

## Setting the data-logging interval of a Trimble 5700 GPS receiver

This Technical Tip provides instructions for setting the data-logging interval of a Trimble 5700 GPS receiver (hereinafter referred to simply as a Trimble 5700) to an interval other than the default 15 seconds. It is also possible to set the elevation mask to a value other than the default 13 degrees.

It is expected that these instructions will also work with the Trimble R5 and Trimble R7 receivers but we have no way of testing that. Please advise Inland GPS of any experience you may have attempting to configure either of those models using these instructions.

The Trimble 5700 and similar models have a **Data** button that initiates logging postprocessing data to the receiver's internal memory, specifically a removable CompactFlash memory card. This feature is useful because it allows starting data logging without having to have a data collector at the receiver.

These instructions are directed toward configuring the Trimble 5700 so the data-logging sessions are started manually by pressing the button. It is also possible to configure the receiver so a data-logging session starts automatically when the receiver is powered up and tracking four or more satellites, as noted below.

This procedure requires some basic Windows skills such as using a computer mouse or pointer, etc.

Because web URLs can and do change, in most instances this document does not contain actual hyperlinks to resources outside the control of Inland GPS. For those items this document provides general navigation information that should not quickly go out of date. Please advise Inland GPS if you have trouble finding any of the required files.

These instructions presume you have a recent version of Trimble's GPS Configurator utility installed on your computer.

The latest version of GPS Configurator is available from Trimble's web site at <http://www.trimble.com>, then follow the hyperlink sequence [Support & Training / Support A-Z List / GPS Configurator / Downloads](#). There you will also notice a hyperlink to a couple of archived older versions.

These instructions were prepared using a Windows 7 Professional x64 computer with a USB-to-serial adapter. The computer's User Account Control (UAC) was set to the most-sensitive **Default – Always notify me when:** setting. The GPS Configurator software used was Version 4.10 (Build 4 – 20 March 2013). The Trimble 5700 used happened to have Version 1.24 firmware, an older version released in January 2003.

The steps are as follows:

### 1. Preparing the receiver

Achieving our desired results, specifically setting the data-logging interval to something other than the default 15 seconds, requires a power-up configuration file (named **POWER\_UP.CFG**) be installed in the receiver. Operations such as updating the firmware in or performing a full reset of the receiver will purge any **POWER\_UP.CFG** file or other configuration file(s) in the receiver. If you are going to update the receiver firmware it would save time and effort to do that update before creating and installing the **POWER\_UP.CFG** file.

Although not necessary, it does not hurt anything to perform a full reset of the receiver before beginning this procedure. That way the user can be confident that no previous configuration artifacts are hindering the successful completion of this procedure.

It is also necessary to have a formatted CompactFlash memory card in the Trimble 5700 before starting this procedure.

### 2. Establishing necessary connections to the receiver

The Trimble 5700 must be powered up during this procedure, either by internal batteries or an external power source.

It is also necessary to have a serial-data connection between the Trimble 5700 and the computer running GPS Configurator. Port 2 on the Trimble 5700 is commonly used and can always be expected to work.

Experience indicates that this procedure works much better and more predictably if the Trimble 5700 is actually tracking both L1 and L2 on four or more GPS satellites while connected to GPS Configurator. In several attempts it was possible to achieve desired settings configuration without tracking satellites, but there were also some unsuccessful attempts. Therefore it is recommended to have the Trimble 5700 connected to a GPS antenna and tracking four or more satellites (red **SV Tracking** LED flashing slowly) during this process.

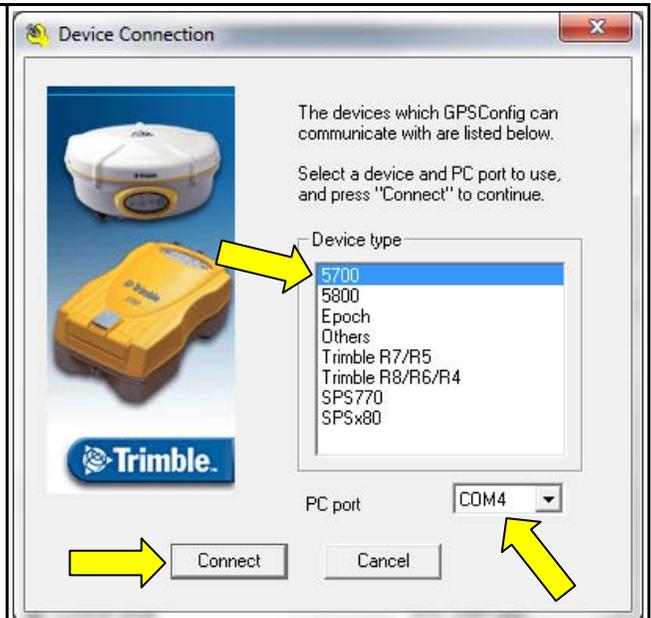
### 3. Starting GPS Configurator and connecting to the Trimble 5700

Start GPS Configurator by double-clicking its shortcut. The **Device Connection** dialog will appear as shown at right.

Under **Device Type**, click the appropriate model designation (**5700** in this case) to highlight that selection.

To the right of the PC port label, select the COM port that is connected to the Trimble 5700. In our situation that happened to be COM4, but the user needs to select the correct COM port on their computer.

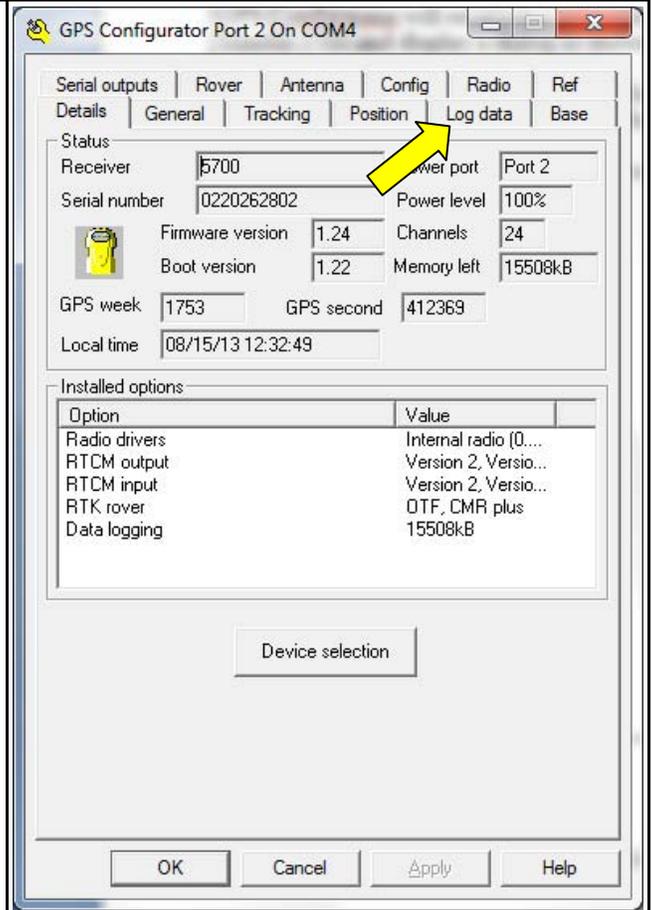
Click the **Connect** button.



GPS Configurator will establish a connection with the Trimble 5700 and display a dialog as shown at right. This time the **Details** tab came up first; your results may vary.

There is much useful information accessible via GPS Configurator, but we will concentrate on the task at hand.

Click on the **Log data** tab to bring up the next dialog.



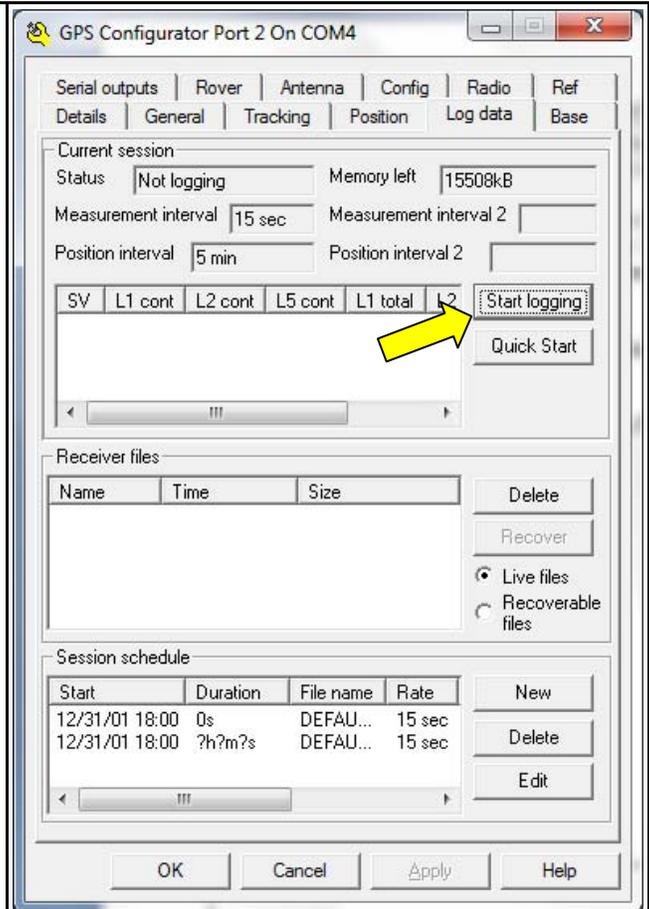
#### 4. Configuring the Trimble 5700 so it logs data at the desired interval

You will notice in the dialog at right that the receiver is not logging data and the measurement interval is 15 seconds.

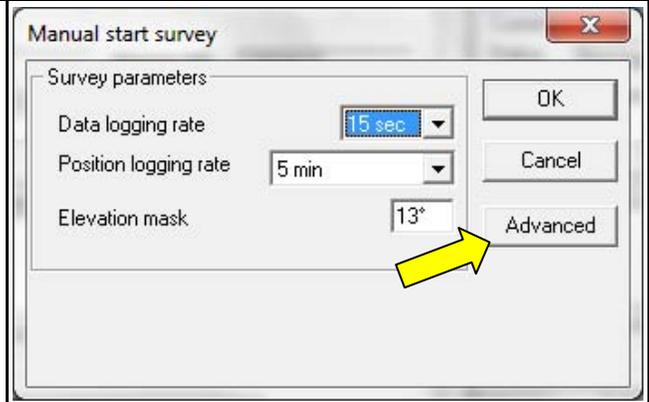
Since we performed a full reset of this Trimble 5700 before starting the procedure there are no receiver files at this time. Your receiver may still contain files; that should not affect the final results.

The **General** tab would show that the default elevation mask is 13 degrees.

Click the **Start logging** button to open the **Manual start survey dialog** shown in the next row.

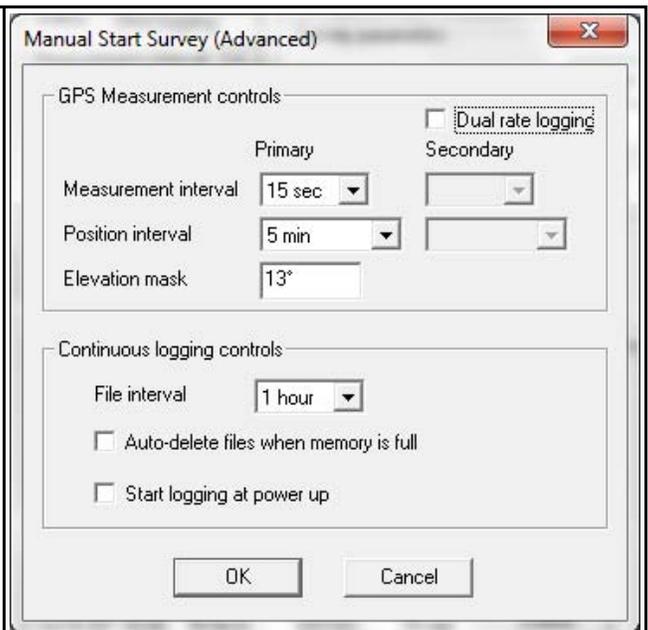


Click on the **Advanced** button.



The **Manual Start Survey (Advanced)** dialog now appears.

Here we see the default values as established by the receiver firmware.



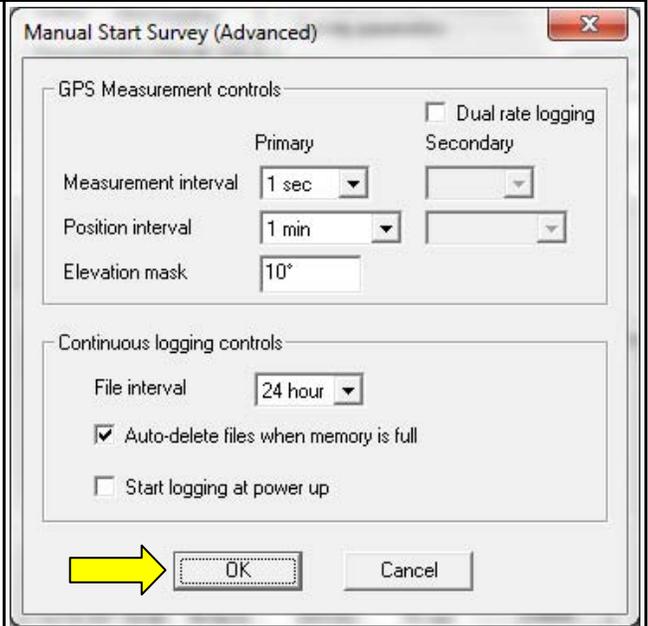
In preparing these instructions we set the data-logging rate to 1 second, the position-logging rate to 1 minute, and the elevation mask to 10 degrees, as shown at right.

Obviously the user will set the appropriate values for their situation, which will likely be other than shown in these instructions.

Under **Continuous logging controls** we set the receiver to store 24-hour-long files and auto-delete the oldest files when memory is full. The user is to determine the appropriate settings for their specific purposes.

(**Note:** It may be possible to accomplish the desired results without using the **Advanced** dialog – we will research when time allows and possibly modify these instructions.)

Click the **OK** button and the Trimble 5700 will begin to log data per our desired settings.



After a few seconds the **Log data** dialog will appear as shown at right.

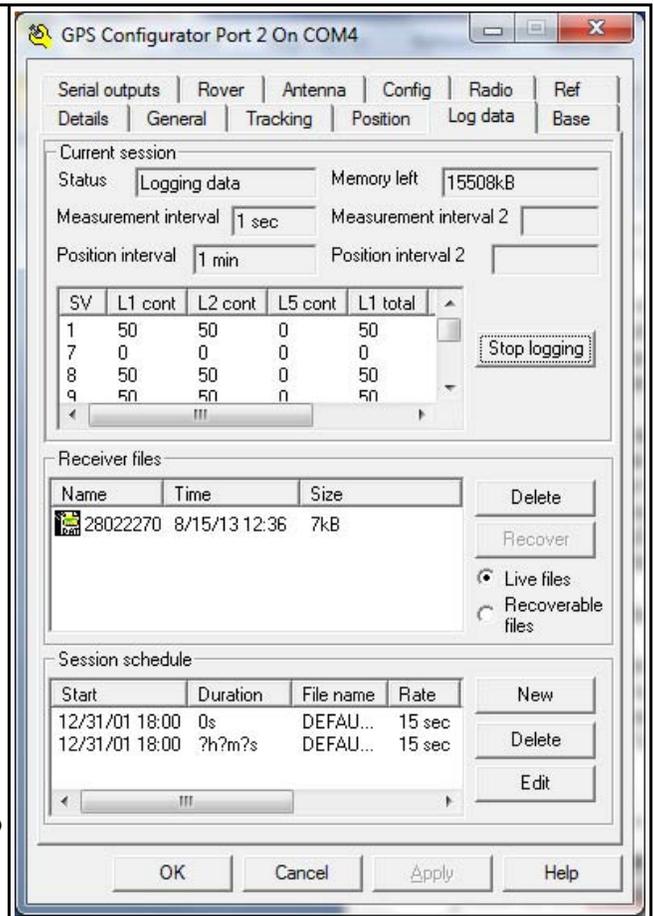
There is now an active receiver file and the epoch count for each satellite (SV or space vehicle) being tracked will increase at the rate of one count per measurement interval, once a second in this example.

(Depending on a variety of factors the displayed count may not increment each logging interval, but after a minute or so the displayed count should be approximately correct for the measurement interval being used.)

Now, since we want the data-logging session to start when we press the **Data** button on the Trimble 5700 (instead of starting whenever the Trimble 5700 is powered on), stop the data-logging session by pressing the **Data** button on the Trimble 5700 until the yellow **Logging/memory** LED on the panel of the Trimble 5700 goes out.

You will notice the epoch counts all go to zero.

**Note:** If it is desired to have the Trimble 5700 start logging data as soon as it is powered up and tracking four or more satellites, do not stop the data-logging session but simply proceed to Step 5 below while the Trimble 5700 continues to log data.



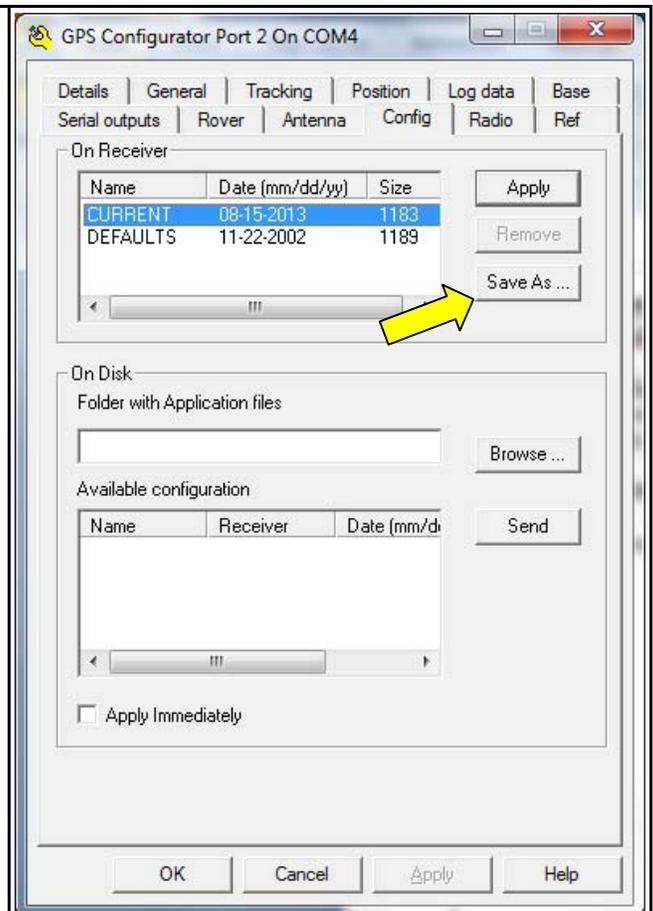
## 5. Creating the POWER\_UP.CFG configuration file

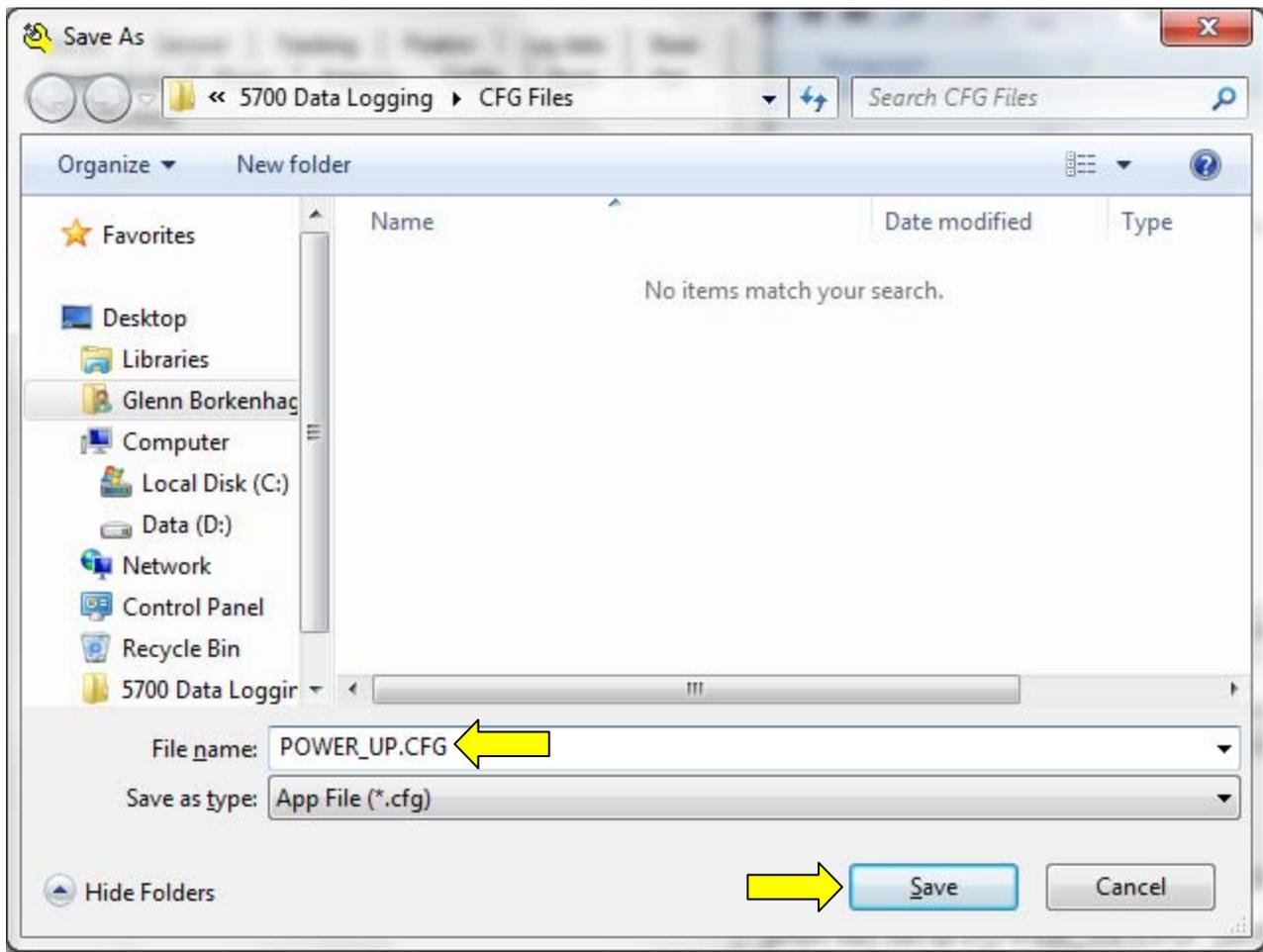
Click on the **Config** tab to open the dialog of the same name and as shown at right.

The **CURRENT** file within the **On Receiver** area of the **Config** dialog now has the settings we want the Trimble 5700 to have each time we power up the Trimble 5700.

Highlight **CURRENT**, then click the **Save As** button.

The **Save As** dialog shown below will appear.





Tell the **Save As** dialog to store this file as **POWER\_UP.CFG**. (Don't forget the underbar.)

Set the destination to an appropriate folder on your computer, or else remember where the file will be saved. Click the **Save** button.

## 6. Sending the POWER\_UP.CFG configuration file to the Trimble 5700

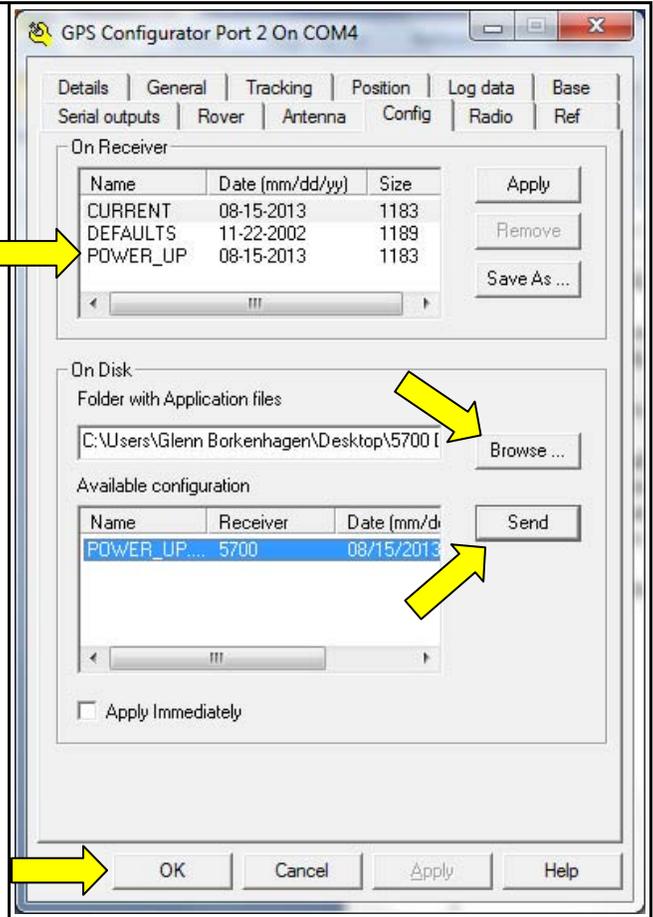
In the **On Disk** area of the **Config** dialog, click the **Browse** button and go the folder in which you saved the **POWER\_UP.CFG** configuration file in the previous step.

In the **Available configuration** field you will see the **POWER\_UP.CFG** file.

Highlight that file name and click the **Send** button.

After a few seconds you should see the **POWER\_UP.CFG** file (minus the extension) in the **On Receiver** field. (If it does not appear and there was no error message, it may be necessary to close and restart GPS Configurator.)

Click the **OK** button to close GPS Configurator.



Now when you start the Trimble 5700 it will load the settings in the **POWER\_UP.CFG** file and operate as it was when the **POWER\_UP.CFG** file was created. When it is desired to log data to the receiver, power up the receiver, allow it time to lock onto all satellites in view, and then press the **Data** button on the Trimble 5700. The Trimble 5700 will begin logging data, as indicated by the yellow **Logging/memory** LED on the panel of the Trimble 5700.

The prudent user will confirm the Trimble 5700 will operate as expected. It is suggested that the user power cycle the Trimble 5700, then reconnect with GPS Configurator and confirm the logging interval and elevation mask. It would not be a bad idea to collect a test file as well before embarking on a field campaign.

### **Other considerations –**

#### **Data-storage capacity**

The following information was extracted from the Trimble R7 GNSS Receiver/5700 GPS Receiver User Guide –

*Note – When the CompactFlash card is full, if auto-delete is not enabled, the receiver stops logging data, and the Logging/memory LED turns off. Existing data files are not overwritten.*

*Approximate storage requirements for different logging rates are shown below. The values shown are for a one-hour logging session with six satellites visible.*

Logging rate	Minimum memory required
10 Hz	2,588 kB
1 Hz	335 kB
5 seconds	87 kB
15 seconds	37 kB