

#### **Table of Contents**

Camera & GPS Set-up	1
Camera Displays	2
Initializing the GPS	3
Using the Camera's Memo Feature	
Heading	
Distance	6
Tips to get the most out of your Camera	6
GPS-Photo Link Setup: Registration	
Program Screens	
Select Photos	
GPS Data	9
Time Sync	9
Data Entry/Photo Edit	10
Output Options	12
Web output	
Watermark	
Google Earth	15
Heading/Distance	16
Misc	
Processing	18
Viewing Output after leaving GPL	18
GPS-Photo Link ArcView 8.x/9.x Extension	19
Using ArcView Extension without plug-in	23
Bluetooth Set-up	24
Downloading Photos to Root Directory	25
GPS Lock Feature	26
Frequently Asked Questions	27

NOTE: Your disk also includes a PowerPoint introduction and help files for your information.

#### Welcome

Thank you for your purchase of the GPS-Photo Link Ricoh Edition, Ricoh Caplio Pro G3 digital camera and GPS! We are sure you will find this to be a great business tool.

Information from this guide and additional information may be found in the help files on the GPS-Photo Link CD or online at www.GeoSpatialExperts.com/help/.

#### Camera & GPS Set-up

Begin by unpacking the battery and charger, and charge the battery completely before use by following the simple instructions included in the box. Once the battery is fully charged, insert it into the battery slot located on the side of the camera. The battery label should face the front of the camera upon insertion.

Insert the CompactFlash GPS card into the slot located on the bottom of the camera, under the lens and screen. The GlobalSat logo on the GPS should face the back of the camera upon insertion. In some cases, the ruggedized sleeve can block full entry of the GPS; a little more force may be needed to fully install the GPS.

NOTE: The camera can also use standard AA batteries but it's not recommended. The camera will get its best performance by using the rechargeable battery included or other rechargeable NiMH AA batteries.

NOTE: The small CD included in the GPS box labeled *GPS Drivers* does not need to be installed onto your computer to use the GPS with the camera. This software is needed ONLY if the GPS device will be used with your laptop computer or PDA.

Turn the dial above the flash to the camera icon. Press power. You are now ready to take pictures.

#### **Camera Displays**

To scroll through different views, press the *Display* button located on the back of the camera. Press it again to go to the next view.

Default Display — Below is an example of this Liquid Crystal Display (LCD) when the GPS has a fix. The satellite icon to the left shows when the GPS has a position. The latitude/longitude is shown in whole degrees. Directly below this, the number of satellites tracked is shown; total satellites being searched is in parentheses.



Next is an example if the satellites have NO fix:

The numbers have become orange and an "X" is located next to the satellite icon. There are no satellites being tracked and the reading "no fix" is present.

Full Lat/Long Display – Below is an example of the full display. The satellite icon to the left shows when the GPS has a position. The latitude/longitude is shown in degrees, minutes, and seconds.



 ${\it Blank\, Display}-{\rm No}$  information is displayed.

 $\operatorname{\it Grid \, Display}-$  The grid appears for aligning shots.

*Off* — The LCD is turned off and power is being conserved The LCD will turn on briefly if the lens is zoomed in or out. In this mode, use the viewfinder to frame photos.

#### **Initializing the GPS**

It may take 10-15 minutes for the GPS to get its <u>first fix</u>. This is called "initializing" the GPS. To initialize your GPS, insert the GPS into the camera, turn the camera on and leave it outside or on the edge of an open window. The GPS will search for its location and beep when it is done. After this first initialization, a fix will be obtained relatively quickly (usually less than 2 minutes). If you travel a great distance (i.e. cross country) you may need to re-initialize the GPS.

#### Using the Camera's Memo Feature

One unique feature of the Caplio Pro G3 camera is its ability to associate memos with each photo. Memos can be entered into the camera at the time the picture is taken by using the camera's keypad, or lists of memo can be created on a PC in advance and loaded into the camera.

To create the memo lists in advance, first, install the Caplio Pro G3 software (located in the camera box). It is <u>strongly recommended</u> that you visit the site below for the latest update to the software:

www.ricoh.com/r\_dc/download/sw/win/caplio/rl/
Run the List Editor on your computer by going to Start ▶
Programs ▶ Caplio Software ▶ List Editor.

Once open, up to five *List Titles* can be entered. To do this, in the *Item Name* text box, simply enter the *Item Heading* name. The new heading will appear on the first tab above the text box. Up to fifty attributes per list can be entered. To do this, in the *Input* text box, type in the attribute, then click add. This list can be saved with the headings and attributes by going to menu File Save.

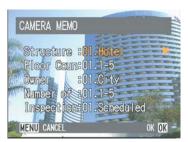
The lists can be transferred to the camera by connecting the camera to your computer via a USB cable and by going to menu Tools > Transfer to Camera, or by clicking the camera icon on the toolbar.

After the list is loaded onto the camera, a memo can be selected for each picture as they are taken by pressing the *OK/Memo* button located on the back of the camera. Then scroll up or down to choose the memo. The selected memo will be used for all subsequent photos or until the memo is changed.





After the photos are taken, select the *Green Arrow* icon on the dial to preview them. By pressing the *OK/Memo* button while previewing a picture, the memo can be changed. See below:



#### Heading

GPS-Photo Link can indicate the heading of the photo in addition to its location. The heading information can come from one of 3 places: a GPS, the Ricoh Pro G3 camera's memo field, or it can be manually entered into GPS-Photo Link . To determine heading using a GPS, GPS-Photo Link calculates heading assuming a straight line from the last several points. Therefore, to calculate heading, walk toward the object in a straight line for approximately 10 feet, then stop and take the photo.

If you have a compass or know the direction you are facing when you take the photo, you may enter the heading into the Ricoh Camera's memo field instead. If you use either of these

methods make sure to indicate GPS or Compass on the Heading/Distance tab in GPS-Photo Link (in the Output Options section).

#### **Distance**

GPS-Photo Link can indicate the distance to the object of each photo by entering the distance in a memo field on the Ricoh camera or by using a Laser Rangefinder connected to the camera via Bluetooth (The laser will transmit the information to the camera. See the online help file for directions).

A distance is required to enable the pie piece (2d) and cone shaped (3d) output (in either ARCGIS (shape files) or Google Earth output).

NOTE: The Ricoh Pro G3 has a feature that allows you to lock on to the location of the object and then take a picture. See *GPS Lock Feature* for more information.

#### Tips to get the most out of your Camera/GPS

Save time by keeping a continuous GPS fix by setting the *Auto Power Off* on the camera to 30 minutes or the "off" position. To do this, turn the dial to Setup. On the menu scroll to *Auto Power Off*, adjust the function to 30 minutes or off. If you do not take this step, the camera and GPS will turn off after 1 minute, forcing the GPS to reacquire the satellites when powered back on.

To get a better satellite fix, give the GPS a good sky-view. Between taking pictures, hold the camera slightly away from your body with the lens pointed down. Another way to improve your fix is to use the LCD preview to frame pictures. This will give the GPS a good sky-view compared to the optical viewfinder, which brings the GPS to your face.

Check your work! After photos are taken, select the *Green Arrow* icon on the dial to preview them. The latitude/longitude will be displayed, which is a great way to check the coordinates and make sure it is working the way you expect.

#### **GPS-Photo Link Set-up**

#### Registration

Once you have taken your photos, it is time to process them using GPS-Photo Link. GPS-Photo Link is designed with a "Wizard Style" format, making it extremely user friendly. Begin by inserting the disc into the CD-ROM drive, installation will start automatically.

Once installed, the program can be run by clicking the GPS-Photo Link icon on your desktop or by clicking on Start ▶ Programs ▶ GPS-Photo Link. When you run the software, the following registration screen will appear.

NOTE: The information on how to contact GeoSpatial Experts to obtain the unlock code is listed on the registration screen along with the serial number and number of trial uses remaining.

The software is now in trial mode with a limited number of uses until it is unlocked.

### <u>To obtain an unlock code YOU MUST email or call GeoSpatial Experts.</u>



We will generate an unlock code unique to your computer based on the GPS-Photo Link serial number that appears on the registration screen. Once you have entered in the unlock code or chosen to proceed with a trial use, press *Register*.

#### **Program Screens**

#### **Select Photos**



Identify the location of photos you wish to process in the box on the left called *Photo Source*. There are three options:

- Camera Folder Downloads the photos from your camera (e.g. from a memory card inserted into the computer or an SD card reader).
- Existing Folder Identifies photos that are in the default Photo Root folder. Most of the time these will be photos you have already been processed with GPS-Photo Link. Use this option if you wish to re-process photos or to process photos that you downloaded to this folder earlier.

This screen also allows you to view output created in prior sessions.

• Any Folder - Will process photos from any directory on your computer. All photos will be saved to the same folder as the originals.

Photo Root Folder indicates where processed photos (output) will be saved. The New Folder shows the name for the specific folder that will be created within the root folder for these saved photos. Click Next to proceed.

NOTE: See instructions toward the back of this manual on how to download your photos into the default directory.

#### **GPS Data**



There are three ways to get the GPS data:

- *Download* Reads the data directly from a Garmin GPS, Magellan GPS, or the GPS Datalogger.
- Use GPS Data in File Imports GPS data that was saved by another program (or reusing data stored by downloading from a device), click on the browse button to find the file with your GPS data.
- Use the GPS data in Photo Allows you to use GPS data already embedded in the photos, or to manually enter the position for each photo.

GPS-Photo Link is designed to import the GPS data saved into the image file by the Ricoh Pro G3. The *Use GPS* data in **photo** button should already be selected.

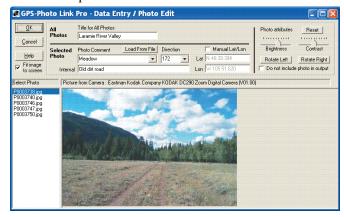
- *Time Zone* In this field, indicate the time zone your <u>camera</u> was set to when you took the photos.
- Datum/Position Format Allows you to select the format for the GPS data (e.g. Lat./Lon., UTM, WGS 84).
   Click Next to proceed.

NOTE: The Ricoh Pro G3 has a feature that allows you to lock on to the location of the object and then take a picture. See *GPS Lock Feature* for more information.

#### **Time Synch**

This screen allows you to adjust the  $\it Time\, Zone$  of the output.

#### Click Next to proceed



#### Data Entry/ Photo Edit

The data entry portion of this screen is divided into two data entry parts. The top left portion applies to all the photos. The lower portion is only for photo selected.

*Title* - Select to have a title appear on *all* photos (i.e. "Copyright 2001, ABC Inc." or "Park Photos").

 ${\it Datum}$  - Select to have the datum displayed on all photos.

*Photo Comment* - Each photo can have a comment. After a comment is entered for one photo, the comment will be available for use in other photos via the drop down list box.

*Load From File* - The comment list displayed can be customized by creating a text file. Click on *Load From File*, select the file with the comments.

Direction — If you gathered direction data when you took the photo, this box will be automatically populated (See *Taking Pictures*). If the box is blank, you may manually enter the direction the camera was facing when the photo was taken. The direction abbreviations can be customized by editing the *compass.txt* file.

NOTE: If you select data from a GPX file, you will be asked whether you want to use track logs or waypoints.

*Internal Comment* - This comment will not appear on the watermark, only in the text file and ESRI shape file output.

 $Manual\ Lat/Lon$  - Allows the editing of the photos computed lat/lon or the ability to manually enter a lat/lon.

#### **Photo Editing**

This part of the screen (upper right) allows you to preview each photo and do some basic photo editing:

- Select photo from the list at the left.
- Change brightness, contrast and rotation as desired (described below).
- $\bullet \quad \text{Select } \textit{Reset} \text{ to return the values to the default.}$
- These attributes will be applied only to the watermarked photo (the original file is left untouched).

*Brightness/Contrast* - Use these controls if the time cannot be seen very well (this will affect the watermarked photo).

*Rotate Left/Rotate Right* - Rotates image, used for viewing GPS time if camera was tilted when taking the photo.

*Fit image to screen* - Select to fit the whole photo in the screen. Uncheck to view photo in actual size. Use the scroll bars to view other portions of the photo.

Click OK when finished to proceed.

#### **Output Options**

GPS-Photo Link allows you to create many types of output. Different output styles are indicated in the check-boxes on the lower left and include:

- Watermarked photos
- Web pages
- ESRI shape files (to use with ARC GIS products)
- Text output (to use in spreadsheets)
- GPS Exchange (to use with multiple programs including Garmin's MapSource)
- Google Earth

After selecting the types of output you want using the check-boxes in the lower left, use the Tabs to determine the format of your output. Tabs include:

- Web Output
- Web OutputWatermarks



- Google
- Heading/Distance
- Miso

Options on each of these tabs are discussed in that order.

#### **Web Output**

Background Maps - GPS-Photo Link automatically downloads background maps for your web page if you check the box beside Show Background Maps.

- *Map Source* Allows you to select which internet maps to download; choose from public Tiger maps, USGS Topos, USGS Aerial Images or USGS High Res Urban Photos.
- *Show overview maps* Creates an overview map, showing where all the photos were taken.
- Download map images to local file Select this option to download the map images in the output folder instead of linking to them. This allows the creation of stand-alone HTML pages that do not need an internet connection to view. It also allows the map images to be used in ArcGIS (a world file is created for each map).
- Use Icon on Maps Allows you to select the icon you would like to show where photos were taken. You may choose from the standard icons or select your own icon using the Icon File button. Icons may be .jpg, bitmap or .gif files.
- If you select the arrow or airplane icon, it will automatically rotate the symbol to point in the direction indicated for each photo on the *Data Entry* screen.

#### **Web Page Options**

- Link to Internet Map Sites This option will enable links to MapQuest, TopoZone, Lost Outdoors and Terra Server on the web page.
- Link to original photo Select to link the original photo in the web page output, so that if you click on the watermarked photo, the original photo will be shown.

NOTE: If you process the photos the background maps are blank, it means that no maps are available for your coordinates at this site. Choose a different map source and reprocess the photos.

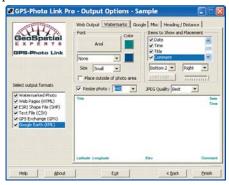
• Output Attributes Table - Includes a table showing

attributes of each photo.

- *Use web page file templates* Uses HTML templates for web output. See *Using HTML Templates* in the help file.
- File Renaming Options -You may change the format to rename the watermarked photo, associated web pages and original photo using different time/date patterns, comments, or memos associated with your photos. This may make specific photos easier to find.

#### Watermark

The options on this screen allow you to manipulate what will be displayed on the processed photos as a watermark on the photo itself or "outside the photo" as a label underneath. You may adjust the color of the labels, create a halo or other highlight, or adjust the size of the text. You may also indicate what information to display on the photos. For each item you include, you may select the placement of that item on the photo. Two lines at the top and two at the bottom of each photo are available.



If you choose to include your logo (up to two), you must

NOTE: If you wish to include your logo on the photos, make sure the file is the correct size for the photos *before* importing it.

indicate the location of that file on your computer. GPS-Photo Link will import the logo "as is". You may then adjust the logo to be more transparent if desired.

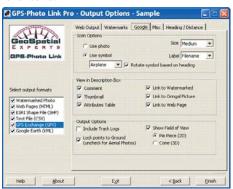
Finally, you may choose to resize the photo and determine the quality for the watermarked photo.

NOTE: To use the Google Earth output you must first download Google Earth to your computer. Go to http://earth.google.com/downloads.html. Google Earth is free, however upgrades are available for purchase.

#### **Google Earth**

GPS-Photo Link automatically imports your photos and track logs into Google Earth. This screen allows you to select how your data will be displayed in Google Earth.

*Icon Options* - Select the icon that will represent your photo in Google Earth. You may use a thumbnail of the photo itself or choose an icon from the drop down menu. If you choose an arrow or an airplane, GPS-Photo Link will automatically rotate the symbol to face the heading indicated for each photo on the *Data Entry* screen. You may also determine the size of the icons.



Google Earth includes a label associated with the icon. Use the *Label* drop down list to determine how your icons will be labeled.

When you click on an icon in Google Earth a description box appears. You can determine what information to include by checking boxes in the *View in Description Box* section of GPS-Photo Link.

*Output Options* allows you to include *track logs* in Google Earth along with the photos.

Google Earth can display information in 3d. Because GPS coordinates are less reliable for elevation, you may wish to select *Lock Points to Ground* if your photos were taken from the ground (not Aerial photography).

Show Field of View - Allows you to display the area included in the photo. A default width will be assigned. The area can be shown in 2d (pie piece shape) or 3d (cone shape). The heading and distance used for this option must be adjusted using the <code>Heading/Distance</code> tab. That will determine the length and direction of the shape.

#### **Heading/Distance**

 $\it Heading$  shows the direction that the camera was facing when the photo was taken. The heading may be determined in 1 of 3 ways:

- GPS or Compass If you collected heading information at the time the photo was taken, that information was included in the photo and should have appeared on the Data Entry screen automatically. Selecting this option will use that information display heading in the output.
- Memo You may have noted your heading as a memo field when the data was collected. Selecting this option will retrieve that data from the memo field and use it to position the icon. Use the drop down box to indicate which memo field contains heading information.

 Use for all - Allows you to indicate a particular direction that will apply to all photos. Use this option only if all photos were taken facing the same direction. Indicate that heading as degrees in the box.

*Distance to object* - Indicates the distance between the camera and the object of the photo. If you collected distance data with the Ricoh camera, choose the method you used (See *Taking Photos* in set-up for instructions).

- Laser If you used a Laser to determine distance, and you used a Bluetooth or other device to send that data to your GPS, PDA or camera, choose this button.
- *Memo* If you captured distance data as a memo field select this option and indicate which memo field to use.
- Manual If you did not capture distance when you took the photo, you may estimate your distance to all objects with this option. The distance you select will determine the length of the pie piece or cone used in the HTML, shape file or Google Earth. The same distance will be used for all photos.

Calculate new position - Allows you to place the icon at the location of the object based on the heading and distance information entered above (normally the icon is placed where the photo was taken).

Heading Options - Allows you to shift all headings right or left by the degrees you indicate. This option should only be used in cases where all photos are taken facing a different direction than you are traveling. Example - If you are taking photos out of the right window of a car or airplane, then use this option to shift all directions to the right.

#### Miscellaneous

This page allows you to format fields that are used in many forms of output including Lat/Lon, time, and date. It also allows you to determine the size of the thumbnails created.

#### **Processing**

Once you have finished selecting options, click the *Finish* button. You will see a screen with a progress bar during processing. Once the photos are processed, a screen will appear that shows how many photos were linked to a Lat/Lon position. If no photos were linked, the notice will be in red.



- Click *Browse Output Folder* to open *Windows Explorer* to the output directory.
- Click View Web Page to launch internet browser to display the web (HTML) output.
- Click *Google Earth* to launch Google Earth browser and display your photos.
- Click *Continue* to return to the first wizard screen.
- Click *Exit* to leave GPS-Photo Link.

#### View Output after leaving GPS-Photo Link



After leaving this screen, you may view your output by returning to the *Select Photos* screen and choosing *Existing Folder*. At the bottom of that screen you will see buttons that allow you to open output previously created for the selected Photo Root Folder. You may also browse to the folder where the photos are stored and open the index.htm to view webpages, or \*.kml file to view Google Earth output.

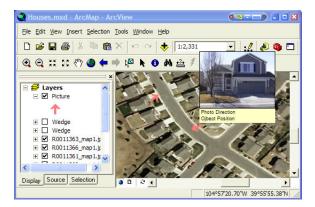
#### **GPS-Photo Link ArcView 8.x/9.x Extension**

This extension for ArcView 8.x/9.x will allow the hot linking of photos, automatically loading background images (aerial

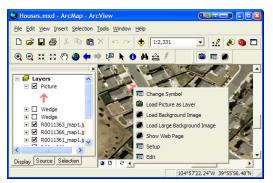


photos and topo maps), and loading photos as layers. It also allows the processing of photos from the Ricoh camera directly in ArcMap. You can create Shape files or Personal GeoDatabases.

Once GPS-Photo Link is installed on your PC, a new "GPS-Photo Link" toolbar should be available in ArcView. It has three buttons: *View Picture, Setup,* and *Process Photos*.







from the ArcMap menu, and select "GPS-Photo Link". **View Photos Button** (left side of toolbar)

- Select the GPS-Photo Link tool (Camera icon)
- Hover over a point, and the thumbnail photo will popup
- Click on a point in the picture.shp theme, the watermarked photo will then be displayed
- Right-click on a point in the picture.shp theme, and a popup menu will appear:
- Change Symbol Allows you to change the picture symbol, and to rotate the symbol.
- $\Diamond$  Load Picture as Layer Loads the photo as a theme in ArcMap, useful for use in layouts.
- ♦ Load Background Image Loads a downloaded background image, such as an aerial photo or topo map. Must have "Web Pages (HTML)" output and "Download map images to local file" selected when processing photos.
- ♦ Load Large Background Image Loads a downloaded background image, at a larger scale.
- $\Diamond\,$  Show Web Page Launches the web page associated with the photo.
- ♦ Setup Runs the options dialog.

 $\Diamond$  Edit - Allows you to view the comments and memos

#### $\textbf{Setup Button} \; (middle \; of \; toolbar)$



This icon allows you to determine what is displayed in the thumbnail view and whether the watermarked or original photo is displayed when you select a point.

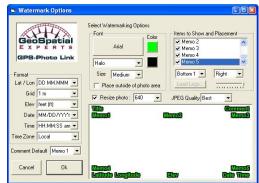
#### $\boldsymbol{Process\ Photos\ Button}$ (right on toolbar): launches an



 $\mbox{ArcGIS Plug-In.}$  This essentially runs GPS-Photo Link from within  $\mbox{ArcView}.$ 

#### **Select the Process Photos Button**

1. In the dialog, click *Photo Directory* to specify the directory where the Ricoh photos are stored.



- Select "Create Watermarks" to have watermark photos created (Click "Options" for watermarking options and the following screen will appear).

  Select the Datum and position format.

  Select either "Shape File" or Personal Geodatabase.

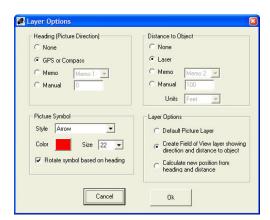
- Click "Create and Load Layer" to process the photos.
- Click Layer Options to bring up this dialog:

Heading: (Picture Direction) there are 4 options:

- None Do not use a heading.
- Laser Use heading from the GPS or a GPS with compass.
- Memo Use a memo field to specify heading.
- Manual Manually type in a heading.

### Distance to Object: there are 4 options:

- None Do not use a distance.
- Laser Use distance from the Laser Rangefinder.
- Memo Use a memo field to specify distance.
- Manual Manually type in a distance.



*Picture Symbol*: Select the style, color, and size for the picture symbol. Select "Rotate" to rotate the symbol based on heading.

#### Layer Options:

- Default Picture Layer Create a layer of picture points.
- Create Field of View Layer showing direction and distance to object. This will create a layer of "wedges" using the camera's field of view (how much the camera can see horizontally), along with the distance and heading. See the example below:

Calculate a new position from heading and distance - This option will calculate the objects actual position based on the heading and distance from the camera position. It is most useful when used with a Laser Rangefinder.

#### **Using ArcView Extension without Plug-in**

If you choose to run GPS-Photo Link outside of ArcView, you can still import the shape files into ArcView and use the extension. To import the shape files, click *Add Data*, then locate the GPS-Photo Link file "picture.shp" in the directory under the Photo Root Folder, which defaults to: \Program Files\GPS-Photo Link\Photos.

#### **Bluetooth Setup**

#### Connecting the camera to a Bluetooth GPS

- 1. Turn on Bluetooth GPS.
- Turn off the camera.
- Insert the Bluetooth card into the camera (with the blue label up, as looking from the back of the camera). Turn on the Ricoh Pro G3 camera. Rotate the top dial to *playback* (Green arrow).

- Press menu, select serial, and on the send to screen, press  $\mathit{OK}$  button to search for Bluetooth devices.



7. Select the BT device, and press *OK*. After connecting, rotate the top dial back to camera.





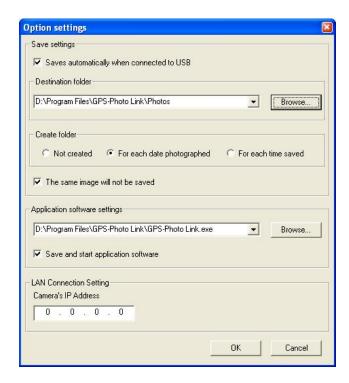
- The Camera is now connected to the BT GPS and should show the GPS status on the screen.
- Set BT SPP Auto Conn to on in the Setup menu for the camera to automatically connect to the last BT device on power on.

#### **Downloading Photos to Root Directory**

To download photos from the Ricoh camera you will need to use Ricoh Gate software which comes with the camera.



Under options, select the Photo Root folder where you want your photos to be stored.  $\,$ 



#### **GPS Lock Feature**

The Ricoh Pro G3 now supports a GPS lock feature. To obtain the coordinates of the object being photographed rather than the camera itself:  $\frac{1}{2} \frac{1}{2} \frac{1}{2}$ 

- Press the *right arrow* button on the camera and the current GPS position will lock.
   Walk back and take photos. The GPS coordinates stored will be of the position of the object, not the camera.
   Remember to press the *right arrow* button again to unlock the GPS position.

#### **Frequently Asked Questions**

### Should I turn on my camera's clock so that it shows on the display?

No! The date and time are stored internally in the image file. GPS-Photo Link has much more options for watermarking than what are built into digital cameras.

However, you should <u>set</u> your camera's clock to be near the actual time. Cameras with clocks that are months or years off sometimes have difficulty linking to coordinates.

# I want to record the location of the object, not the location where the picture was taken. How can I do this?

Place your GPS (Trimble, Garmin, etc.) next to the object, then step back and take a picture. The picture will be linked to the coordinates of the GPS at the time it is taken.

**Can I use GPS-Photo Link with aerial photography?** Yes, in fact we have many customers who do just that. One of them was featured in the ArcUser magazine. Visit: www.esri.com/news/arcuser/0205/seals.html

**Can I take more than one picture in one location?** Yes, the photos will be labeled with a -1, -2 after the name.

# I'm trying to get a satellite fix but it is taking a long time. Why?

It may take up to 15 minutes for the GPS to get its first fix. This is what we call "initializing" the GPS. Once the GPS is inserted into the camera, turn the camera on and leave it outside or on the edge of an open window. Since it is new and has never been used in your location, it takes some time to locate the satellites. The camera will sound of a series of beeps when it locates the satellites. After initializing, it will obtain a fix relatively quickly.

#### I didn't get a memory card at the time of my purchase. How many pictures will the Ricoh Pro G3 camera hold without one?

The Ricoh Pro G3 camera has an internal 8 MB/SD memory card. This translates to approximately 5 full sized pictures. The 512 MB card we sell holds 320 pictures and the 1 GB holds 640 pictures.

# What are the advantages to buying the Ricoh Pro G3 compared to the less expensive cameras at local stores?

The benefit of having the camera is that it is an all-in-one solution. The images are already geo-coded with the location information (that information is stored as meta-data inside the image file).

#### How do I unlock the software?

When you install GPS-Photo Link, the software is initially in "Trial" mode and will run 10 times before locking out. To unlock the software after you purchase it, just email the serial number from the registration screen to: Sales@GeoSpatialExperts.com, and you will be sent an unlock code to fully unlock the software.

### Can I transfer my license to another computer?

Yes! You can easily transfer the license to another computer without contacting GeoSpatial Experts. Begin by downloading the software to the new PC. When you run it, the screen will say that you have an evaluation copy and give you a serial number. Write this number down.

On the original PC, when you bring up the GPS-Photo Link you will see an "About" button at the bottom. Click this. When you do it will show a "Registration" button. Click there and you will see one of the options on the left as "Transfer to another PC". You will enter the serial number from the other PC in the space provided. When you hit the transfer button it will generate a new unlock code for the new PC. Write this down before selecting OK! Otherwise it will go away and

never be seen again. Finally, type the new unlock code into the new PC where prompted and you are off. The first PC will be locked and the second PC will be unlocked.

How many pictures can I process at once and how long will it take?
GPL can process hundreds of photos at once. It takes around 1 second for each photo, depending on computer speed and size of the photo in mega pixels.

## **What happens to the original photo?** The original photo remains untouched by GPL.

We hope you enjoy using GPS-Photo Link! If you have questions or comments please email us at Info@GeoSpatialExperts.com.

