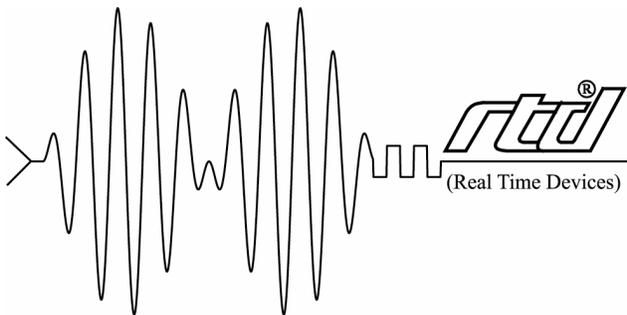


APPLICATION NOTE

Upgrading Firmware on iTrax02/08 GPS Modules



RTD Embedded Technologies, Inc.
"Accessing the Analog World"®

SWM-640020013
rev B

APPLICATION NOTE

Upgrading Firmware on iTrax02/08 GPS Modules



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Revision History

01/05/2004	Revision A issued
01/10/2006	Revision B, additions to instructions to use the latest RTD software release.

Published by:

RTD Embedded Technologies, Inc.
103 Innovation Blvd.
State College, PA 16803-0906

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Introduction

To Upgrade the Firmware on your RTD board containing an iTrax02/08 GPS module, (includes the GPS6160, the COM17045, the COM17035 and the COM27190.) you will need:

- A Windows computer with an extra unused COM port in it.
- The latest RTD Drivers and Software for your board.
- The Fastrax GPS Workbench software.
- The firmware to be downloaded.
- A soldering iron.

You can download the latest drivers for your board from <http://www.rtd.com>

You can download the GPS Workbench software from Fastrax at <http://www.fastrax.fi>. Select the downloads option from the support menu on the main page. You can also download the latest firmware for the card from the page. Make sure you get the firmware for the iTrax02/8.

Procedure

First install the RTD board into the Windows computer using the provided instructions. Next install the RTD software for the board and run the software to be sure communication with the board is working. Change the mode to iTalk at this point. IMPORTANT: now change the COM port used in the software to the unused COM port BUT LEAVE THE COM PORT ADDRESS at the correct setting*. Next, exit the RTD software and install the GPS Workbench software. Run the GPS Workbench software. On the 'Tools' menu there is an option called 'Options' Select it. On the pop up dialog is an option for the COM port to use. Select the correct COM port, then close the GPS Workbench software and re-open it. Finally select 'Connect' from the 'File' menu. You may get a message about reconfiguring the port – this is fine. You may also get a warning about a version mismatch; that too is fine. If you are able to get connected then go to the next step.

Exit the GPS Workbench software. Shut down the system and remove the GPS card from the stack. On the card will be two groups of 3 solder pads called B1 and B2. Currently B1 is not connected and B2 is connected across pads 2 and 3. You need the change the solder blobs on these pads so that B1 is shorted across pads 2 and 3 and B2 is shorted across pads 1 and 2. Replace the card in the stack and restart Windows.

Now, run the RTD GPS software. Do not attempt to do anything else with the software at the moment, just start it. Then start the GPS Workbench software. DO NOT ATTEMPT TO CONNECT TO THE GPS AT THIS TIME. Select the 'Program iTrax Flash Memory' option from the 'Tools' menu. Select the flash program file you wish to load. The next menu that pops up will tell you to do some things with the iTrax module and will wait for you. Do not follow the directions on this dialog, while it is waiting switch to the RTD GPS Software and press the 'Reset' button on the main page. Look at the GPS Workbench software to see if it has starting programming (if not press reset again on the RTD software). When programming starts the Workbench software and RTD software may appear to hang. If it is possible to do so, close the RTD GPS Software. Wait for programming to complete (it can take up to 3 minutes). Shut down the system and remove the GPS card.

Adjust the Solder blobs so that they are in their original configuration. That is: B1 is not shorted to any pad. And B2 is shorted between pads 2 and 3.

Reinstall the card in the system, start Windows and run RTD's GPS Software. Select the correct COM port again. You should see GPS data start streaming in.

Upgrade is complete!

*It is necessary to switch to an unused COM port so that there is no conflict later when running the GPS Workbench software alongside the RTD GPS Software. We only need the 'Reset' to work which uses the Base Address to communicate with the card and not the COM port itself.