

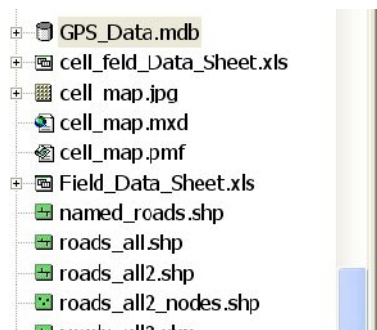
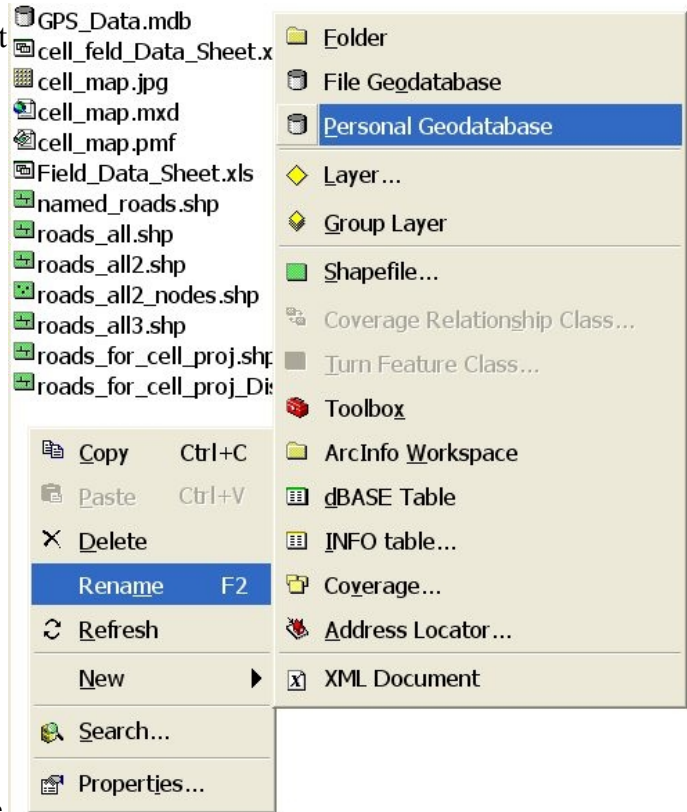
Quick Guide to Data Collection with the Trimble GeoXT and ArcGIS with Trimble GPS Analyst

Step 1: Plan your trip.

1. Click Start > All Programs > Trimble Office > Utilities > Planning
2. In Planning, click File > Station. Enter the estimated latitude, longitude, date and time of the planned trip. If applicable, add information about obstacles, etc.
3. Click Graphs > Number of Satellites to determine whether there will be a sufficient number of satellites at the planned trip time. If not, adjust plans accordingly.
4. You may use other tools in Planning to plan your trip.

Step 2: Create the necessary layers.

1. Open ArcCatalog
2. To turn on the Trimble GPS Extensions, click Tools > Extensions. If necessary, click the check box next to Trimble GPS Analyst to turn it on. Close the Extensions dialog.
3. Navigate to the folder where you would like to store your GPS layers.
4. Right click in the folder, right click and choose New > Personal Geodatabase. Give the database a name and click enter.
5. To create new layers, open the geodatabase and right click inside the



geodatabase. Choose New > Feature Class. In the New Feature Class dialog, give the new layer a name, choose the feature type (point, line or polygon), and click Next. (Hint: Never use spaces or special characters in file names).

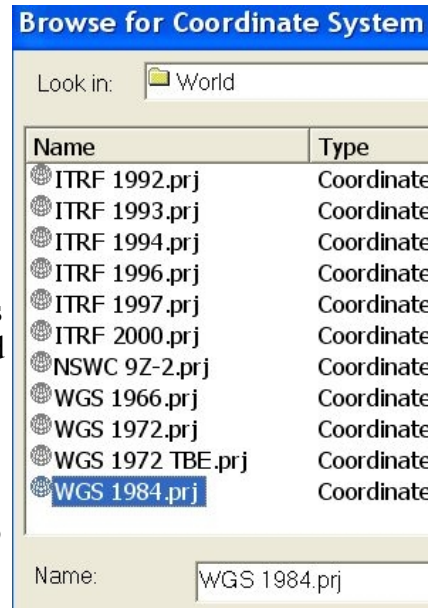
Assign the feature class the WGS 1984 coordinate system (all Trimble data is collected in this coordinate system—we can convert it to another coordinate system later, if necessary). Click the + sign next to Geographic Coordinate Systems, then click the + sign next to World. Select WGS 1984 and click Next. Keep the default for XY tolerance, unless you have other needs, and click Next.

6. Create any fields or attribute columns you will need when collecting your GPS data. Click in the space below the word "Shape" and enter the name of your new field and then click in the Data Type column to choose the format

Field Name	Data Type
OBJECTID	Object ID
SHAPE	Geometry
POINT_NUM	Long Integer
NAME	Text
	Short Integer
	Long Integer
	Float
	Double
	Text

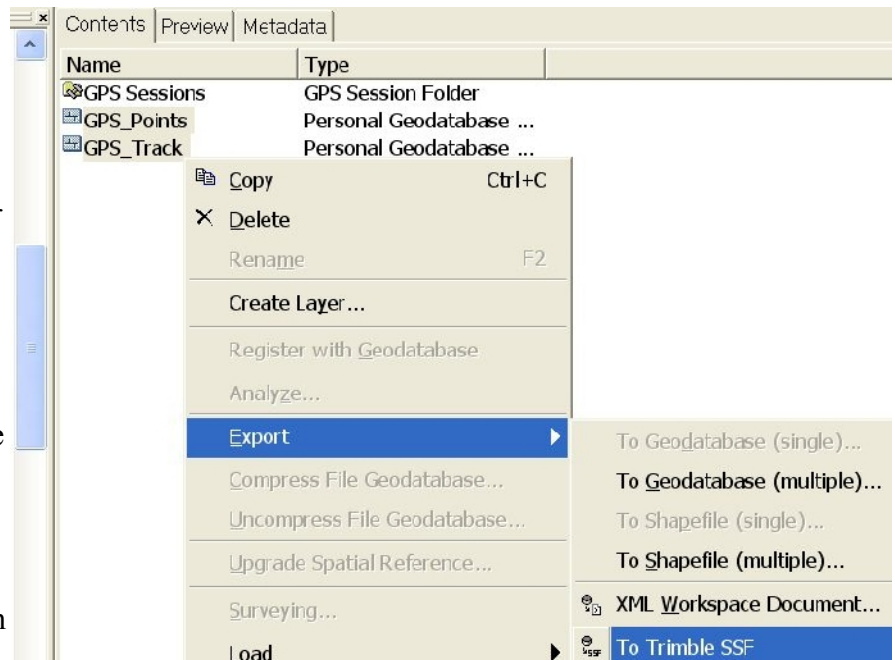
for the field. In the example here, I've added two fields, one is an integer field called POINT_NUM and the other is a text field called NAME. Click Finish.

7. Repeat steps 5 through 7 for any additional layers you will need. Put them all in the same geodatabase. Remember that each layer can have only one feature type, either points, lines or polygons.
8. Now that you have layers in your geodatabase, you must GPS-enable your geodatabase. Right click on your geodatabase and choose Properties. In the Properties dialog, click the Trimble GPS Analyst tab and click the Set Spatial Reference Button. Click Select. Double click the Geographic Coordinate Systems folder and double click the world folder. Select WGS 1984 and click Add. Then click Next. For now, keep the default range and domain for X, Y and Z coordinates by clicking Next twice more.
9. When you have set the spatial reference, click the check box next to "GPS-enable geodatabase" and the check boxes next to all the layers listed. Click OK. Your geodatabase is now enabled.



Step 3: Export your new layers to the Trimble format

1. Select all the layers in your GPS-enabled geodatabase, then right click on them and choose Export > To Trimble SSF.
2. Under Destination SSF Data File, you can navigate to a folder where you want to store your SSF file. Click OK. All of your layers will be stored in a single SSF file that you can easily transfer to the GeoXT.

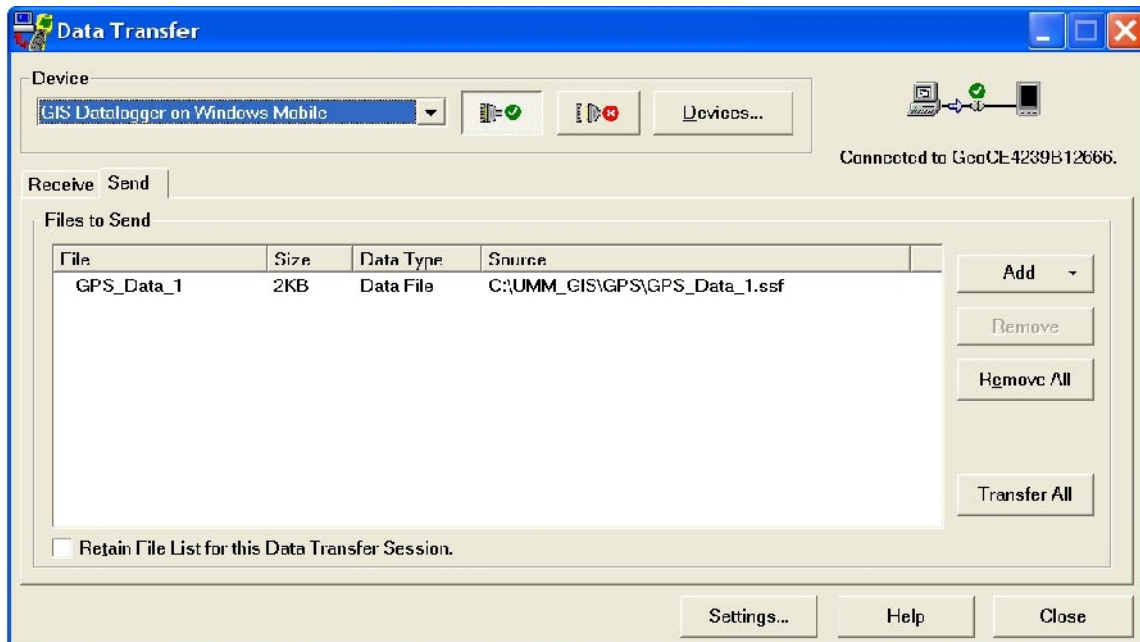


Step 4: Transfer your layers to the Trimble GeoXT GPS Receiver

1. Make sure your Trimble GPS receiver is clicked into its base, the base is plugged into an electrical outlet, and the USB cable is attached to the base and to the computer.
2. When you first connect the GPS receiver to the computer, ActiveSync should automatically detect the connection and a New Partnership dialog will open. Choose No... I don't want to synchronize information and click Next and Next again. Finally, click Finish. ActiveSync should now show the status as Connected.
3. Click Start > All Programs > Trimble Data Transfer > Data Transfer.



4. Under Device, select GPS Datalogger on Windows Mobile. The software should automatically recognize the GeoXT, which is indicated in the upper right. If it is not connected, click the connect button and wait for the software to show that it is connected to the GPS.
5. Click the Send tab—you will send your new files to the GPS. Then click the Add button and choose Data File. Navigate to your SSF file, select it, and click Open. The file should appear in the Send list.



6. When you have selected all the files to be transferred, click Transfer All. The files will be converted to a GPS format and placed on the GPS receiver's disk, allowing you to collect GPS information directly into the layers you have created.
7. Close the Data Transfer window. You are now ready to collect data with the GeoXT.

Step 5: Set up the GeoXT

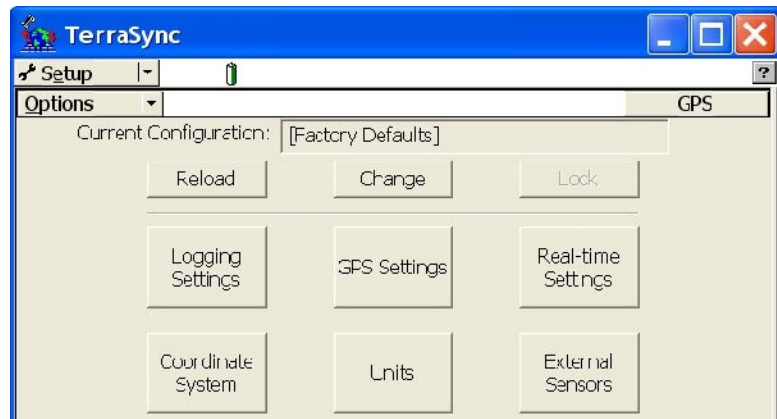
1. You can now remove the GeoXT from its base.
2. Turn the unit on, if necessary, by pressing the On button once.
3. Open TerraSync by double tapping the icon on the desktop.
4. Note that TerraSync has two pull-down menus in the upper left corner of the screen. The upper menu allows you to select sections, including Map, Data, Navigation, Status and Setup. The



- lower menu allows you to choose options within each section.
- To begin, you need to configure and connect the GPS. Use the section menu (upper) to go to the Setup Section. Click the GPS Settings button and ensure that the GPS receiver port is set to COM3 and click OK.

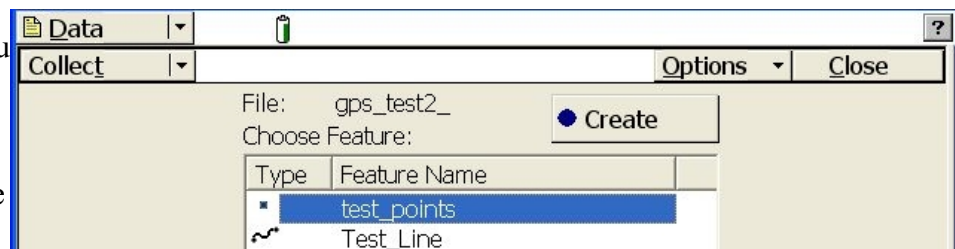
- Click the GPS button in the upper right corner to connect the GPS and allow it to begin collecting data from satellites.

- When the GPS is connected you should see a small satellite icon in the bar at the top of the screen. Make sure the GPS has a clear view of the sky. Use the section menu to go to the Status section, and select Skyplot



This page displays the satellite constellation and the status of each signal. Wait for the receiver to collect signals and calculate a location before you attempt to collect GPS data. The Skyplot page will display your coordinates and PDOP once the receiver is able to calculate a position.

- To begin collecting data in the layers you have created, go to the Data section. In the Options menu, choose Existing. The SSF file you exported to the GPS



should appear in the list. Select it and click the Open button in the upper right. Enter the height of the antenna above the ground and click OK. In the Options menu, click Collect Features.

- To save a feature, select a feature type from the list and click the Create button.
- Enter the attributes in the spaces provided, and choose OK.
- For line or polygon features, first create them as described in numbers 9 above, then from the Options menu choose update features. Select the line or polygon you wish to update and click Begin. When you are finished collecting the line or polygon feature, and entering the attributes, click OK.

Step 6: Transfer data to the computer



- Make sure your Trimble GPS receiver is clicked into its base, the base is plugged into an electrical outlet, and the USB cable is attached to the base and to the computer.
- When you first connect the GPS receiver to the computer, ActiveSync should automatically detect the connection and a New Partnership dialog will open. Choose No... I don't want to synchronize information and click Next and Next again. Finally, click Finish. ActiveSync should now show the status as Connected.

- Click Start > All Programs > Trimble Data Transfer > Data Transfer.



4. Under Device, select GPS Datalogger on Windows Mobile. The software should automatically recognize the GeoXT, which is indicated in the upper right. If it is not connected, click the connect button and wait for the software to show that it is connected to the GPS.
5. Click the Receive tab—you will download your files from the GPS. Then click the Add button and choose Data File. Select for files you want to transfer, and click Open. The file should appear in the Receive list.
6. When you have selected all the files to be transferred, click Transfer All. The files will be converted to SSF format and placed in the My Documents/GPS Projects folder.
7. You are now ready to import your data and apply differential correction.

Step 7: Import the GPS data, add it to a map and apply differential correction

1. In ArcCatalog and navigate to your GPS-enabled geodatabase, right click on it, and choose Import > From Trimble SSF. Click the browse  button in the upper right and navigate to the My Documents/GPS Projects folder and select the SSF file you transferred from the GPS. Click OK. The features you collected are now in your geodatabase.
2. Turn on the Trimble GPS Analyst. Click Tools > Extensions, and if necessary, check the box next to Trimble GPS Analyst and click Close.
3. Open a blank ArcMap document and add the layers you imported into your geodatabase.
4. If necessary, add the Trimble GPS Analyst toolbar. Click View > Toolbars > Trimble GPS Analyst.
5. Click Trimble GPS Analyst > Start GPS Editing. Click the differential correction button. 
6. Select the appropriate session and click Next.
7. Keep the default settings for Processing Type and Correct Settings.
8. Under Base Data, choose Base Provider Search and click Select. Choose the nearest base station and click OK. Click Next and then click Start.
9. You should get a log detailing the corrections made to your location data.