

Using the Leica Rover

A guide to locating And capturing locations Using the Leica GPS500 Rover



Cleveland Utilities

Last Updated: Nov. 23, 2004

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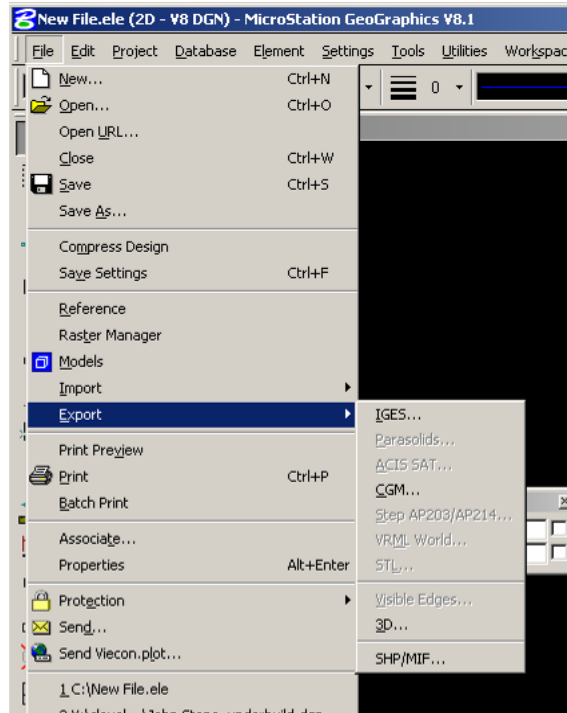
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! REMEMBER: SHIFT CONEC and SHIFT DISCO !

Microstation – to – Field

To take data points from Microstation to the field, using the Leica GPS500 Rover

1. Begin by making a shape file of the points to be located. This is done from the File Menu → Export → SHP/MIF. When creating a shape file, only the points/poles that will be located should be on the drawing. All planimetrics, conductor lines, orthophotos, GIS faces, etc. should be deleted. It is best to make a new .dgn file for this.



2. Once the shape file is created, open GIS DataPRO.
3. Create a new project for this specific job.
4. Once inside the project, click on the Waypoints tab at the bottom of the left-hand box.
5. Create a new Waypoint Project for the points to be located.
6. Click the Import File button.
7. Select the shape file that you wish to import.
8. Once the shape file has been imported into waypoints, click on the Tools → Sensor Transfer. From here, expand the database → waypoints.
9. Right-click on the waypoints you wish to transfer and select Send To...

10. Click the PC Card option, making sure that the System500 option is selected and that the destination drive is the same as the PC Card.
11. After the waypoints have been exported onto the PCMCIA card, you are ready to use the Rover.

Using the Rover with waypoints

1. Once you arrive in the general vicinity of the area that you will be locating, assemble the GPS unit. Connect the Rover to the Satellite receiver pole and to the backpack unit. Turn the power on.
2. When the Rover is turned on, it will automatically begin Data Collection Mode. Press ESC to exit this mode and enter the main menu. From the Main Menu, press SHIFT then F4 to select CONEC. You may have to wait a few minutes until the unit will be able to connect. Usually when the cross-hairs appear in the upper left-hand corner the unit will be ready to connect. Be sure the unit is connected by looking at the lightning bolt at the top of the screen. If the lightning bolt is pulsing the unit is connected.
3. From inside the main menu, select the Data Navigation mode (Number 2 in the list).
4. There are several options for location, from North, from previous point, from Sun. If just locating one point, or if you are not familiar with the Navigation system, from North is the best mode.
5. Allow the unit to connect to several satellites and to begin receiving data. You will know when data is being received by the cross-hairs in the upper left-hand corner. When the circle around the cross hairs is gone, you are in survey mode and will receive the most accurate reading.



6. Once the cross-hairs appear, you may begin to locate your points. Walk until the In-Out and Left-Right directions are very near zero. You will know that you are close because the unit will begin to beep once you are within 1 foot of the point.

7. Move the pole to the location that causes the distances to read 0.0 or as close as you feel is accurate (usually within 0.3). The point at which the pole touches the ground will be the located point.

****Note: If the pole is not near vertical the located point will be directly below the receiver head.***

Field – to – Microstation

To collect data points in the field

1. With the GPS Rover fully assembled, extend the legs of the pole unit fully and press the On/Off button to turn on the Rover. The Rover will begin in Data Collection Mode. Press ESC to go to the Main Menu. Watch the Reg light on the modem. When the light turns green, press SHIFT then F4 to select CONEC. Be sure the unit is connected by looking at the lightning bolt at the top of the screen. If the lightning bolt is pulsing the unit is connected.
2. From the Main Menu, create a new data file that will be used for the point(s) to be located by selecting JOB, option 5 in the list, then NEW from the bottom toolbar. After this is complete, return to the Main Menu and enter Data Collection Mode by selecting option 1 from the list. The coordinate system that should be used is Tennessee Nad83 - 20. You may change this by pressing F6 to select the CSYS command in the bottom toolbar. Also, be sure to enter the correct codelist for the project you are starting (i.e. 69). Confirm that the information is correct then select CONT from the bottom toolbar. From this menu you will select the correct code for the type of data points you are wanting to collect (i.e. POLE for a Pole Shot).
3. By now the Rover should have had enough time to begin receiving data. You will know the Rover is receiving data by the cross-hairs located in the upper left-hand corner of the screen. When the circle around the cross hairs is gone, you are in survey mode and will receive the most accurate reading.

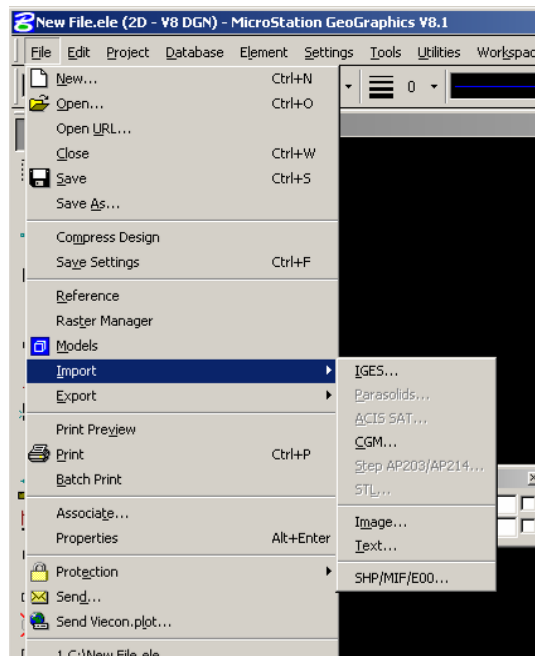


4. Once the Rover is receiving data, you are ready to collect points. Travel to the point to be located, enter any additional information, and check to see that you have a good signal by looking at the L1 and L2 fields at the top of the screen. You will receive the best signal when you are on the south side of the point you are going to collect. After you have the best signal press F1 to select OCCUPY from the bottom toolbar. This is in the lower left-hand corner.
5. After pressing OCCUPY, allow the Rover to receive enough points to accurately triangulate its position. When in Survey mode the unit will usually beep once and

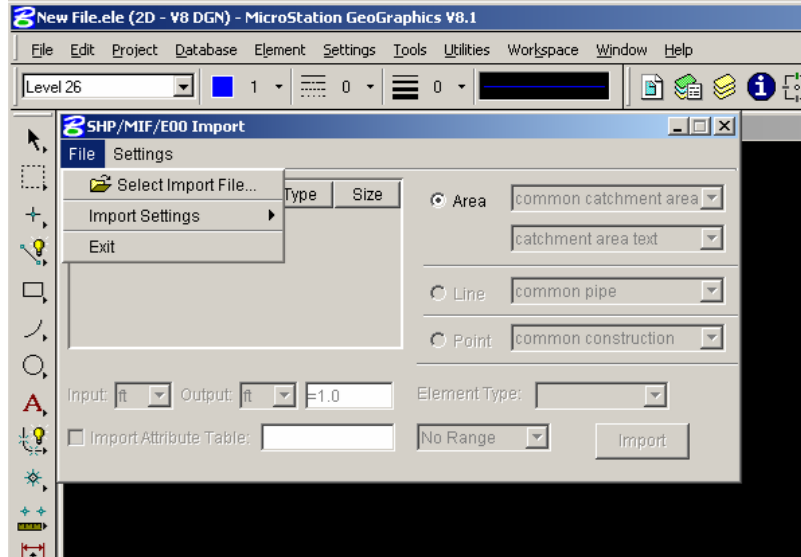
the point is collected, it will then return you to the code menu. When not in survey mode it is best to collect around 35 points. When you have received enough points press F1 to select STOP from the bottom toolbar, then select OK to store the point.

Converting data collected in the field into a Microstation file

1. After all points have been collected, remove the PCMCIA card from the backpack unit and place in the laptop slot or into the PCMCIA card reader on your PC.
2. Startup the laptop or your PC and open GIS DataPRO.
3. With DataPRO open, start a new project or open an existing one.
4. With the project open, Click File→Import→File. Select the file that contains the points collected.
5. Verify in the window that the points appear in the proper location.
6. Click File→Export→3D shapefile
7. Check the path that the file will be placed in. You do not want to forget where you put it!
8. With the shape file created, open Geographics. You may open an existing file or begin a new one.
9. Click File→Import→SHP/MIF/E00



10. Click File → Select Import File... and file the shapefile that was created from GIS DataPRO.



11. Once all shapefiles are loaded, click the Import button
12. Verify that all points are in the correct location. You may have to select the points and change their weight and/or color to make them easier to see.
13. Save your file.

Creating and Transferring Codes

How to create a new codelist using GIS DataPro

1. Open GIS DataPro and create a new project or open an existing one. From the toolbar at the top, Select Tools then Codelist Manager.
2. Select Codelist, then New Codelist from the toolbar at the top or right click in the white area on the left of the screen and click New. You will then be asked to name your codelist.
3. Select the codelist you created by double-clicking on its name in the list on the left. Now you may add codes by either selecting Code, New Code, from the toolbar at the top or by clicking in the empty Code field on the right.
4. After you have created your code(s) you can add attributes to them by selecting the code and clicking in the empty Attribute Name field on the right. When you have finished, Save your new codelist and exit GIS DataPro.

Transferring codelists from GIS DataPro to the Leica GPS Unit

1. Right click on My Computer on the desktop and select Explore. Find the file containing your codelists (i.e. C:\GDP_Data\Codelists) and double-click the folder with the name of the codelist that you wish to transfer.
2. Be sure the PCMCIA card is connected to the computer and copy the .CRF file in the codelists folder to the Code folder on the PCMCIA card.
3. Insert the PCMCIA card into the Leica GPS Rover and turn the unit on. Press ESC until you are in the main menu. Then Select Transfer from the list and press Enter.
4. Make sure you are transferring from the PC-Card to the Sensor and then select the codelist that you are wanting to transfer. Next, press F1 to select CONT and to transfer the file.
5. The codelist transfer should now be complete. You may select an existing job or create a new one and then change the codelist to the one you just imported.

Locating Points using Coordinates

To locate points by entering their coordinates

1. With the GPS Rover fully assembled, extend the legs of the pole unit fully and press the On/Off button to turn the unit on. The Rover will begin in Data Collection Mode. Press ESC to go to the Main Menu. Watch the Reg light on the modem. When the light turns green, press SHIFT then F4 to select CONEC. The unit will beep and display “Connection Established” when it is connected. Be sure the unit is connected by looking at the lightning bolt at the top of the screen. If the lightning bolt is pulsing the unit is connected.
2. You will need to create a new job to hold the points you will create. From the Main Menu, create a new data file that will be used to store the point(s) that you will enter by selecting JOB, option 5 in the list, then NEW from the bottom toolbar. When you are finished return to the Main Menu.
3. From the Main Menu, enter Data Navigation mode (Number 2 in the list). Select the job you just created and be sure the Coordinate System is set to Tennessee Nad83 - 20. You may change this by pressing F6 to select the CSYS command in the bottom toolbar.
4. Next, press Enter on the line where you can select the points. Then, select NEW at the bottom of the screen. This is where you enter the coordinates for your point. Press F1 for CONT when you are finished. Next, return to the Data Navigation screen. The point you just created will be listed and you will be locating it. You can change which point you are locating by selecting the current point and pressing Left or Right to scroll through the other points.
5. When you are finished locating, return to the Main Menu and press SHIFT then F4 to select DISCO. Then, you can turn off the unit.