

## *RS500 RTK Base*

*Setup Guide for RS500 & Sprint PCS Motorola Timeport P8167*

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## 1.0 About this Quick Guide

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### *Introduction*

This Quick Guide is designed to provide a step by step guide to configuring:

- The Sprint PCS Motorola Timeport P8167 mobile phone for use with the **RS500 Reference Station Sensor** for RTK Broadcast
- A Real Time Reference Configuration for use with a mobile phone

This quick guide assumes that the user is familiar with general GPS surveying procedures and real time applications.

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### *Firmware Version 3.0*

This quick guide has been designed for System 500 – Firmware Version 3.0. If using a different firmware version, you may notice slight differences in the menu commands.

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### *User Manuals*

A number of user manuals are available on the software CD. These manuals are provided in Adobe Acrobat format, along with the Adobe Acrobat reader. The user manuals contain a wealth of information on the System 500; including system specifications and operation procedures for real time, as well as post-processed static, rapid static, and kinematic surveys.

More detailed information, relative to real time surveying, is included in the following Leica manuals:

**GPS Equipment User Manual** – provides a general system overview, and contains information on technical specifications, and care and usage of the equipment.

**Getting Started with Real Time Surveys** – contains instructions on equipment setup and procedures, specific to real time surveying.

**Technical Reference Manual** – this comprehensive manual provides detailed information on nearly all aspects of the System 500, including many of the procedures mentioned in this quick guide.

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## 2.0 Overview of the Sprint Motorola Timeport P8167

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### Introduction

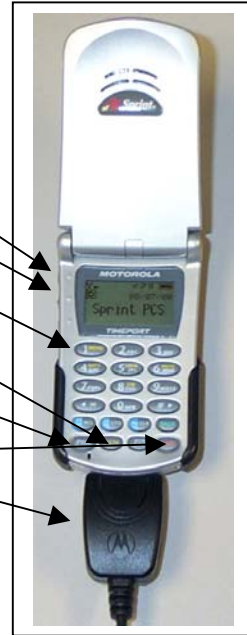
This section covers the steps necessary to configuring your Sprint Motorola Timeport P8167 mobile phone to be used at the Base Station

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### Phone Overview

The picture on the left shows the layout of the phone. All the keys needed are shown:

- Scroll Key
- Selection Key
- Menu Key
- Function Key
- Power Key
- End Key
- Data Cable







### Important Note

The data cable supplied with the phone needs to be connected as shown in the picture above. This tells the phone that it is in Data Mode.

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### 3.0 Sprint Motorola Timeport P8167, Reference Station Setup

Step	Action	Display
1	<p>Connect the supplied data cable to the data port on the underside of the phone.</p> <p>Turn the phone on by pressing the <b>PWR</b> (power) key.</p> <p>Press the <b>FCN</b> (function) key and then the <b>MENU</b> key on the phone keypad and use the lower <b>SCROLL</b> key on the side of the phone to scroll to menu item "Phone Options".</p>	
2	<p>Press the <b>Select</b> key on the side of the phone to go to menu item "Data Setup".</p>	
3	<p>Press the <b>Select</b> key on the side of the phone to go to "Voice Only".</p> <p>Use the <b>SCROLL</b> key on the side of the phone to scroll to menu item "Incoming Data Only".</p>	
4	<p>Press the <b>Select</b> key on the side of the phone. You will see the message "No Incoming Voice Calls".</p> <p>Press the <b>END</b> key on the keypad. You will now get the message "Data Ready".</p> <p>The phone setup is now complete and ready to be used for a System 500 RTK Base Station</p>	

**Important Note** Other than connecting the supplied data cable to the underside data port there is no setup required for the Rover Mobile phone

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## 4.0 RS500 - PCS Configuration

**New Configuration** This section lists the steps necessary to create a RS500 RTK Base Configuration to use a Mobile Phone as the data link.

Step	Action	Display
1	Connect a TR500 terminal to the RS500 and turn it on. You will see the RS500 Main screen.  Press the <b>CONFIG</b> key on the TR500 terminal	
2	In the CONFIGURE screen select <b>4 Interfaces</b>	
3	From the <b>CONFIGURE\ Interfaces</b> screen select <b>3 NMEA Output</b> to allow access to the System devices and configuration	




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## 4.0 RS500 PCS Configuration

Step	Action	Display
4	<p>From <b>Configure\ NMEA Message Output</b> screen Select Use <b>Device Yes</b> using the arrow keys on the TR500</p> <p>Set Port Messages to <b>1 *RS232</b></p> <p>Press <b>F5 DEVICE</b> to edit device setup</p>	
5	<p>Scroll down to the <b>*Modem Device</b> and press <b>F3 EDIT</b> to edit the Modem device</p>	
6	<p>Check your port settings as shown:</p> <p>Press <b>F4 OPT</b> to setup Sprint PCS Phone device</p>	

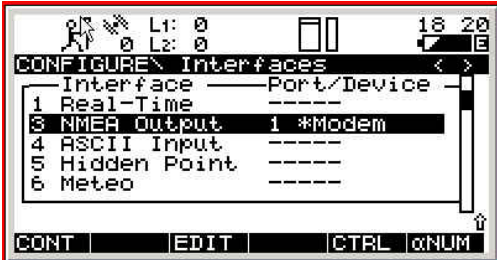


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## 4.0 RS500 - PCS Configuration

Step	Action	Display
7	Use the arrow keys on the TR500 to toggle to The Sprint PCS P8167 selection. This setting Works with most PCS phones.	 <p>The screenshot shows the 'CONFIGURE\ Modem Options' menu. The 'Type' field is set to 'Sprint PCS P8167'. Other fields include 'Init', 'Dial', 'Hangup', and 'Escape'. At the bottom, there are 'CONT' and 'SET+U' options.</p>
8	Press the F1 CONT key 5 times to return to the main RS500 Screen.	 <p>The screenshot shows the 'MAIN\ ' menu with the following options: '4 Utilities...', '5 Job', '6 Configure', and '7 Transfer...'. A mouse cursor is pointing at '4 Utilities...'. At the bottom, there is a 'CONT' option.</p>
9	Press the CONFIG key on the TR500 and select <b>4 Interfaces</b>	 <p>The screenshot shows the 'CONFIGURE\ Default.cnf' menu with the following options: '1 Survey', '2 Operation', '3 General', and '4 Interfaces'. At the bottom, there are 'CONT', 'STORE', and 'CONFG' options.</p>

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## 4.0 RS500 - PCS Configuration

Step	Action	Display
10	Select <b>3</b> NMEA Output from the menu	 <p>The screenshot shows a terminal window with the title 'CONFIGURE\ Interfaces'. It displays a list of interface options: 1 Real-Time, 3 NMEA Output (highlighted), 4 ASCII Input, 5 Hidden Point, and 6 Meteo. The 'Port/Device' column shows '1 *Modem' for the selected option. At the bottom, there are control buttons: CONT, EDIT, CTRL, and αNUM.</p>
12	Use the TR500 arrow keys to set <b>NMEA Message Output</b> to <b>NO</b> as shown  Press <b>F1 CONT</b> until you get to the RS500 Main Menu	 <p>The screenshot shows a terminal window with the title 'CONFIGURE\ NMEA Message Output'. It displays 'Use Device: NO' with a mouse cursor pointing to the 'NO' option. At the bottom, there is a 'CONT' button.</p>
13	Remove the TR500 terminal and disconnect power from the RS500.  <b>NOTE: - DO NOT turn of the RS500 using the OFF button on the TR500 or RS500 sensor. This will undo all your changes made.</b>	 <p>The screenshot shows a terminal window with the title 'MAIN'. It displays a list of main menu options: 4 Utilities..., 5 Job, 6 Configure, and 7 Transfer... A mouse cursor is pointing to the '6 Configure' option. At the bottom, there is a 'CONT' button.</p>

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## 4.0 RS500 PCS Configuration

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Step	Action	Display
14	<p>Connect the RS500 to the <b>ControlStation</b> software.</p> <p>Reconnect power to the RS500 sensor and program the RS500 using <b>ControlStation</b> and setup port 1 for RTK using appropriate message (Leica, CMR or RTCM)</p> <p>The RS500 is now ready to accept incoming Rover calls to establish a RTK link.</p>	

