ULTRA-RUGGED
FIELD PC

GPS EXPANSION POD

GPS Expansion Pod

The GPS Expansion Pod integrates the Trimble Lassen LP GPS receiver with the Field PC. The Field PC remains fully rugged when the GPS Expansion Pod is attached. With the Field PC and GPS Expansion Pod, you can collect GPS positions using an appropriate Windows Mobile application program. A compact 3.3 V active micropatch antenna is mounted to the top of the Field PC to receive the GPS signal. This document explains how to use the GPS Expansion Pod.

The Lassen LP receiver is a high-performance, low power, micro GPS receiver that supports both Trimble TSIP and NMEA protocols with autonomous accuracy of 5–10 meters, or 2–5 meters after differential correction. The GPS Expansion Pod is used in conjunction with the following programs:

- GIS/GPS programs for Windows Mobile 6 including ESRI ArcPad™, TerraSync®, Starpal HGIS™, and others.

  Note: Differential correction is only available if you are using ESRI ArcPad™ with GPS Correct and TerraSync®. You must have the differential correction program for your desktop PC.

- Third party applications with the ability to read NMEA strings.

- DataPlus™ Professional CE.

Attaching the Antenna Bracket

Before you can use the GPS Expansion Pod, you must attach the antenna bracket using the GPS Pod Setup Program. To do this, complete the following steps:

1. Remove the antenna bracket assembly from the bag and loosen the two thumbscrews located at the bottom of the mount.

2. Remove the stylus from the Field PC.

3. Insert the antenna bracket mount by placing the attached stylus into the top of the Field PC. Slide the metal cover into the stylus slot so that the stylus fits into place.

4. Make sure the rubber stylus holders are not pressed inward or they may pop the antenna bracket out of the stylus holder. Remove the Field PC's connector protector to make this step easier.

5. Place the two knobs on the end of the antenna bracket into the screw holes located above the communication ports of the Field PC.

6. Tighten the thumbscrews on the antenna bracket so that the bracket is securely fastened into place. You want the thumbscrews to be snug, but do not over-tighten them.

7. Attach the antenna on the antenna bracket.

8. Remove the protective cap from the connector labeled GPS ANT (save the cap for future use). Screw the antenna cable into the Expansion Pod.

You have completed the steps to attach the antenna bracket to the Field PC GPS Expansion Pod.
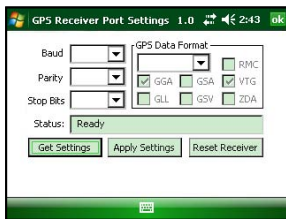
GPS Pod Setup Program

The GPS Pod Setup program is factory installed on your Field PC. The program allows you to configure the parameters of the internal GPS receiver to accommodate the various GIS/GPS programs that run on the Field PC.

The Field PC communicates with the internal GPS receiver. The GPS Pod Setup program allows you to change the serial port settings being used (i.e. baud rate, parity, stop bits), and to select between TSIP and NMEA data output formats.

Specifying GPS Receiver Port Settings

To set up the parameters on the GPS receiver Port Settings complete the following steps:

1. Go to *Start > Programs > GPS Pod Setup*, and the *GPS Receiver Port Settings* screen opens.

At the bottom of the screen, there are three function buttons:

- Get Settings
- Apply Settings
- Reset Receiver

Get Settings

The *Get Settings* button is used to see the receiver's current settings without changing the settings. Pressing *Get Settings* performs a search for the GPS receiver, the search can take up to one minute to find the settings. Once the search is complete, the current settings for the GPS receiver are displayed.

Apply Setting

Tap on the *Apply Settings* button to save and apply new settings. To make sure that your settings are applied correctly, press *Get Settings* to check the parameters.

Reset Receiver

The *Reset Receiver* button returns all of the settings on the GPS receiver to their default setting. This function enables you to start over in the event that an error was made.

2. Tap on the *Get Settings* button and wait approximately one minute for the settings to appear.

3. Record the settings for the following:
COM Port: COM3—not changeable
Protocol:
Baud:
Parity:
Data Bit: (Note: Data Bit is always set at 8 and is not shown in the set up)
Stop Bit:

The following are the default GPS pod settings:
COM Port: COM3 —not changeable
Protocol: TSIP
Baud: 9600
Data Bit: 8—not changeable
Parity: None
Stop Bit: 1

4. Access the setup or configuration menu in the GPS program.

5. Change the parameters on the GIS/GPS configuration menu of the program to match the default GPS Expansion Pod settings or change the parameters on

your Field PC to match your program. If you change the settings on your Field PC, tap on *Apply Settings*.

The COM Port and Data Bit are set and not changeable on the Field PC. All GPS programs that offer these settings to be changed must be set to the following Field PC settings.

COM Port: 3

Data Bits: 8

6. Connect the GPS. The Field PC must be outside in clear sky conditions (this means free from tree foliage, buildings, power lines, etc.) to receive a new GPS almanac. The receiver can take up to 20 minutes to establish and receive the almanac.
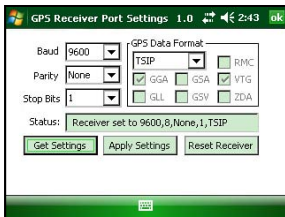
Note: If your parameters do not match, some GPS programs (i.e. ArcPad, TerraSync) produce an error message when attempting to activate the GPS Expansion Pod. This error means the communication parameters in the GPS Setup Program do not match the GPS Expansion Pod. Go back to the setup page and check to make sure those settings are the same settings as the settings on your Field PC's GPS Receiver Port Settings screen. If they are not the same settings, change them so they match.

GPS Data Formats

In the *GPS Pod Setup* program, you can set up the receiver in either the TSIP or NMEA GPS data format.
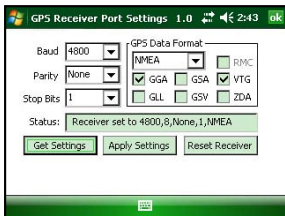
TSIP Format

The TSIP is the default setting for the GPS Expansion Pod. The settings are COM Port: COM3, Protocol: TSIP, Baud: 9600, Parity: None, Data Bit: 8, Stop Bit: 1.

NMEA Format

The NMEA format does not have any default settings and must be selected manually.

When NMEA is selected, you have the ability to enable or disable certain NMEA packet types.

After the settings have been selected, tap on the *Apply Settings* button to save the new settings. Tap on the *Get Settings* button to bring up the GPS pod current settings to double check them.

Reviewing and Editing the Receiver Parameters

Once you determine which data format you are going to use, follow these steps to review and edit the parameters as needed:

1. Click on the *Get Settings* button to reset the parameters to their default setting.

2. Change the parameters, if necessary, by clicking on the down arrow on the right of the *Baud, Parity, Stop Bits,* and/or *GPS Data Format* box to bring up a list of setting options, and click on the setting you want.

3. Click on the *Apply Settings* button.

4. Click on the *Ok* in the top right corner to minimize the program.

5. To completely close the program go to *Start > Settings > System* tab *> Task Manager.* Click *End Task.*

Tips for Using the GPS Expansion Pod

Keep the following tips in mind while using the Field PC with the GPS Expansion Pod:

- When attempting to receive GPS signals, get the clearest view of the sky as possible. Obstructions such as buildings, trees, mountains, and your body can keep signals from reaching the receiver.

- Do not cover the antenna with anything while you are using the system.

- The antenna can be mounted on a vehicle or a pole, a longer antenna cable is required to do this (call your Sales Account Manager).

- Using the GPS Expansion Pod, and GIS or GPS software running on the Field PC may cause the Field PC battery to drain at a faster rate. This rate depends on the software and how much processing is taking place.

- The PC card slot is accessible while the GPS Expansion Pod is attached to the Field PC. Refer to the Field PC Owner's Manual for details on how to use it. There is a flat, brown flex cable that is part of the expansion pod that is visible when you open the pod door. Do not twist, bend, or break this cable while you are using the PC card slot.

- If you remove the antenna, place the protective cap over the antenna connector to keep dirt and moisture out.

GPS Antenna Bracket Removal

The GPS antenna bracket can be removed and reattached depending on your needs. To remove the GPS antenna bracket from your Field PC, complete the following steps:

1. Unscrew the antenna cable from the Field PC expansion pod.

2. Loosen the thumbscrews on the antenna bracket so that the antenna bracket and the two knobs at the end of the antenna bracket are no longer securely fastened.

3. Pull the antenna bracket off of the Field PC.

The antenna bracket can be reattached to the Field PC by following the instructions in the *Attaching the Antenna* section.

GPS Installation Program

The GPS Setup Program is installed on your Field PC before it is shipped. In the event that the GPS program gets removed from your Field PC and needs to be reinstalled, use the GPS installer on the User Documentation and Install CD shipped with the Field PC.