatically combined and synchronized with positions from your GPS receiver.

**Pathfinder Office**

Your Pro XR or Pro XRS system comes with our Windows-based office processing software. With Pathfinder Office, all aspects of data collection management are simplified. It's easy to learn and use, and provides many time-saving techniques for optimizing your productivity. Many GIS/CAD formats are supported such as ARC/INFO, AutoCAD, Intergraph MGE, MicroStation, MOSS and GRASS, to name a few.
Managers of the world’s lands and natural resources face a difficult task. Now, more than ever before, the pressure is on to walk a fine line between economic viability and ecological sustainability.

Effective management can only be achieved with useful, reliable information. With the Pro XR and Pro XRS systems, accurate, up-to-date information about all your resources has become an affordable reality. Trimble’s powerful Pro XR and Pro XRS systems enable you to quickly and efficiently gather the information you need for making smart management decisions.

With the Pro XR and Pro XRS systems you can rapidly collect all your position and descriptive data, making it an extremely cost effective information solution. Recording the location of a point feature such as a tree, is as simple as standing next to it. Line and area features, such as access roads and lake boundaries can be recorded from a vehicle, or as you walk them. The sophisticated data collector lets you record descriptive details about your resources. For example, you may wish to record the species and height of a tree, or the surface and condition of a road, or perhaps the water level of a lake. In no time at all, you can build a complete geographic record of all your resources.

Traditionally tree canopy has often obstructed GPS signals and provided problems for GPS users. However, the good news is that the Pro XR system utilizes the latest developments in advanced signal processing. Now, you can record more positions, more accurately, than ever before. GPS positions are available, worldwide, 24 hours a day.

Urban and municipal authorities are responsible for the management and maintenance of a huge quantity and variety of assets. These assets range from building zones, to light standards and green belts, to road signs. Most authorities recognize that a geographic information system, or GIS, can greatly reduce costs and improve service efficiency. However, gathering information to establish a GIS can be a tremendous undertaking and urban authorities often don’t have the extra time or money. You need an efficient and cost effective means of data collection.

The Pro XR and Pro XRS systems allow you to quickly and easily collect all your GIS data directly from the field. Data collected with a Pathfinder system is accurate and up to date. Plus, it is in digital form, ready for easy transferal to your GIS.

Collecting information with a Pathfinder system is simple. The position of a point feature, such as a fire hydrant can be recorded by simply standing next to it. And the position of line or area features, such as paths or planning zones, can be recorded by just walking or driving along them.
Our planet has undergone rapid and dramatic change in recent decades, and the future holds continuing development. However, lack of knowledge and understanding has caused many decisions to be made which are detrimental to Earth. GPS technology has redefined the way environmental and scientific researchers collect data about the world we live in. From the Amazon rain forests, to the Himalayan mountains and polar expeditions, Trimble GPS technology is helping researchers like you, record highly accurate data more efficiently than ever before. With such high quality information at hand, we can all make better decisions for our planet's future.

Data collection used to be extremely labor intensive and time consuming. Now, using Trimble's GPS Pathfinder Pro XR and Pro XRS systems, you can collect more accurate data in significantly less time. Collecting data from a particular site, perhaps a nesting site or soil sample, is as simple as standing next to it and entering the required details into a handheld data collector. Line and area features such as fault lines or pollution zones can be recorded while you walk, drive, or fly them. As you enter descriptive details, the GPS receiver calculates and stores the features exact position in real-time.

The ability to connect your data collector to an external measuring device is particularly useful for environmental monitoring and research. The Pro XR and Pro XRS systems include Trimble's ESP (External Sensor Port) technology. You can record data directly from any device that gives a digital signal, such as digital thermometers, gas analyzers, Geiger counters, magnetometers, depth sounders, fish finders and many more. The recorded data is automatically combined with GPS location data.

People working with utilities deal with enormous numbers of assets, spread over huge distances and diverse terrain, from remote wilderness to urban streets. Keeping track of the number, position and quality of assets used to be a time consuming, expensive and arduous task. Vital details could be poorly recorded, incorrectly or incompletely updated, or even lost, resulting in substandard management and operation.

With the Pro XR and Pro XRS systems, gathering and maintaining accurate utility records need no longer be a trial. All over the world, electricity, gas, telephone and water managers are looking to GPS as a cutting-edge data collection tool. It is the fastest, most cost effective way to record asset information. And with more accurate and up to date records, utility managers can make more informed decisions and plan for the future.

Using the Pro XR and Pro XRS systems, data collection is a breeze. As you enter asset information into the data collector, the GPS receiver calculates, differentially corrects and stores your location. You can record point features such as poles or access covers, line features such as pipes or electricity wires, or area features such as lakes. In addition, the Pro XR and Pro XRS systems make it quick and easy to record information such as the type and condition of a feature. In fact, you can gather data previously too detailed for data collection systems to cope with.
One Receiver, One Antenna…

is all you need for productive real-time Mapping & GIS data collection.

The Pro XR integrated GPS/Beacon receiver and antenna combines the most advanced GPS and Beacon technology to ensure accurate data collection.

The Pro XR is also available as a GPS only system with compact dome antenna.

Map based data collection provides efficiency with your own field computer running ASPEN software.

Data collection is made easy with your choice of TDC1 (above) or TDC2 (left) data collector with Asset Surveyor software.
GPS Pathfinder Pro XR/XRS
Real-time GPS mapping/GIS data collection

Standard Features

Pro XR
• Twelve channel integrated GPS/Beacon/Satellite Differential receiver with Everest™ multipath rejection technology
• Integrated GPS/Beacon/Satellite Differential antenna

Pro XR GPS/Beacon
• Twelve channel integrated GPS/Beacon receiver with Everest multipath rejection technology
• Integrated GPS/Beacon antenna

Pro XR/XRS Systems
• Pathfinder Office software
• Choice of TDC1 or TDC2 data collector with Asset Surveyor software or customer supplied field computer
• Compatible with laser rangefinders and other electronic sensors (Pro XR)
• NMEA output (TDC1 or TDC2)
• RTCM input/output
• Base/over data logging modes
• Three-meter-antenna cable
• Rechargeable system batteries (provide 8 hours of field use)
• Battery charger and AC power supply
• Ergonomic hip pack carrying system

Options
• GPS only version including compact dome antenna
• Vehicle kit including cigarette lighter power adapter, quick release, 2 quick release adapters and magnetic mount.
• Pro XR/XRS centimeter processing option
• Short-range license-free radio systems for real-time differential correction (not available in all countries)
• Barcode wand for quick feature and attribute data entry (TDC1 or TDC2)
• Range pole bipod system
• Annual software/firmware/hardware support agreements
• System training: contact the Trimble Training Center at (408) 481-2038

Pathfinder Office Software Capabilities

• Automated workflow with Batch Processor
• Time line for chronological view of data
• Microsoft Windows based, Windows 95, NT 4.0 or later.
• Output in UTM or LAT/LON/ALT, U.S. State Plane coordinates or user-defined local coordinate systems and datums
• M CORR400 differential correction using data from a GPS base station
• Plot to Windows compatible printers and plotters at user-specified map scales
• Export to major GIS and CAD systems
• Mission planning for satellite availability
• Data dictionary creation/editing tool

Ordering Information

GPS Pathfinder Pro XR/XRS
For specific ordering information about the GPS Pathfinder Pro XR and Pro XR system, please contact Trimble or an authorized Trimble Distributor. Trimble has more than 200 distributor locations worldwide.

GPS/Beacon/Satellite Differential GPS/Beacon GPS Only

With Trimble TDC1 & Asset Surveyor
Pro XR, 12-channel, 2MB 29756-10-ENG1, 29756-15-ENG1
Pro XR, 12-channel, 4MB 29756-30-ENG1, 29756-35-ENG1
Pro XRS1, 12-channel, 2MB 29756-17-ENG1, 29756-22-ENG1
Pro XRS1, 12-channel, 4MB 29756-37-ENG1, 29756-42-ENG1

With Trimble TDC2 & Asset Surveyor
Pro XR, 12-channel, 3MB 29756-10-ENG1, 29756-15-ENG1
Pro XRS1, 12-channel, 3MB 29756-77-ENG1, 29756-82-ENG1

With customer supplied field computer & ASPEN
Pro XR, 12-channel 29756-10-ENG1, 29756-15-ENG1

Pro XR GPS/Beacon contains the integrated GPS/Beacon receiver and antenna.
Pro XR GPS contains the GPS receiver and GPS compact dome antenna.

1 For users requiring extended temperature range or operation in extremely wet environments.
2 In areas near with marginal reception of radio beacon broadcast signals, normal electromagnetic emissions from any personal computer can diminish the ability to differentially correct GPS positions in real time.
3 This product is not intended for use in offshore marine applications.
4 This product is intended for use in offshore marine applications.
5 Consult Trimble distributor for information on foreign language systems.

Systems Specifications

Integrated GPS/Beacon Receiver (Pro XR):
General: 12 channel, tracking, L1/CA code with carrier phase filtered measurements and multi-bit digitizer
Update Rate: 1 Hz
Accuracy (RMS):
M CORR400 differential correction
30 cm + 5ppm with 5 minute occupation
20 cm + 5ppm with 10 minute occupation
10 cm + 5ppm with 20 minute occupation
1 cm + 5ppm with 45 minute occupation (optional)
RTCDEM Beacon radio transmissions: better than 1 meter*

Autonomous accuracy: 100 meters (2D RMS)
Time to first fix: 30 seconds, typical
Size: 11.1 cm x 5.1 cm x 19.5cm (4.4" x 2.0" x 7.7")
Weight: .76 kg (1.68 lb)
Power: 5 Watts (max), 10 to 32 V DC
Operating temp: -30°C to +65°C (-22°F to +149°F)
Storage temp: -40°C to +40°C (-40°F to +104°F)
Humidity: 100% fully sealed
Casing: Dust proof, splashproof, shock resistant

Integrated GPS/Beacon/Satellite Differential Receiver (Pro XR):
General: Same as the Integrated GPS/Beacon Receiver with the following change:
Accuracy (RMS): Satellite differential transmissions less than 1 meter horizontal

Integrated GPS/Beacon/Satellite Differential Antenna:
General: Right-hand, circular polarized; omnidirectional; hemispherical coverage
Size: 15.5 cm dia x 10.8 cm H (6.1" dia x 4.2" H)
Weight: 0.49 kg (1.08 lb)
Operating temp: -30°C to +65°C (-22°F to +149°F)
Storage temp: -40°C to +40°C (-40°F to +104°F)
Humidity: 100% fully sealed
Casing: Dust proof, waterproof, shock-resistant

Integrated GPS/Beacon/Satellite Differential Receiver (Pro XRS):
Same as the Integrated GPS/Beacon Antenna with the following change:
Size: 15.5 cm dia x 14 cm H (6.1" dia x 5.5" H)
Weight: .55 kg (1.2 lb)

At least 5 satellites, PDOP < 6, signal to noise ratio > 6, satellite elevation mask at 15 degrees. These accuracy specifications apply with Selective Availability active. Accuracy specification may change if Selective Availability is deactivated or modified. Typically precision improves as occupation time increases. RTCM SC-104 standard format broadcast from a Trimble reference station.

Impact of local environmental conditions: Ionospheric conditions, multipath signals or obstructions 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.

Data Collector Specifications

Trimmle TDC1
Logging memory: 2 MB standard; 4 MB optional
Size: 20.8 cm x 8.9 cm x 4.5 cm (8.2" x 3.5" x 1.75")
Weight: 0.64 kg (1.40 lbs), including batteries
Operating temp: -20°C to +50°C (-4°F to +122°F)
Storage temp: -20°C to +60°C (-4°F to +140°F)
Humidity: Up to 95% non-condensing
Casing: Wind driven rain/dust resistant per MILspec 810D
Display: 8 lines x 20 characters, backlit twist LCD

Trimmle TDC2
Logging memory: 3 MB
Size: 23.6 cm x 12.8 cm x 4.3 cm (9.3" x 5.0" x 1.7")
Weight: 0.75 kg (1.62 lbs), including batteries
Operating temp: -30°C to +55°C (-22°F to +131°F)
Storage temp: -30°C to +60°C (-22°F to +140°F)
Casing: waterproof, dust and shock resistant per MILspec 810E
Display: 8 lines x 40 characters, backlit LCD

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

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