

Trimble Outdoors GPS

Phone Application User's Guide



www.TrimbleOutdoors.com

Introduction

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Safety & Warning

CAUTION: Do not use while operating a moving vehicle

See http://www.trimbleoutdoors.com for more information

Software License

This Trimble software product, whether provided as a stand-alone computer software product, built into hardware circuitry as firmware, embedded in flash memory, or stored on magnetic or other media, (the "Software") is licensed and not sold, and its use is governed by the terms of the relevant End User License Agreement ("EULA") included with the Software and located at http://www.trimbleoutdoors.com/eula.

GPS Applications

The availability and accuracy of Java programs using GPS derived location information will vary depending on the environment in which the GPS feature is used. In some situations, where adequate signals cannot be obtained, the GPS System may not work at all. Please read your user guide for information on enhancing GPS performance.

General GPS Performance Considerations

The GPS satellite antenna in your phone is part of the cellular antenna. Best reception is only achieved when you extend the cellular antenna before launching the Trimble Outdoors GPS application. Do not cover the antenna with your hand during use.

You should have good visibility to the sky when launching the Trimble Outdoors GPS application. GPS satellites are often low on the horizon in the sky so wide-open areas lead to the best GPS satellite reception.

Network Aware Application

Please note that actual data consumed may be higher or lower based on individual usage habits and network coverage.

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Quick Reference Guide



Figure 1 - Quick Reference Guide

Welcome

Trimble Outdoors is a community-based service and product family developed specifically for outdoor enthusiasts who would like to get more from their cell phones. Products include Trimble Outdoors GPS, Trimble Adventure Planner, and the Trimble Outdoors website (http://www.trimbleoutdoors.com).

Trimble Outdoors GPS adds recreational GPS, Global Positioning System, functionality to your cell phone. Main features include:

- A Navigation page with Digital Compass, Speed, Heading, Altitude and Latitude/Longitude Coordinate readout
- > A **Tracking** page with scale information for creating a bread crumb trail of travels
- > The ability to create and utilize trips, routes and waypoints
- The ability to download trips (requires Gold or Platinum Service)
- > The ability to download Topographic, Aerial and Street Maps (requires Platinum Service)
- The ability to take and automatically insert (upload) pictures into maps and trips (requires i850, i860, i870 or i275 camera phones and Platinum Service)

Trimble Adventure Planner is a PC-based trip planning application that allows users to:

- > Plan trips using topographic, aerial, and street maps
- Personalize trips with notes and photos (photos require i850, i860, i870 or i275 and Platinum Service)
- Share trips with friends and family
- Download trips to their cell phone
- Download Topographic, Aerial and Street Maps (Platinum service only)

Trimble Outdoors, http://www.trimbleoutdoors.com, is a community-based website that allows members to:

- > Search trips posted by other members
- View trips posted by other members
- View trip reports posted by other members
- View trip pictures posted by other members

What is GPS?

The Global Positioning System (GPS) is a worldwide radio-navigation system formed from a constellation of 24 satellites (21 operational and 3 spares) and their ground stations. GPS uses these "synthetic stars" as reference points to calculate positions accurate to a matter of meters. In a sense it's like giving every square meter on the planet a unique address. GPS receivers have been miniaturized to just a few integrated circuits and are so economical that they are now integrated into cell phones. For more information visit: http://www.trimble.com/gps

The Trimble Outdoors Service

To learn more about the Trimble Outdoors service visit http://www.trimbleoutdoors.com



Adventure Planner™



Activating the Trimble Outdoors Gold and Platinum Service



Select Gold or Platinum service

TrimbleOutdoors - SouthernLINC Service Features	Gold	Platinum
Navigation Tools with Digital Compass, Speed, Heading, Altitude and Lat/Lon Coordinate readout		
Create and utilize Trips, Routes, and Waypoints		
GPS Tracking with scaling for creating a bread crumb trail		
Wirelessly Download Trips using your PC to your cell phone		
Wirelessly Download Topography, Aerial, and Street Maps using your PC to your cell phone		
Wirelessly upload (insert) Pictures and Notes into trips from your cell phone using your PC		



Have your SouthernLINC sales representative install Trimble Outdoors and setup your service choice



Go to www.trimbleoutdoors.com and register

(Please allow up to 24 hours for SouthernLINC to enable service)







Activate new phone service.



Figure 3 - Activating the Trimble Outdoors Service

Running the Application

To run the Trimble Outdoors GPS application:

- Select Java Apps from the Main Menu
- > Use the arrow keys to scroll to highlight the Trimble Logo or "Trimble".
- Press OK to run the application.

How To

Maximize the GPS Performance of Your Phone

The GPS technology in your phone represents the latest advance in GPS called Assisted GPS or A-GPS. Assisted GPS offers superior performance over most conventional recreational GPS receivers when you are in the cellular coverage area. However, performance outside of coverage can be affected by the way you use the phone and can differ from conventional GPS receivers. The purpose of this section is to educate you on how to get the best GPS performance from your phone under the wide range of conditions expected during outdoor recreation activities.

In Network GPS Performance

When in the coverage area the GPS receiver in the phone is assisted by the cellular network. This assistance includes your approximate location, time, and key GPS satellite orbital information. This assistance allows the GPS receiver to perform better than conventional handheld GPS receivers used in outdoor recreation activities:

- Acquisition time when you launch the Trimble Outdoors GPS application you will often acquire GPS satellites and begin navigating in 5 to 10 seconds. Rapid GPS satellite acquisition is even typically successful under motion in less than optimum GPS satellite visibility conditions. For example, in a car driving down the road or around buildings that block some views to the sky. This is 10 times faster than many recreational GPS receivers.
- Re-acquisition time when you obstruct the sky to sufficiently block some GPS satellites from a view to your phone antenna the satellites are reacquired faster when you emerge from the obstructed area.
- Suspending the Trimble Outdoors GPS application when in the network you can close the phone to suspend the Trimble Outdoors GPS application and save battery life. When you open the phone you will need to go to Java Apps on the phone and select the file folder icon and then select the Trimble Outdoors GPS application to restart. You will need to wait 10 to 30 seconds for GPS satellite re-acquisition before navigating.

Version 1.5 of the software can continue to track your position when your flip phone is closed. To enable track while closed, go to the **Setup** page, select **Settings** and then **Track When Closed**. Select **Enabled** and then **Save**.

Out of Network GPS Performance

Achieving the best GPS location results when using your phone outside of the cellular coverage area requires special operating procedures that are different than typical recreational handheld GPS receivers. The following procedure will ensure a better experience:

- Extend the phone antenna fully
- > Find an open area before launching the Trimble Outdoors GPS application.
- Launch the Trimble Outdoors GPS application and immediately place the phone on a stationary object with the backside (phone antenna) visible to the sky.
- Wait approximately 5 minutes for GPS acquisition to complete. The display on the Trimble Outdoors GPS application will alert you when GPS is ready.
- Once you have acquired GPS satellites and are navigating you can participate in outdoor activities just as you would with a conventional handheld GPS receiver.
- Do not suspend the Trimble Outdoors GPS application either through the menu or by closing the phone. If you do suspend you will need to exit the Trimble Outdoors GPS application and restart again to acquire GPS satellites. If you wish to continue navigating while the flip on your phone is closed, select Setup->Settings->Track when Closed->Enabled.

Use in Extreme Out of Network Environments

If you are using your phone for navigation in extreme outdoor environments, such as out of the network for extended periods of time or in confined places where sky visibility is limited (like a canyon), the following tips will enhance your chances of acquiring GPS satellites:

- Extend the phone antenna fully
- Launch the Trimble Outdoors GPS application and immediately go to Setup->Settings->GPS Mode->Out of network->Save. This action saves a flag (indicator) to cause the phone to not attempt network assistance upon the launch of the Trimble Outdoors GPS application. You must exit the Trimble Outdoors GPS application and then restart the Trimble Outdoors GPS application for this setting to have effect.
- Find the most open area possible before launching the Trimble Outdoors GPS application.
- Launch the Trimble Outdoors GPS application and immediately place the phone on a stationary object with the backside (phone antenna) visible to the sky.
- You may need to wait up to 30 minutes for GPS acquisition to complete. The display on the Trimble Outdoors GPS application will alert you when GPS is ready.
- Once you have acquired GPS satellites and are navigating you can participate in outdoor activities just as you would with a conventional handheld GPS receiver. The best results are achieved when you leave the phone on and the Trimble Outdoors GPS application running even if you are not currently using the GPS capability. This is because current satellite parameters are known and you will not have to wait for GPS satellite acquisition when you are ready to begin navigating again.
- If you need to suspend the application be sure that Track When Closed is enabled to avoid lengthy GPS reacquisition times.

Maximize Your Phone Battery Life

Your phone has a number of features to preserve battery life. The largest consumer of battery power is talking on the phone. The second largest consumer of battery power is keeping the display backlight on constantly. If you are not talking on the phone and are judicious in the use of the backlight you can get 6 to 10 hours of battery life when continuously running the Trimble Outdoors GPS application. Here are a few pointers to extend the battery life when using the Trimble Outdoors GPS application.

- If you are in the cellular network then simply exit the Trimble Outdoors GPS application as soon as you have finished your navigation task. Restart the Trimble Outdoors GPS application when you are ready for the next navigation task. Acquisition while in the network is so fast that this is rarely an inconvenience and it saves considerable battery life. You can also close the phone flip to suspend the application and achieve the same result if Track When Closed is disabled.
- The display on some phones has a reflective property that makes it visible in direct sunlight negating the need for the backlight in many cases. Simply put the sun at your back and hold the display up and the color image will become very visible without the backlight.
- Every time you hit a key on the phone keypad the backlight turns on for a pre-programmed time. You can adjust the backlight from off to 90 seconds. To adjust the backlight time select Menu->Settings->Display/Info->Backlight->OK and select the time of your choosing. Lower is always better for battery life. You can also turn on the backlight independently from within the Trimble Outdoors application by selecting Setup->Settings->Backlight. Choose either Always On or Normal. If set to normal the phone operating system backlight settings are used.
- Extended life batteries are available from your wireless carrier's local retail store that can considerably improve talk time and battery life for the Trimble Outdoors GPS application. On extended multi-day adventures carry an extra phone battery. They are small, light weight, and very easy to change in the field without tools.
- Car chargers are also available from your local retail store and are a great way to ensure your phone is charged on your next adventure.

Mark Waypoints

To mark the waypoint, current location in latitude and longitude, either press the *(Menu)* button and select **Mark Point** or press (*) on the track, navigation, or map page. The **Mark Point** edit screen will appear. You can also mark waypoints when the phone flip is closed by pushing the **Push to Talk** button located on the side of the phone. On phones without a camera, the **Push to Talk** button can be used to mark a waypoint even when the flip is open.

When the **Mark Point** screen appears a generic number appears which can be edited (for instructions on text entry, consult your phone manual.) When adding a waypoint with the **Push to Talk** button, the waypoints are added in a sequential order to allow easy tracking. The (*) button

erases individual characters from the field. You can change the text input mode by pressing the *(Menu)* button.

Each waypoint can have a description associated with it. This description will show up in the Trip Report on the website when it is shared with friends. This field can be left blank and updated once you send the trip to the Trimble Outdoors server using the upload trip feature. Once the trip has been uploaded, you can modify both the description and the waypoint name using the Adventure Planner software on your PC.

You can modify the latitude, longitude, and altitude of the current point or use this to enter the information manually for a point you want to navigate too.

Once the waypoint information is correct press the *Save* soft key and the waypoint will be added to the list of waypoints for your trip.

Audio Waypoints

You can also now add audio waypoints! To add audio waypoints, hold down the push-to-talk button until you hear a beep. While continuously holding the button, speak into the phone. When you are finished, release the button. Voila! Audio waypoints! (Requires an i605, i850, i860, i760, i870)

Manually Enter Waypoints

Using **Setup->Waypoints->Add New** you can create new waypoints by manually entering GPS coordinates. You can obtain these coordinates from many map and text sources.

Before you begin entering waypoints be sure to set the Lat/Long format to match the format of the coordinates you are about to enter. (Setup->Settings->Lat/Lon Format)

- Select Setup->Waypoints->Add New
 - The GPS position will be filled in with your current position. If you do not have GPS coverage the last good position will be filled in.
- Using the keypad enter the name of the new waypoint
- Enter a description if desired
- Edit the Latitude Hemisphere
- Edit the degrees
- Edit the minutes (if minutes is enabled in current Lat/Long format)
- Edit the seconds (if seconds is enabled in current Lat/Long format)
- Edit the Longitude Hemisphere
- Edit the degrees
- Edit the minutes (if minutes is enabled in current Lat/Long format)
- Edit the seconds (if seconds is enabled in current Lat/Long format)
- Press Save soft key to exit and save your new waypoint.
- > If you do not want to save the changes press **Back** soft key to exit without saving the changes
 - You will be prompted that changes have not been saved and asked if you want to save them or continue.
 - If you select **Yes** soft key the changes will be ignored.
 - If you select No soft key you will be brought back to the edit screen to continue editing or save your changes.

Navigate to Your First Waypoint

- > Walk outside to obtain an unobstructed view of the sky
- > On the phone launch the Trimble Outdoors GPS application
- > Wait for Trimble Outdoors GPS to initialize
 - Place your Trimble Outdoors GPS on its side or with the display down to acquire satellites quicker
 - When the Trimble Outdoors GPS is ready to use the initializing message will disappear and the signal strength bars will appear at the bottom of the **Satellite** page
- > Using Setup->Settings->Arrival Radius set the arrival radius to 33 feet
- Mark the location of a physical point of interest such as a fire hydrant, stop sign, parking spot, tree, etc. by hitting the (*) key
- > Walk 300 feet away from the waypoint.
- > On the Navigation page press **Go To** soft key to bring up the **GoTo Point** menu
- Select "Nearest" to navigate to the nearest waypoint or select "List" to choose from previously stored waypoints.
- Once a waypoint is selected you will be returned to the navigation page. Note: The compass heading and waypoint bearing red dot are only valid when moving in a constant direction for five seconds
 - A red dot will appear on the compass indicating the bearing to the waypoint
 - The distance to the waypoint will be displayed in the compass
 - The waypoint name and your bearing to the waypoint will be displayed at the bottom of the screen
- > Your speed, heading and altitude will be updated as you walk toward the waypoint
- Walk toward the red dot and the distance will decrease until you are within the 33 foot arrival radius set earlier
 - When you are within 33 feet of the arrival point a message will alert you that you have arrived at the waypoint

Congratulations! You have now successfully navigated to your first waypoint using your Trimble Outdoors GPS

Log Your First Track

- Give your track a name using Setup->Tracks->Add New (enter a track name)->Save
- Set the current track to your named track by using Setup->Tracks->Set Current (your track name) ->OK
- > Walk outside to obtain an unobstructed view of the sky
- > On the phone launch the Trimble Outdoors GPS application
- > Wait for Trimble Outdoors GPS to initialize
 - Place your Trimble Outdoors GPS on its side to acquire satellites quicker
 - When the Trimble Outdoors GPS is ready to use the initializing message will disappear and the signal strength bars will appear at the bottom of the **Satellite** page
- Go to the **Tracking** page
- > Turn on tracking by using Menu->Start Tracking
- You will see a small "Z" in the top right of the display this means Auto Zoom function is on
- > Walk or drive a large path and you should see your path visible on the screen

- The screen automatically zooms when you hit the edge on the screen so your location is always on the screen
- Use the up and down arrows to zoom in and out. The "Z" will disappear indicating that you are no longer in Auto Zoom mode
- > Use the '5' key to center your position on the screen
- Use the 1, 2, 3, 4, 6, 7, 8, and 9 keys to pan around the track log
- Hit the "#" key and the Auto Zoom function "Z" will re-appear
- Turn off tracking by using Menu->Stop Tracking
- Walk or drive around and the old track should remain on the screen but the your new track will not plot on the screen

If you exit Trimble Outdoors, your track will still be saved. Your track will also be included when you upload your trip.

Create and Navigate Your First Route

A route is defined as any series of waypoints.

- > Walk outside to obtain an unobstructed view of the sky
- > On the phone launch the Trimble Outdoors GPS application
- Wait for Trimble Outdoors GPS to initialize
 - Place your Trimble Outdoors GPS on its side to acquire satellites quicker
 - When the Trimble Outdoors GPS is ready to use the initializing message will disappear and the signal strength bars will appear at the bottom of the **Satellite** page
- > Using Setup->Settings->Arrival Radius set the arrival radius to 35 feet
- Find a street or park where you can walk around a convenient route
- Go to the Tracking page
- > Mark a first waypoint at a convenient point of interest
- Walk a minimum of 150 feet and mark a second waypoint. Repeat until you have marked at least four waypoints.
- Using Setup->Routes->New create a new route and give the route a name and a description
- Using Setup->Routes->Edit Select the route to edit
- Using Setup->Routes->Edit->Points add points to the route
- Using Setup->Routes->Edit->Points->Add Existing add each waypoint you marked in the order you wish to conduct the route
- Exit out to the main Routes menu and choose Setup->Routes->Run Route to select the new route
- Now walk toward your first waypoint using the compass screen. Use the compass heading, range to waypoint, and bearing to waypoint to find your way to the waypoint
- > An arrival message is displayed when you are within the arrival radius of the first point
- Move toward the second waypoint and the arrival message disappears and the next waypoint name is automatically displayed on the screen Use the compass heading, range to waypoint, bearing to waypoint, and distance to waypoint to find your way to the next waypoint
- Follow each waypoint to the end of the route
- When you hit the last waypoint in the route you should see "arriving at point: 'name of waypoint'" on the display, the waypoint name will be automatically removed from the display, and navigation functions will cease

When navigating a route you can also use the **Left** and **Right** arrow keys located on the side of the phone to move forward and backwards in your route's waypoint list. This is especially helpful if you do not get within the arrival radius or a particular point or take a short cut.

Congratulations! You have now completed your first route; you are now ready to strike out on your own.

Download Your Trips to Your Phone

A trip is a hierarchal structure of routes, waypoints, and pictures (i860, i275, i850, i870). See the **FAQ** for more information.

- > How to Download Trips to your phone after creating them in Adventure Planner
 - While in the Setup menu Press the (Up Arrow) until Trips is highlighted. Press (Select) or (OK) button.
 - The Trips menu will open. Press (Down Arrow) to highlight (Download). Press (Select) or (OK) button.
 - A load screen will appear, wait until trips are downloaded. When they are finished downloading press the **(OK)** button. Your trips are now loaded on your phone, along with any routes, waypoints and maps created within the trip using Trimble Adventure Planner.

Take Your First Picture (i850, i860, i870 or i275 only)

- > From the **Setup** Page, be sure that the camera is enabled
- From the Track Page, Navigation Page, or Map Page, hit the (Push To Talk) button on the left side of the handset to bring up the camera function
- Selecting the (*Right Arrow*) or (*Left Arrow*) changes the camera resolution between low, medium, and high
- Selecting the (UP Arrow) or (Down Arrow) arrow keys changes the camera zoom level between 1x, 2x, and 4x
- > Once you have set up your shot select the (Take) key
- The camera operating system will require you to authorize the Trimble Outdoors application to store your picture. You will be asked for various permission responses five times. Each time you can select (OK) to speed the responses (Trimble Outdoors version 1.5 will not ask for these permissions).
- > You will be asked to save your picture to memory by selecting the (Save) key
- Each picture is marked with a waypoint designating the location the picture was taken. You can edit the name or description of the waypoint if you desire and then select save
- After the picture is saved the original Page view will be restored.

Note:

Upload Your First Trip

After your trip is complete you can upload points of interest, tracks, routes, descriptions, and even photos (i850, i860, i870 and i275 only) to the Trimble Outdoors web site for sharing with your friends. You can access the upload function by selecting **Setup->Trips->Upload**

Geocache

Probably the fastest way for you to get real-world GPS experience is to go geocaching, pronounced (*GEE*-oh-*cash*-ing). Geocaching is a fun and challenging activity that combines modern technologies like GPS and the Internet, with primitive outdoor navigation and search skills. Fortunately, Trimble Outdoors GPS eliminates the biggest investment to geocaching, a handheld GPS receiver. Here is a list of the basic things needed to start geocaching:

- Cache location Obviously you need to know where to look for a cache (a set of latitude and longitude coordinates). You can find tens of thousands of caches freely listed on the Internet. http://www.geocaching.com is currently the most widely used site for geocaching and has the largest database of geocaches all over the world. To enter coordinates into your phone see the section in this manual titled Manually Entering Waypoints.
- Your GPS-enabled cell phone running Trimble Outdoors GPS You can certainly find caches by using only a map and compass, but you'll find it's a lot easier with GPS technology. Moreover, if your cell phone has an integrated digital camera, take a picture to record your cache adventure. To learn how to take pictures with your cell phone see the section in this manual titled Taking Pictures.

Finding the Cache

After you have selected the cache you want to search for, the next step is finding it. This may be a little more challenging than you think. Remember, that any conventional GPS receiver will only get you within 10 to 33 feet (3 to 10 meters) of the cache location - perhaps even farther away if you have poor satellite reception or the cache coordinates are slightly off. Once your phone and Trimble Outdoors GPS gets you within the general vicinity of the cache, start using your senses, which may be more useful at close range.

Below are the basic steps to finding a Cache:

- Enter the cache coordinates into your cell phone as a waypoint and add a name. See the section in this manual titled Manually Entering Waypoints
- > Set the arrival radius to lowest setting (33 feet). See the section in this manual titled Setup
- Print a copy of the cache description web page so you have all the information available to find the cache with you
- > Gather your gear, including your GPS-enabled cell phone, and essentials (water, food, etc.)
- > Head out (e.g. drive, bike, etc.) to the cache's starting point
- Start the Trimble Outdoors GPS application
 - Wait for Trimble Outdoors GPS to initialize
 - Place your Trimble Outdoors GPS on its side to acquire satellites quicker
 - When the Trimble Outdoors GPS is ready to use the initializing message will disappear and the signal strength bars will appear at the bottom of the Satellite page
 - When the Trimble Outdoors GPS is ready to use the initializing message will disappear and the signal strength bars will appear at the bottom of the **Satellite** page
 - Create a waypoint for your starting point and add a name. Use this waypoint to get back to your starting point after your cache search

- Double-check that you have the coordinates, cache description, hints and the rest of your geocaching gear prior to leaving your starting point
- Select and activate the cache's waypoint. Activating a waypoint instructs Trimble Outdoors GPS to calculate the distance and direction to the waypoint's location
- > Utilizing your cell phone to find your cache:
 - From the Navigation page change your bearing as you walk to keep the red dot (cache) at 12:00 on the digital compass. As you approach the cache you should see the distance value decreasing on the screen. Note - once you're within the arrival radius Trimble Outdoors GPS will alert you are arriving at your waypoint and the red dot disappears. It is recommended you switch to the Tracking page.
 - From the **Tracking** page orient the arrow toward the red dot (cache) and continue walking to close the distance between the arrow and red dot. You have arrived at the cache when the arrow and red dot converge. Note: Make sure you're zoomed completely in to maximize your accuracy.
 - From the Map page (if applicable) walk to close the distance between the Red Arrow (you) and the red dot (cache). Note - once you're within the arrival radius the red dot will turn blue (point of interest). You have arrived when the two dots converge.
- Begin your search. This is where the real fun starts. You shift from relying on technology to using your power of observation and common sense.

Operating Instructions



Map Page



Figure 4 - Main Trimble Outdoors GPS screens

There are five basic pages in the Trimble Outdoors GPS application. For more detail see the individual sections listed below.

Satellite Page

Displays the strength of current satellite signals in use by the GPS.

Tracking Page

Displays your current location, bread crumb trail, waypoints, and routes.

Navigation Page

A digital compass showing your heading, altitude, speed, and bearing to a selected waypoint when moving in a constant direction for five seconds.

Map Page

Displays your location on a aerial, street or topographic map (requires Trimble Outdoors Platinum service).

Setup Page

Various settings for trips, routes, waypoints, and access to uploading and downloading trips.

Satellite Page



Figure 5 - Satellite Page

When the Trimble Outdoors GPS program starts the program automatically begins searching for satellites. The program requires at least four satellites to accurately determine your location for navigation. When the phone is in cellular coverage the time required to acquire your position is much shorter. The **Satellite** page will display the message "Searching for satellites" while acquiring satellites. The outer circle depicts the horizon, the inner circle is 45° above the horizon, and the center of the inner circle is directly overhead.

Note - the top of page is always North.

Once the phone is aware of available GPS satellites, numbered circles representing the satellites will appear on the screen. Based on internal satellite almanac information, Trimble Outdoors GPS shows the position of satellites within the circles, representing them with numbers. Underneath the circles are a series of bar graphs with numbers corresponding to the satellites Trimble Outdoors GPS has located. Taller bars indicate stronger satellite signals. No bar indicates no satellite signal. To learn how GPS utilizes satellites to determine location and position go to the section in this manual titled **What is GPS.** For a complete web-based tutorial on GPS, visit http://www.trimble.com/gps/.

Tracking Page



Figure 6 - Tracking Page

The **Tracking** page is the primary navigation feature of the Trimble Outdoors GPS. The track page displays the area surrounding your present position. If tracking or navigation is on, a bread crumb trail will be drawn connecting points along your track. You may mark your current position at any time and store it as a waypoint. All waypoints in your vicinity will be shown on the Tracking Page. Each trip can contain up to 3 unique tracks. Each track can contain up to 1000 position points.

To give your track a name, you must first be sure you are set to the desired trip. Do this by going to **Setup->Trips->Set Current Trip->(select the trip)->Set**. Next, press the **Back** key twice to get to the main setup page and then select **Tracks->Add New->(type the track name)->Save**. Next, select the name of the track to be used by going to **Setup->Tracks->Set Current->(select track name)->OK**. Your track will now be saved under this track name as it is being collected. You can recall this track name from memory for future use if desired.

With the use of the cursor pad and numeric keypad you may zoom and pan around the surrounding area as desired.

If you have a built in camera (i860, i850, i870 or i275 only), you may take pictures from the Tracking page.

When tracking or navigating a solid line (bread crumb trail) will be drawn connecting your current position to the points you have traveled through from the beginning of this session. An arrowhead at the end of the bread crumb trail indicates your last direction of travel. Your heading is determined by the direction of travel from your last point to your current position. You must be moving for the heading information to be accurate.

The bread crumb trail that you create is automatically saved when you exit the application. It is recalled from the phone's memory as soon as you re-launch the Trimble Outdoors application.

A scale indicator is displayed in the lower left corner giving the distance represented by the length of the scale line.

If the GPS status is anything other than OK, a message will be displayed in a message box at the top of the track page. If GPS is unavailable a message box will be displayed on the top of the screen.

You can use the track page to:

- > Display waypoints within the current zoom range relative to your current position
- Toggle waypoint labels on or off.
- Zoom manually or auto zoom, when you are in the Auto Zoom mode, a "Z" appears in the top right hand corner of your screen.
- Pan and center your position
- Mark a waypoint
- Stop Tracking
- Start Tracking
- Stop Navigation ceases navigation to a waypoint
- Enable Auto Zoom
- > Toggle Labels turns on & off name of waypoints you have entered
- Clear the "bread crumb" trail for your current track
- > Obtain help instruction
- > Take Pictures (phones i860, i850, i870 or i275 only)
- Select a waypoint to go to

Tracks can be uploaded via Trips > Upload. This will allow you to view using the Adventure Planner your exact path in question.

Page Function

The *Page* soft key button in the lower left of is used to move sequentially through the Trimble Outdoors pages.

Go To Function

The **Go To** function in the lower right of the screen will take you to the **Go To Point** menu. Choose from **Nearest**, **In Trip** and **List All**. The **Nearest** selection will make the closest point to your current position your destination. From the **In Trip** select from a point in the current Trip. From the **List All** selection, all points in all trips will be available. The **In Trip** and **List All** selection allow the points to be sorted by name or by distance. The selected waypoint will be displayed as a red dot if it is in the current zoom range.

Menu

The Menu is accessed by pressing the (Menu) button in the upper left corner of the phone.

Taking Pictures

If you have the i860, i850, i870 or i275 phone, you may take a picture from the **Tracking** page. The camera must be enabled from the **Setup** page. To take a picture you must press the (*Push To Talk*) button on the side of the phone. The camera page will appear and you will see a live image. Press *Take* soft key to take the picture. You can also use the (*Right Arrow*) or (*Left Arrow*) button to change the camera resolution without going to the setup screen. Furthermore the zoom level can be adjusted by pressing either the (*UP Arrow*) or (*Down Arrow*) button. You will be prompted to authorize the Trimble Outdoors application to store your picture (up to five permissions.) These permissions are not required in version 1.5 of the software. The picture can then be saved to memory by selecting the (*Save*) button. Each picture is marked with a waypoint designating the

location the picture was taken. You can edit the name or description of the waypoint if you desire and then select *(Save)*. Upon saving the image you will return to the **Tracking** page.

Mark Waypoint

You may select the (*Menu*) button then select (*Mark Point*) or simply press (*) on the **Tracking** page. You can also mark waypoints when the phone's flip is closed by pushing the **Push to Talk** button located on the side of the phone

The Mark Point screen will appear.

- > Use the keypad to edit the waypoint name
- Scroll down to the description field using the cursor down arrow. Edit the description using the keypad
- You may scroll down through the remaining windows and edit the actual Latitude, Longitude and Altitude of the waypoint if desired
- When you are finished editing press the (Save) soft key to store the new waypoint to the waypoint list

When adding a waypoint with the **Push to Talk** button, the waypoints are added in a sequential order to allow easy tracking.

Stop Tracking

This function stops drawing the bread crumb trail. Your current position will continue to update on the Track Page as you move.

Start Tracking

This function begins drawing a new bread crumb trail from your current position.

Stop Navigation

This function stops the Go To navigation feature and returns the Go To waypoint icon from red, back to its original color. This function also stops running the current route. (Blue icon for default waypoint and white dot for any waypoint that is part of a route)

Auto Zoom

When you select **AutoZoom** the zoom range of the **Tracking** page will zoom out automatically when your current position goes off any edge of the **Tracking** page. This is the same as pressing zoom out, *(Down Arrow)*, Auto Zoom does not perform any Pan functions.

Toggle Labels

Turns the names of visible waypoints on or off and the waypoint icons are not changed.

Clear Trail

Selecting **Clear Trail** erases all displayed bread crumb trails for the currently set track name.

Help

Select **Help** from the menu or press "0" zero when you are on the **Tracking** page.

Cancel

Select **Cancel** any time you want to cancel the displayed screen and move back one level in the menu tree.

Using the Update Distance Parameter to determine the length of track to be stored

A track consists of 1000 positions. The length of the track is determined by the Update Distance parameter. If that value is set too low, the track length may not be sufficient to cover your entire journey. As an example, if the Update Distance were set to 33 feet, the maximum track length would be calculated as 1000 x 33 feet = 33,000 feet or 6.25 miles. On the other hand, if the Update Distance were set to 66 feet, the maximum track length would be 1000 x 66 feet = 66,000 feet or 12.5 miles. The Update Distance may be set by selecting **Setup->Settings->Update Distance->(enter value)->Save**.

Recall a previously saved track

Allow the phone to acquire GPS satellites until GPS is ready. Go to Setup->Tracks->Set Current->(select the track name)->OK. Next, go to the track page to see your recalled track. You may need to zoom out using the down arrow key before you can see your track if your current location is not near the track.

Navigation Page



Figure 7 – Navigation Page

The main **Navigation** page gives you flexible navigation capabilities. The page always displays the electronic compass, speed, heading and altitude. When navigating to a waypoint in your list the direction to waypoint indicator appears as a red dot on the compass and the range to the waypoint is displayed in the center of the compass. When your current location is within the arrival radius set for waypoints the screen will alert you that you have arrived at your destination.

To navigate to a waypoint select the **Go To** soft key this will bring up the **Go To Point** menu. Select either "Nearest" to navigate to the nearest waypoint or select "List All" for a list of all stored waypoints or "In Trip" to see only the waypoints in the current trip. You can sort the waypoints by distance or alphabetically by selecting **List All** and pressing the **menu** key. Once the point is selected the waypoint name will appear on the compass screen along with your bearing to the waypoint, the indicator on the compass, and the distance to the waypoint. Note: Only valid when moving in a constant direction for five seconds. Navigation can be stopped at any point by selecting the **(Menu)** button and then pressing "Stop Navigation."

If you have the i850, i860, i870 or i275 phone, you may take a picture from the **Tracking** page. The camera must be enabled from the **Setup** page. To take a picture you must press the (*Push To Talk*) button on the side of the phone. The camera page will appear and you will see a live image. Press the *Take* soft key to take the picture. You can also use the (*Right Arrow*) or (*Left Arrow*) button to change the camera resolution without going to the setup screen. Furthermore, the zoom level can be adjusted by pressing either the (*UP Arrow*) or (*Down Arrow*) button. You will be prompted to authorize the Trimble Outdoors application to store your picture (up to five permissions – skipped in Version 1.5 of the software). The picture can then be saved to memory by selecting the (*Save*) button. Each picture is marked with a waypoint designating the location the picture was taken. You can edit the name or description of the waypoint if you desire and then select (*Save*). Upon saving the image you will be returned to the **Navigation** page.

The information on the bottom of the screen toggles by using the *Up* and *Down* arrow keys: current time, last latitude and longitude, waypoint and bearing (navigation mode only), and trip information which includes the name of your trip, the name of your track, and the number of points collected in your track in brackets. You can also use the zoom in and out buttons (the phone volume keys) to cycle the other items on the display.

Waypoints can be marked at any time by pressing the (*) button on the keypad. Once a waypoint is added the point will be displayed on the **Map** or **Track** pages. See the **Mark Waypoints** section of this manual for more information on marking waypoints.

Help can be accessed anytime by pressing the *(0)* button on the phone. Help will bring up a list of the functions available on the **Navigation Page**.

Outside Display

This feature allows you to use your phone's outside display to show your navigation data on the i730, i830 and i860 phones. This alleviates you having to open your phone repeatedly to get pertinent information. While running the program, close the flip and use your Up and Down volume keys to navigate through the available information. It now shows your Speed, Heading, Latitude, Longitude, and Altitude. To use this feature, enable Track While Closed (Setup->Settings->Track When Closed->Enabled).

Maps Page



Figure 8 - Map Page

The **Maps** page allows you to see your current position on downloaded aerial, topographic, and/or street maps (requires Trimble Outdoors Platinum service.) Using the Trimble Adventure Planner create a trip including all the image tiles you want to cover the trip you are planning (see the Trimble Adventure Planner for more information). After you have downloaded the trip to your Trimble Outdoors GPS phone you will be able to see them when your current position corresponds with a map tile loaded on your phone. Each map uses about 10 to 15 kilobytes of your Data Plan. It is not recommended to download more than 50 map tiles due to potential memory limitations of the phone. Your available memory can also be affected by other Java applications you have on your phone.

You can switch between preloaded zoom levels by pressing the *(Up arrow)* or *(Down arrow)* on the phone. The "+" indicator informs you that you can zoom in and the "-"indicator shows you that you can zoom out.

When multiple map types are loaded on the phone for the same geographical location you will notice the following indicators "A, S, T". The "A" indicates that you have an aerial photo available for you to view at your current location, the "S" indicates a street map, and the "T" indicates a topographic map. You can toggle between the available maps by pressing either the (*Right arrow*) or the (*Left arrow*).

If you have the i860, i850, i870 or i275 phone, you may take a picture from the **Map** page. The camera must be enabled from the **Setup** page. To take a picture you must press the (*Push To Talk*) button on the side of the phone. The camera page will appear and you will see a live image. Press the *Take* soft key to take the picture. You can also use the (*Right Arrow*) or (*Left Arrow*) button to change the camera resolution without going to the setup screen. Furthermore, the zoom level can be adjusted by pressing either the (*UP Arrow*) or (*Down Arrow*) button. You will be prompted to authorize the Trimble Outdoors application to store your picture (up to five permissions, except in V1.5). The picture can then be saved to memory by selecting the (*Save*) button. Each picture is marked with a waypoint designating the location the picture was taken. You can edit the name or description of the waypoint if you desire and then select (*Save*). Upon saving the image you will be returned to the **Maps** page.

The Labels soft key allows you to toggle the waypoint labels on and off.

Pressing Menu on the **Maps** screen will allow you to instantly download a map. **You must be in a cellular phone coverage area to get a map.** After pressing **Menu**, you can choose the type of map

(aerial, street, and topographic) that you would like as well as the zoom level you would like the map to cover.

Setup Page

(i Set	up ()
Settings	
Trips	
Routes	
WayPoint	\$
Maps	
Photos	
Page	Select

Figure 9 - Setup Page

This page controls the settings for many of the application features.

Settings

Unit System

This feature allows you to select the units (English or Metric). English is the default.

Lat/Lon Format

This feature allows you to display different coordinate formats.

- Degrees Displays degrees only
- Deg Minutes Seconds Displays degrees, minutes and seconds
- Deg Minutes Displays degrees and minutes
- > UTM Reserved for future software version not functional now.

Arrival Radius

This feature allows you to set your desired waypoint arrival radius. All values are stored in meters therefore if you enter a radius in feet it will be rounded to the nearest meter (i.e. 50 feet to 49 feet.)

- Entry Field (33 to 3281 feet, 10 to 1000 meters)
- Feet/Meters unit title

Update Rate

This feature allows you to select your tracking/bread crumb trail frequency. Note - frequency and memory usage are directly proportional.

- Entry Field (1 to 360 seconds)
- Seconds unit title

Update Distance - This feature allows you to select your tracking/bread crumb trail distance. Note: Shorter distances between updates result in increased memory usage. Also, all values are stored in meters therefore if you enter an update radius in feet it will be rounded to the nearest meter (i.e. 50 feet to 49 feet.)

- > Entry Field (4 to 3281 feet, 10 to 1000 meters)
- Feet/Meters unit title

Track When Closed

This feature allows you to have Trimble Outdoors GPS continue to track your location while you have the flip closed on your phone (i710, i730, i830, i860 only). By default the phone will continue all tracking activities when the handset is closed. When this feature is enabled the unit will continue to track satellites and your location. Enabling this feature allows you place the phone back in your pocket or on your belt clip while you hike to your next location. Once you open the handset the application will automatically resume. This is the case for all phones except for the i710 where you must manually resume by Menu – Java Apps – open Suspended Application folder and resuming Trimble Outdoors to unsuspend the application. By default this feature is enabled on all flip phones. If you want to preserve battery power then be sure to disable Track When Closed when you do not intend to use Trimble Outdoors GPS.

- Enabled
- Disabled

GPS Mode

This feature allows you to set the GPS acquire method to "Normal" or "Out of Network". If you have network coverage you should use "Normal" and this setting will speed up the GPS initialization by utilizing cell data to quickly locate your position. If you do not have network coverage you are "Out of Network" and the GPS will use the last known GPS position to speed up GPS initialization. Once you select either of these items you must exit and restart the Trimble Outdoors GPS Application for the setting to take effect. You can also select "NMEA Output" mode which allows your phone to output information to other electronic devices (required optional data cable).

- > NMEA Output
- Normal
- Out of network

Camera (phone i860, i850, i870 or i275 only)

This feature allows you to use the phone's integrated camera with the Trimble Outdoors GPS application and to enable or disable the camera. New menu – Setup – Settings – Camera (Camera Enabled, Camera Quality, Camera Resolution)

- Camera Enabled
- Camera Disabled

Camera Resolution (phone i860, i850, i870 or i275 only and Trimble Outdoors Platinum Service) – This feature allows you to set the image pixel count for use with the application. Note: pixel count (resolution) and memory usage are directly proportional.

- ➢ High (640x480)
- Med (176x220)
- ► Low (128x96)

Camera Quality (phone i860, i850, i870 or i275 only and Trimble Outdoors Platinum Service) – The feature allows you to set the image quality for use with the application. Note: the lower the quality the smaller the images.

- > Medium
- ≻ High
- ► Low

Track When Closed – This feature allows you to have Trimble Outdoors constantly running in the background. This is particularly useful when having your phone map your trail. It alleviates the need to be holding your phone open (in the case of flip phones only) and have it still be marking your trail.

GPS-

Backlight – This function allows you to set your backlight to "Always on" to let it illuminate your screen at all times. This is particularly useful for activities at night or during the day to help you see the screen better. We have found that leaving the backlight consistently on can run down your battery is as little as 3 hours. "Normal" uses the backlight time the user selected in the phone settings menu.

Trips

Trips are the highest level of navigation provided. Trips are made up of a list of routes and routes are made up of a list of waypoints.

To create a trip select "Trips" from the **Setup** page menu and the **Trips** menu will appear.

Select the function you want to perform

- > Edit
 - A list of trips will appear. Select the trip from the list that you want to edit.
 - Select what to edit from the list:
 - **Name/Desc** to edit the name or description of the selected trip
 - Routes to edit routes in the trip. When you select routes you will be taken to the "Routes" page, where you can select routes to run, edit and create routes as well as delete routes.
 - **Points** to manage waypoints.
- > New
 - Enter the name and description of a new trip.
 - Save the new trip
- > Delete
 - Select the trip you want to delete
- Set Current Trip
 - Choose the trip you want to take from the list. All waypoints, tracks, and routes created here after will be associated with the trip you select.
- > Upload (requires Trimble Outdoors Gold or Platinum Service)

- Choose the trip you want to upload from the list. This trip will be uploaded from the phone to the Trimble Adventure Planner PC application.
- Download (requires Trimble Outdoors Gold or Platinum Service)
 - Downloads the current trip from the Trimble Adventure Planner to your phone.
 Missing Images This feature allows you to just download parts of your trip that you may have previously missed. It avoids duplication and resending the entire trip which saves you excessive wireless costs for re-transmission.

Routes

Routes are the second highest level of navigation provided. Routes are made up of a list of waypoints. To create a route select "Routes" from the **Setup** page menu and the **Routes** menu will appear.

Select the function you want to perform

- Run Route
 - Select the route you want to run from the list.
 - Runs a route from the beginning to the end in the order it was created.
- Run Route Backwards
 - Select the route you want to run backwards from the list.
 - Runs the selected route from the end to the beginning in the reverse order from which it was created.
 - ➤ Edit
 - A list of routes will appear. Select the route from the list that you want to edit.
 - Select what to edit from the list
 - **Name/Desc** to edit the name or description of the selected route
 - **Points** to manage waypoints.
- > New
 - Enter the name and description of a new route.
 - Save the new route
- > Delete
 - Select the route you want to delete

Waypoints

This menu allows you to Go To, Edit, Add New or Delete waypoints.

- > Go To
 - Nearest waypoint to your current location
 - List All of stored waypoints Once selected you can hit menu to sort by name or distance

- > Edit name and description of the waypoints
 - Add new
 - Delete
- Add New
- Delete

Tracks

This menu allows you to give a new track a name, edit the name and description of a current track, delete a track, clear a track or set the current track name for operation of the Track Page. You cannot delete a default track but you can clear the track log. To delete a default track, you must delete the entire trip. Clear track simply erases all points in the current track but leaves the track name intact.

- Add New
- ≻ Edit
- > Delete
- Clear
- Set Current

Maps

This page allows you to review all the image tiles (graphics that are displayed on the **Maps** page) you have downloaded using the Trimble Outdoors Platinum Service. In order to use this feature you must be an activated Trimble Outdoors Platinum Service user.

Using the Trimble Adventure Planner, create a trip including all the image tiles you want to cover the trip you are planning (see the Trimble Adventure Planner manual for more information). After you have downloaded the trip to your Trimble Outdoors GPS phone you will be able to view them. Each map uses about 10 to 15 kilobytes of your data plan. It is not recommended to download more than 50 map tiles due to potential memory limitations of the phone. Your available memory can also be affected by other Java applications you have on your phone.

- To view your downloaded maps select Setup->Maps (Trip To Use) and select the trip you want to view maps for
- > Now use the **Next** soft key to scroll through your map tiles
- > Use the **Close** soft key to exit
- Use Menu button to access Info this enables you to view the GPS coordinates and image type (s=street, t=topographic and a=aerial) of the maps.
- > Use Menu button to access **Delete** this enables you to delete any unwanted images.
 - If you want to delete all the images in a trip the best way is to delete the trip rather than the individual images one at a time.

Photos

This function allows you to view stored photos within a trip and delete unwanted photos prior to upload.

Activate

This feature allows you to activate your Trimble Outdoors Gold or Platinum Service (if it was not done when you initially launched Trimble Outdoors). Trimble Outdoors Silver customers cannot use this feature and the phone will report an error if attempted as Trimble Outdoors Silver does not require activation.

- > The **Activate** page will display your current plan
- > To activate your plan enter the phone number of your Trimble Outdoors GPS cell phone
 - Select Activate soft key
 - Please wait will be displayed until the activation is completed
 - When the activation is completed your activated plan will be displayed (i.e Complete. New plan: Gold)

About

This feature allows you to view the software version and application size

- Version displays which version of Trimble Outdoors is running
- ♦ Size

Quit

Exits Trimble Outdoors and returns you to the Java Menu. Tracks, photographs, waypoints, and routes will be saved to permanent memory.

Appendices

Support

You may contact Trimble Outdoors Technical Support at 1-800-773-5996: Monday – Friday from 7:00 am EST to 10:00 pm EST and Saturday from 8:00 am EST to 5:00 pm EST.

You may also visit our web site at <u>http://www.trimbleoutdoors.com</u>. The support page (<u>http://www.trimbleoutdoors.com/support.aspx</u>) has documentation, the FAQ list and a link to Trimble Outdoor Community Forums (<u>http://www.trimbleoutdoors.com/forums/default.asp</u>).

And, you may email our support team at support@trimbleoutdoors.com with any questions or comments.

How to Update Trimble Outdoors Software

If you have purchased the Trimble Outdoors Gold or Platinum plan, you are able to upgrade Trimble Outdoors GPS on your phone whenever new software updates are available free of charge. First, check our web site (<u>http://www.trimbleoutdoors.com</u>) for a listing of updated software available for your phone. Or you may send an email to <u>support@trimbleoutdoors.com</u>. Second, launch the Trimble Outdoors application on your phone and go to **Setup->About** to check the software version running on your phone. If your software version is not up to date with the version listed on our website then you can download the latest version to your phone.

To download the latest version to your phone, first end all running or suspended applications. Then select **Menu->Java Apps->Download Apps->Next->Subscriptions->(select Trimble Outdoors)->Get It**. Once the software has been downloaded to your phone, exit to the main menu. Then select **Menu->Java Apps**. Using the Navigation Keys, select, but do not run, **Trimble Outdoors**. Press the **Menu** key and select **Upgrade**.

FAQ

How are trips organized?

The Trimble Outdoors GPS system stores trips, routes, waypoints and pictures (i860, i850, i870 or i275 only) in a hierarchal format:

Hierarchy

- Trip (1, 2, 3...)
 - ◆ Route (1, 2, 3...)
 - Waypoint (1, 2, 3...)
 - Waypoint (1, 2, 3...)
 - ◆ Picture (1, 2, 3...)

All data within a trip is exclusive to that trip. As data is created it is stored in the current trip. Each data point is only accessible when the trip it was created under is set as the current trip. You may create multiple trips each containing a list of routes, waypoints and pictures.

Why does it say "GPS unavailable" on my phone?

Trimble Outdoors GPS requires you to be outdoors when accessing GPS functions on the phone. However, if you are outside and having difficulty getting a GPS lock we recommend the following:

Extend the antenna Set the phone face down or on its side Wait for the phone to acquire a GPS lock Do not move the phone or cover the antenna while attempting to gain a GPS lock

Why can't I receive a phone call when uploading or downloading trips?

When transmitting data between your phone and Trimble Outdoors GPS all phone functions are disabled. Once the trip has been uploaded or downloaded you will be able to receive phone calls again.

How do I resume the Trimble Outdoors GPS application after a call comes in?

Go to Java apps and select the file folder. Next highlight "Trimble" and select the **OK** button on the phone.

How much data does it take to send or receive a trip on my phone?

The size of trips can vary based on the number of waypoints, the length of descriptions, and the number of maps that are included. The following numbers can be used as approximate estimates:

Trip = 1 - 2 Kb Map = 10 -15 Kb (each)

What are the minimum resources required to run the Trimble Outdoors GPS application?

The phone application has the following minimum space requirements:

iDEN-Program-Space-Requirement: 270 iDEN-Data-Space-Requirement: 500

Note: The data space and program space may increase as the application is used.

Which phones can I run the Trimble Outdoors GPS application on?

Currently the i58sr¹, i88s¹, i265, i275, i325¹, i355, i560, i605, i710, i720², i730, i733³, i760, i830, i836, i850, i860, i870 and the Blackberry 7520³ are supported by Trimble Outdoors.

¹ The i58sr, i88s and i325 are only supported on Nextel with the 1.4 release. No further releases are planned.

² i720 only available from Southern LINC

³ i733 and Blackberry 7520 only available from Nextel

Why do the units on my phone seem to be off?

The Trimble Outdoors GPS program stores all data in meters. During conversion from standard units to metric units all data will be rounded to the nearest meter. For example, if you enter 50 feet in the arrival radius the software may redisplay the value as 49 feet.

Why do I get duplicate photos on my phone (i860, i850, i870 and i275)?

- If you press save more than once before the waypoint entry screen appears, duplicate photos may be created.
- If you upload your trip to the Trimble Adventure Planner more than once you may get duplicate photos.

For updated FAQ's see the website at http://www.trimbleoutdoors.com