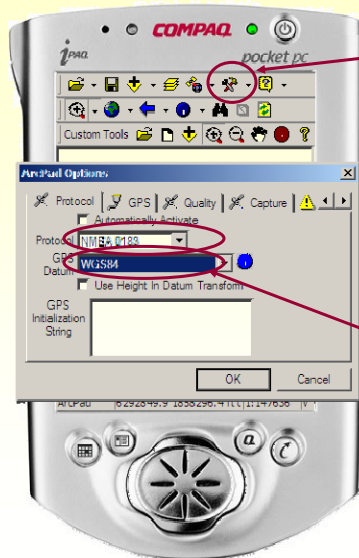


GPS Equipment



Setting the GPS Protocol



Tap the Tools button.

Tap the Protocol dropdown arrow to select the protocol used by your GPS receiver to output data (National Marine Electronics Association).

Select Datum

Protocol=NMEA 0183
GPS Datum=WGS84

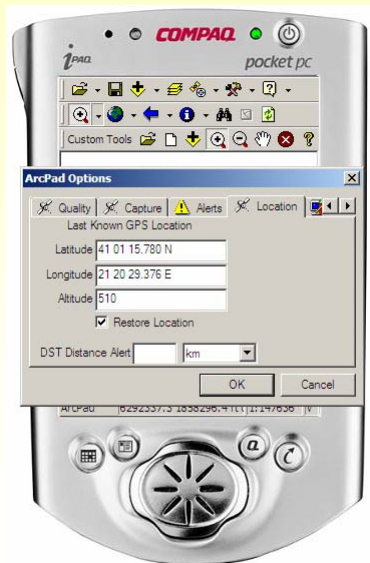
Setting Communication Parameters



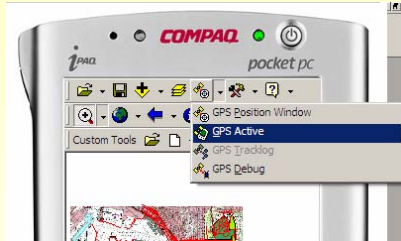
Port=COM4 (for iPAQ 3600/3700)
Baud=4800
Parity=None
Data Bits=8
Stop Bits=1

Port=COM5 (for iPAQ 3800)
Baud=57600
Parity=None
Data Bits=8
Stop Bits=1

Setting Location



Activating Your GPS



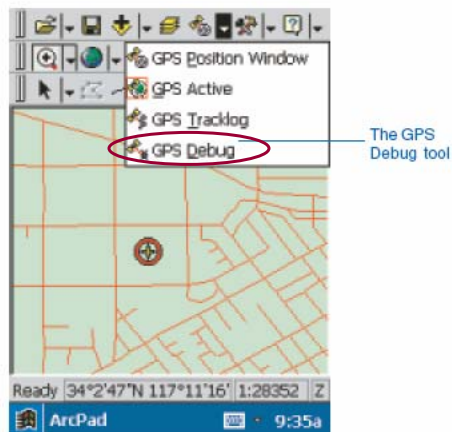
The GPS Active icon is highlighted with a red box when the GPS is active.

The GPS cursor is displayed when the GPS is active and is located at the last known or current GPS position.

The GPS cursor is shown with a slash when using the last known GPS position.

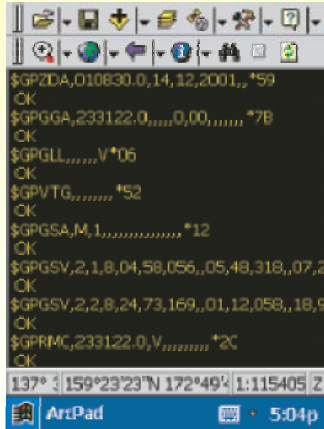


The Debug Tool



GPS Debug is useful for troubleshooting GPS connection problems.

GPS Debug for NMEA 0183



```
$GPZDA,010830.0,14,12,2001.,*59
OK
$GPGGA,233122.0,,,0,00,,,,,*7B
OK
$GPGLL,,,,,V*06
OK
$GPVTG,,,,,*52
OK
$GPGSA,M,1,,,,,*12
OK
$GPGSV,2,1,8,04,58,056,,05,48,318,,07,2
OK
$GPGSV,2,2,8,24,73,169,,01,12,058,,18,9
OK
$GPRMC,233122.0,V,,,,,*2C
OK
```

137° 159°23'23"N 172°49' 1:115405 Z

ArtPad 5:04p

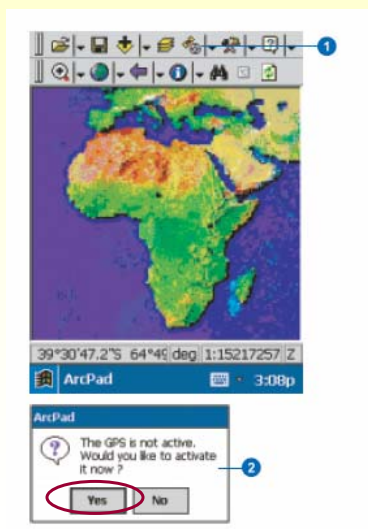
The GPS Debug window for NMEA 0183

NMEA 0183 sentences from the serial port are ASCII text.

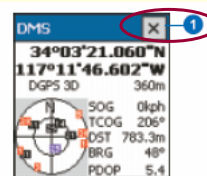
\$GPGGA, 233122.0, ,, ,,0,00,,, , , , *7B

Where the first field contains UTC time (23:31:22:0) the second and third is latitude, the fourth and fifth fields longitude, the sixth field contains the fix quality.

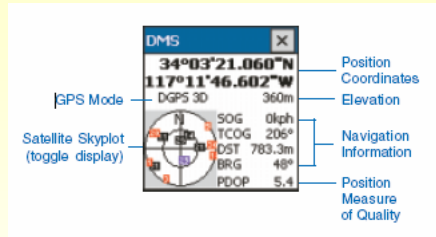
Opening and Closing the GPS Position Window



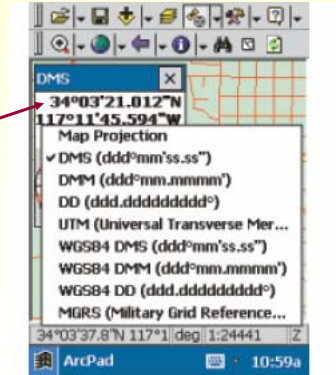
Closing



The GPS Position Window

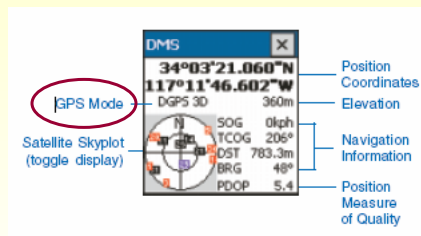


Some of the display fields have context if you tap and hold the field, a menu list will be displayed



Position Coordinates tap and hold menu

GPS Mode



Displays the type of position being calculated

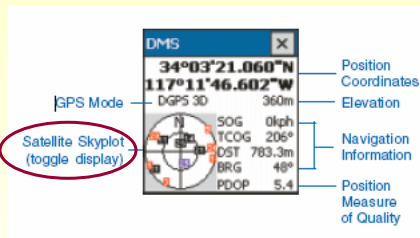
NOFIX → ArcPad is not receiving a position

2D indicates that three satellites are available and are being used to calculate position (x, y)

3D indicates that four satellites are available and are being used to calculate position (x, y, z)

DGPS indicates that real-time differential correction is being used.

Satellite Skyplot



Black indicates the satellite is available and used for calculating the GPS position

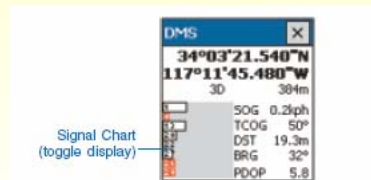
Blue indicates the satellite is available but not used

Red indicates the satellite is unavailable

The Skyplot shows a bird's-eye view of the position of each satellite. The outer circle represents the horizon (North is up); the inner circle represents 45° above the horizon; and the center point represents what is directly overhead.

Signal Chart

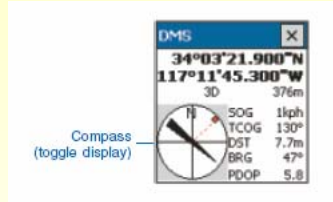
Tapping the Skyplot changes the display to the Signal Chart.



The Signal Chart shows a horizontal bar chart of the Pseudo Random Noise (PRN) numbers and relative signal strengths of the satellites in the almanac. A red bar indicates that the satellite is unavailable.

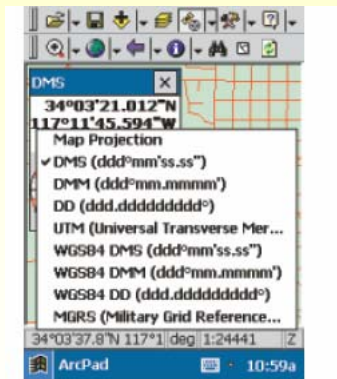
Tapping the Signal Chart changes the display to the Compass.

Compass



The Compass shows the GPS direction with a black arrow and the direction to the selected destination in red

Position Coordinates



Position Coordinates tap and hold menu

DMS: Latitude- longitude in degrees, minutes and decimal seconds (ddd°mm'ss.ss")

DMM: Latitude- longitude in degrees, and decimal minutes (ddd°mm.mmmm')

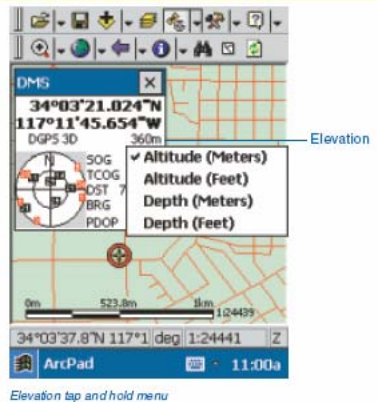
DD: Latitude- longitude in decimal degrees (ddd.dddddddd°)

UTM: Universal Transverse Mercator coordinates and zone

WGS84 DMS: Latitude- longitude in degrees, minutes and decimal seconds (ddd°mm'ss.ss"), using WGS84 datum

MGRS: The Military Grid Reference System coordinate

Elevation



Altitude (Meters)

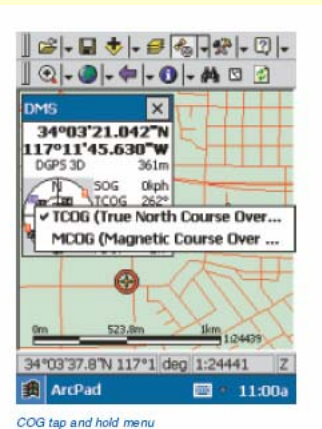
Altitude (Feet)

Depth (Meters)

Depth (Feet)

The altitude is only displayed if the GPS Mode is 3D.

Navigation Information



SOG: Speed Over Ground – is the actual speed the GPS receiver is moving over ground

COG: Course over Ground - is the direction the GPS receiver is moving and corresponds to the compass arrow

DST: The distance from the current GPS position to the selected destination.

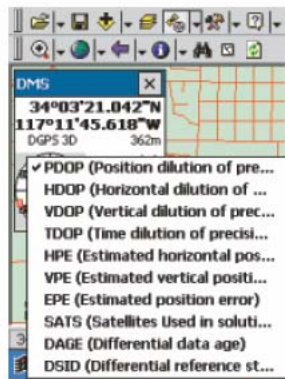
BRG: The bearing from the current GPS position to the selected destination (red destination in compass)

COG has the following:

TCOG: True North Course Over Ground

MCOG: Magnetic North Course Over Ground

Position Measure of Quality



Position Measure of Quality tap and hold menu

Position Measure of Quality display the following:

PDOP: Position Dilution of Precision

DOP: Horizontal Dilution of Precision

VDOP: Vertical Dilution of Precision

TDOP: Time Dilution of Precision

HPE: Estimated Horizontal Position Error

VPE: Estimated Vertical Position Error

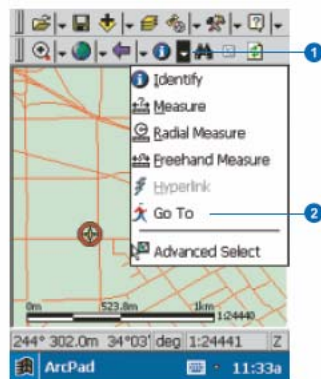
EPE: Estimated Position Error

SATS: Satellites used in solution

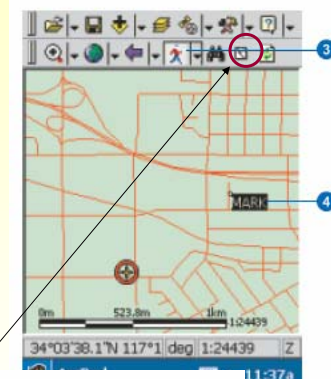
DAGE: Differential data age

DSID: Differential reference station ID

Navigating with GPS

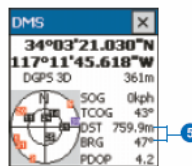


Clear MARK



Go To button is depressed

Tap the map to select a navigation destination

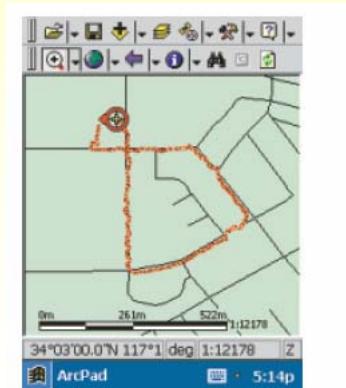


Use the GPS Position Window to view the distance (DST) and bearing (BRG)

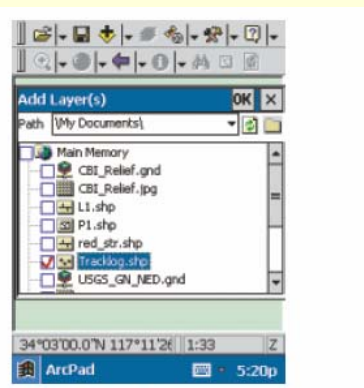
The GPS Tracklog

The GPS Tracklog can be started or activated when the GPS is active.

The GPS Tracklog shapefile can be added to an ArcPad map by using the Add Layer(s) dialog box).

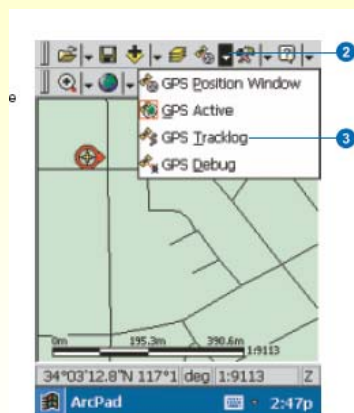


The GPS Tracklog



The Add Layer(s) dialog box

Starting the GPS Tracklog



The GPS Tracklog Tool in the GPS dropdown list will be disabled if the GPS is not active

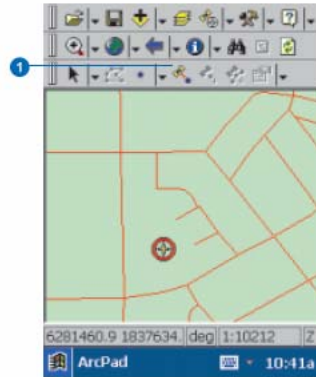
Use the Clear Button in the GPS Tracklog's layer properties to delete any previous tracklog points or start a new tracklog shapefile.

Creating Point Features with GPS

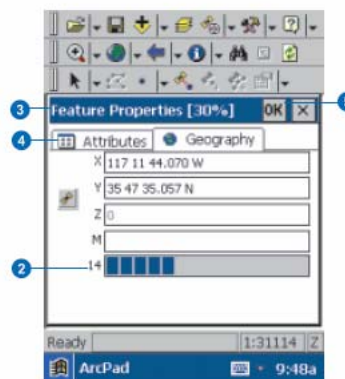
Creating point features with a GPS

Creating a point feature using the incoming GPS coordinates involves the following steps:

1. Select a point layer for editing in the Layers dialog box.
2. Activate the GPS.
3. Tap the GPS Point button on the Edit/Drawing toolbar to create a point feature.
4. Type in attributes for the new point feature.



Creating Point Features with GPS



Using ActiveSync



Using ActiveSync

