Objective: Record GPS data in the field. Remove the SD card from the receiver. Put card in SD card reader. Copy GPS data files to hard drive on PC.

Procedure that worked:

Put SD card in ZMax GPS receiver.

From Page 14 of the ZMax Ops & Aps manual:

Reset the Unit

A reset of the receiver will initialize the receiver, restoring all receiver parameters to factory defaults, clear all ephemeris and almanac information from the internal memory, and reformat the SD memory card. See Appendix B for a list of the default values for many user parameters.

The unit must be powered OFF to initialize the receiver. First, the unit must powered off, then press and hold the power key for five seconds. After the five seconds, the phrase "re-init" will be displayed on the front panel display until the initialization process is complete. After the unit completes the re-initialization procedure, the receiver will stay powered on and be in normal operation mode. If the user releases the power key at any time prior to starting the initialization, the receiver will simply power up normally with no reset.

From Page 15 of the manual:

Caution!

Turning the unit "OFF" while the receiver is in the reset mode can have adverse effects. If this occurs, repeat the Reset process immediately.

The reset process will reformat the SD card, deleting all information recorded previously on the card. During constant use, reformatting the SD card using the initialization process is recommended every two weeks.

From page 38 of the manual:

Receiver initialization using the Power button:

When initializing the receiver using the power button, parameters will be reset to default values, ephemeris and almanac information will be cleared, and the SD card will be reformatted.

1. With the receiver powered OFF, press the Power button for at least 5 seconds.

2. The display will show "re-init", indicating the receiver is in the initialization process.

3. The initialization process will take several minutes depending on the size of the SD card. The front panel will continue to display re-init until the process is complete. When complete, the

receiver will be powered on and in the normal state with the front panel displaying “SYSINFO” and the SD card is ready to use.

After a complete reset, the receiver does not have current information about where it is or where the GPS satellites are. If the GPS antenna has a reasonably good view to the sky, within a few minutes, the receiver should begin to track satellites and the SV/Power LED should blink green one or more times between each red blink. It will blink green once for each satellite that is being tracked.

Within 15 minutes of tracking a satellite, the receiver will acquire satellite almanac data that provides the location of all the GPS satellites in the sky. After almanac data is stored, acquisition of satellites and data recording should begin within 10-20 seconds of a power cycle.

After collecting data on the SD card:

Power off receiver, remove SD card, place card in SD card reader.

Start GNSS Studio Download program or the Download program in GPSToolkit. GPSToolkit is available in the software folder from the ftp server at

ftp://ftp.thalesnavigation.com

Click connect to PC Drive and choose the drive letter for the SD card reader.

Wait what seems like a very long time for the files to display in the left hand window of the Download program.

Right click on one of the file names.

Click "Copy To" on the pop up menu and copy the file to the PC hard drive.

Remove the card from the SD card reader. Put it back in the GPS receiver. Use the re-init procedure to clean it off and prepare it for a new project.

This procedure consistently works for me.

From page 275 of the manual:

When the data card is read with Windows Explorer through the SD card reader it will contain a file named Micro-Z.bin. This is the receiver’s file system where data files are stored. This file is required by the receiver to record data. Do not delete this file.

Most of the time I do not want to talk about things that do not work because it tends to focus thoughts on things that should be forgotten but I want you to know that I was able to make it fail to work right by doing things wrong.

Now for something that consistently fails:

When I use Windows Explorer to format the card the receiver will not record data to the card. The card must be formatted using the re-init procedure described in the manual and the FAQ.

From the ZMax FAQ:

Q. What is a Micro_z.bin file and why is it stored on my Z-Max memory card?

A. During survey operations data is stored on the SD Card memory in the Z-Max receiver. The raw GPS data is stored on the SD card in Z-Max in a proprietary compression file format; the "Micro_Z.bin" file.

Downloading the data involves the transfer of this data to the PC for subsequent processing. During the downloading process, the session files are decoded and converted into the individual data files, (B-E-O-M-T-S-files) and stored onto the desired directory on the PC. One set of data files is created per session. The Micro_Z.bin file MUST be decoded and converted by the Download Utility found in GNSS Studio. The Windows Explorer program used in the Windows operating system may be able to copy the Micro_Z.bin file from the SD Card over to the destination directory on the PC, but Windows Explorer knows nothing about decoding and converting the Micro_Z.bin file. Transferring the Micro_Z.bin file with Windows Explorer may corrupt this file, rendering it unusable for processing. Thales Navigation recommends only using the Download Utility found in GNSS Studio or the GPS Toolkit.

The FAQ for the ZMax has even more details about using SD cards with the SD card reader.

If you want to download the FAQ, manuals, current firmware, or software from the ftp server you can do so at

ftp://ftp.thalesnavigation.com