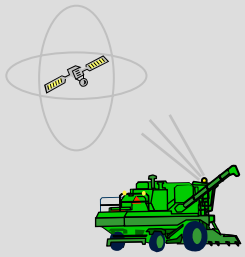
UT Extension
Precision Agriculture

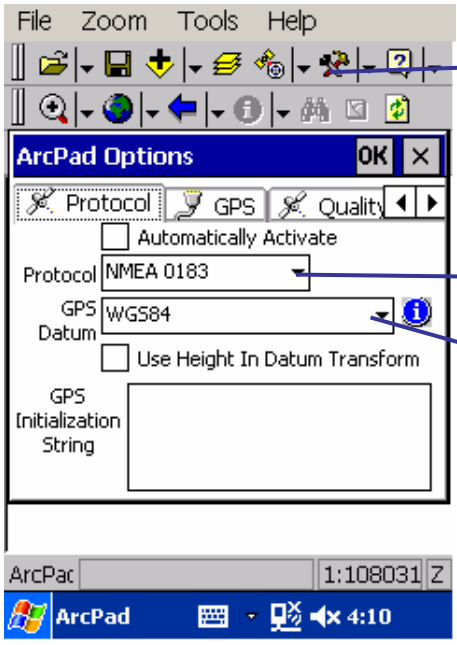
Connecting Your GPS CF Receiver to ArcPad

Michael J. Buschermohle, Professor
Biosystems Engineering and Environmental Science

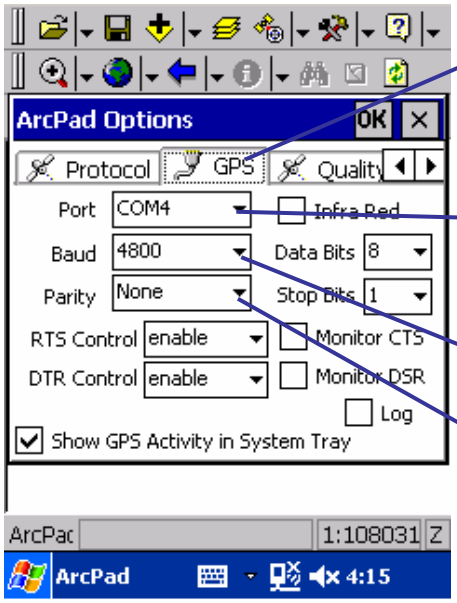


BEES 103

The first step in connecting your GPS Compact Flash (CF) receiver is to set the GPS communications parameters in ArcPad to match the parameters on your CF GPS receiver. These communications parameters are set in the ArcPad Options dialogue box.



1. Tap the Tools button on the Main toolbar to open the ArcPad Options dialog box. The Protocol page is used to specify the protocol, datum and other settings of your GPS receiver.
2. Tap the Protocol dropdown arrow and select the NMEA 0183 protocol
3. Tap the GPS Datum dropdown arrow and select WGS84.



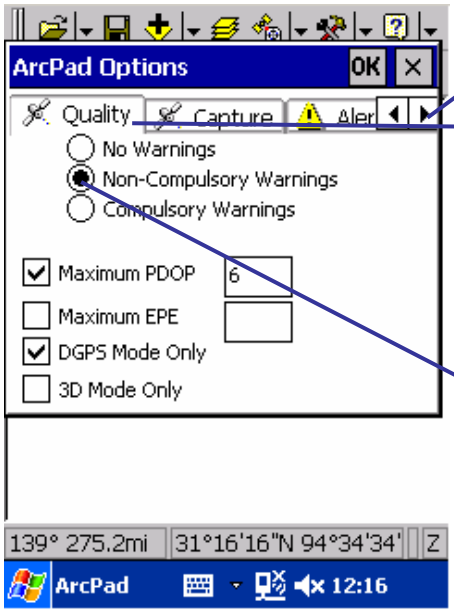
4. Tap the GPS page on the ArcPad Options dialog box to display the GPS page. The GPS page is used to specify the communication parameters of your GPS receiver.

5. Tap the Port dropdown arrow and select COM4. COM4 is the serial port on your Toshiba e800 that is connected to your GPS CF receiver.

6. Tap the Baud dropdown arrow and select 4800 from the dropdown list.

7. Tap the Parity dropdown arrow and select none from the dropdown list.

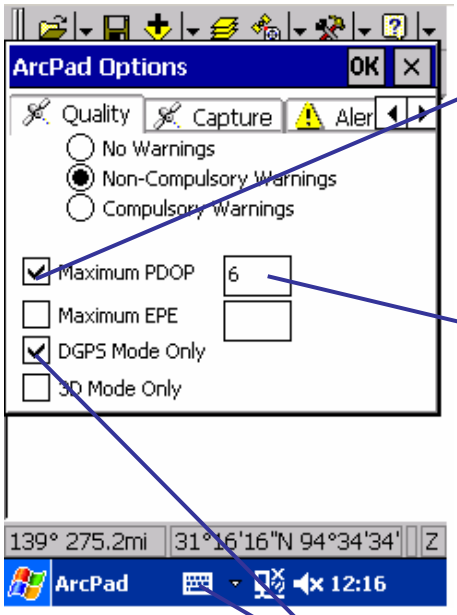
8. Set the remaining communication parameters to match the settings on this screen.



9. Tap the forward arrow until the Quality page appears in the ArcPad Options dialog box.

10. Tap the Quality page on the ArcPad Options dialog box to display the Quality page. The Quality page is used to specify quality parameters for your GPS receiver. These quality parameters only affect GPS data capture and alerts and not the GPS cursor, GPS Position Window or GPS Navigation.

11. Tap inside the circle to the left of Non-Compulsory Warnings. Selecting the Non-Compulsory Warnings option will display a message box anytime the incoming GPS coordinates do not meet your preset Quality parameters. This message box gives you the option of whether or not to use lower accuracy GPS coordinates.

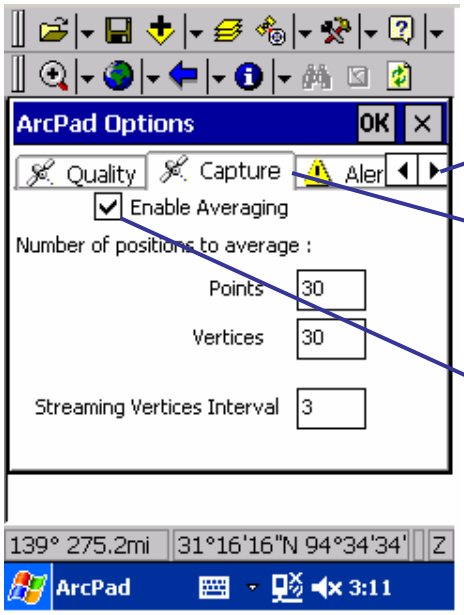


12. Tap inside the box to the left of Maximum PDOP. Position Dilution of Precision (PDOP) is the most commonly used measure of GPS accuracy. Position coordinates indicated by your GPS receiver with low PDOP values are more accurate than those indicated with high PDOP values.

13. Tap inside the box to the right of the Maximum PDOP. The maximum value you select will depend on where you are using the GPS receiver. For example, a PDOP of 5 may be suitable when scouting in an open field but may be too low when mapping points around tree lines or buildings. In general, a Maximum PDOP value of 6 is acceptable. Using the stylus and the provided keyboard, type 6 for Maximum PDOP.

14. Tap the keyboard icon to remover the keyboard from the screen.

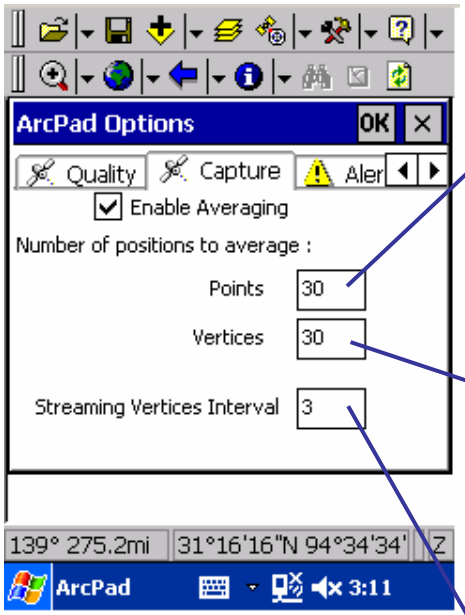
15. Tap inside the box to the right of DGPS Mode Only. This quality parameter sets ArcPad to display a warning message if the current GPS position is not a differentially corrected position when capturing a feature such as a point, line or polygon.



16. Tap the forward arrow until the Capture page appears in the ArcPad Options dialog box.

17. Tap the Capture page to display the Capture page. The Capture page is used to set data capture rules for your GPS receiver.

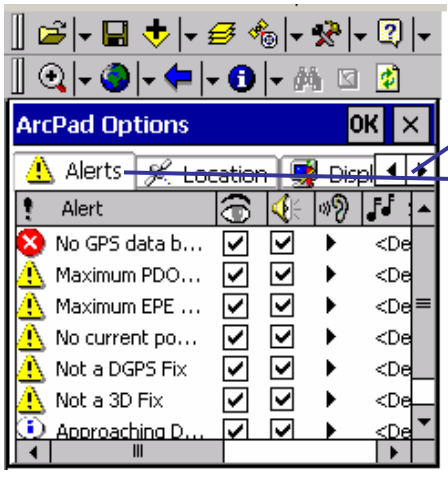
18. Tap inside the box to the left of Enable Averaging. When checked, averaging is enabled for the GPS capture of points and vertices.



19. Tap inside the box to the right of Points to enter the number of continuous GPS fixes you want to average when capturing a point feature with your GPS receiver. Averaging multiple GPS fixes will improve the accuracy of the captured point. It is recommended that at least 20 and up to 180 GPS fixes be used when averaging points. Using the stylus and the provided keyboard, type 30.

20. Tap inside the box to the right of Vertices to enter the number of continuous GPS fixes you want to average when capturing a vertex of a polyline or polygon feature. Averaging multiple GPS fixes will improve the accuracy of the captured vertex. It is recommended that at least 20 and up to 180 GPS fixes be used when averaging points. Using the stylus and the provided keyboard, type 30.

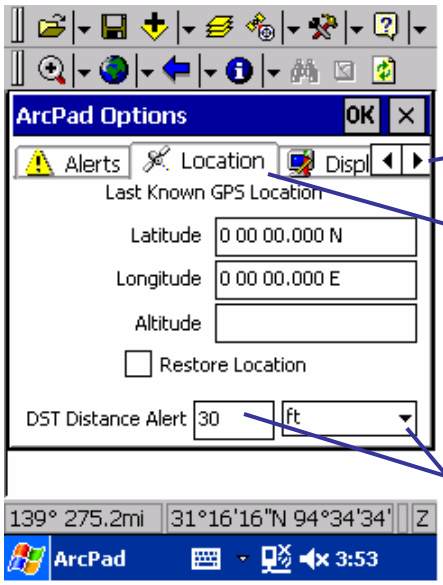
21. Tap inside the box to the right of Streaming Vertices Interval to enter the capture interval you want to use when capturing continuous vertices of a polyline or polygon feature with your GPS receiver. For example, with an interval of 3, you capture every third GPS position.



22. Tap the forward arrow until the Alerts page appears in the ArcPad Options dialog box.

23. Tap the Alerts page to display the settings. The Alerts page is used to configure alerts that notify you about various GPS quality or navigation conditions that occur when your GPS receiver is communicating with ArcPad. Each alert has a message and user-defined sound. A check inside the boxes next to the alert indicate that the message and or sound is active. Tapping

inside the boxes activates or deactivates the message and sound alerts.

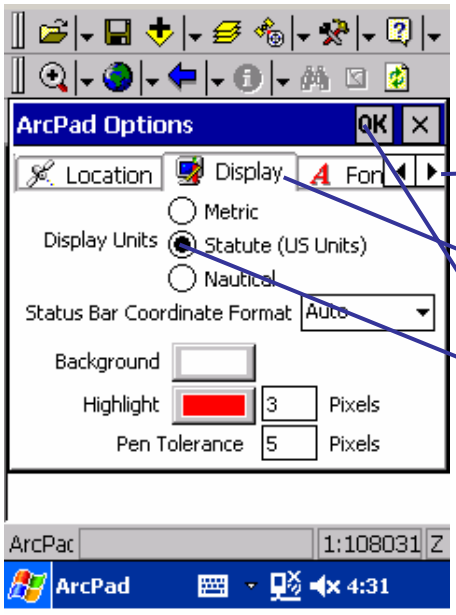


24. Tap the forward arrow until the Location page appears in the ArcPad Options dialog box.

25. Tap the Location page to display the settings. The Locations page is used to set a minimum distance from your current location to your desired location before displaying an alert when using your GPS receiver for navigation.

26. Tap inside the box to the left of the DST Alert. Using the stylus and the provided keyboard, type a value (i.e. 30).

27. Tap on the down arrow in the combo box to select the distance units. Scroll up or down until you locate ft and tap to select it.



28. Tap the forward arrow until the Display page appears in the ArcPad Options dialog box.

29. Tap the Display page to display the various display options in ArcPad

30. Tap inside the Statute circle to select Statute (US units).

31. Tap OK. ArcPad saves these communication parameters internally and you should not have to reset them again unless you want to change any of the settings.

32. Your GPS unit is now ready to be activated in ArcPad.