

STARLOGGER™ OPERATION MANUAL

CATALOG #3605



Spectrum
Technologies, Inc.

CONTENTS

Specifications.....	2
General Overview.....	2
Equipment Setup.....	3
Measurement Procedure.....	4
StarLogger Features.....	4-5
StarLogger Software.....	5-6
Service and Support.....	6
Warranty.....	7

This manual will familiarize you with the features and operation of your new StarLogger. Please read this manual thoroughly before using your logger. For customer support or to place an order call Spectrum Technologies, Inc. at 800-248-8873 or (815) 436-4440 between 7:30 am and 5:30 PM CST, FAX at 815-436-4460, or E-Mail at info@specmeters.com. Web site: www.specmeters.com

Spectrum Technologies, Inc. at 23839 W. Andrew Rd.
Plainfield, IL 60544

SPECIFICATIONS

Measurement Capacity:

- 1,488 data points with SPAD and DGPS
- 4,096 data points with SPAD
- 1,364 data points with "The Investigator"
- 862 data points with "The Investigator" and DGPS

Dimensions:

- 3.75" x 0.5" x 2.0"

Weight:

- 2.75 oz.

Operating Environment:

- Weather Resistant

Battery:

- Two AAA **alkaline** batteries

Battery Life:

- 40 hours of logging
- 2 to 3 months with unit "off"

Data Ports:

- Two RS 232 ports

Software Requirements:

- Windows 3.1 or higher

GPS Referencing:

- Differential correction required

GENERAL OVERVIEW

Thank you for purchasing the StarLogger from Spectrum Technologies, Inc. This operation manual deals with the collection of field sensor data. Before using the StarLogger, carefully read the operation manual to insure that your experience with this technology is a positive one.

The StarLogger is a tool to increase the efficiency of collecting field data with the SPAD chlorophyll meter or "The Investigator" soil compaction meter. The StarLogger can be used with or without GPS/DGPS. After a set of data has been collected by the StarLogger, it is transferred to a PC using the StarLogger software. The data is in ASCII text file format and can be exported into mapping software or popular spreadsheet software for analysis.

The StarLogger is a robust field data collection device with two (2) RS-232 data ports. It has significant advantages over a laptop or handheld PC which have limited battery life and are not designed for adverse field environments.

EQUIPMENT SETUP

1. Plug connector cable (spiral cable) from the StarLogger into RS-232 port of the meter you are taking measurements with.
2. Turn the meter on and turn on the StarLogger.
3. When using a GPS/DGPS Unit : Use the black cable supplied with the StarLogger to connect the GPS/DGPS unit to the female RS-232 port on the StarLogger and turn the GPS unit on.
4. Press and hold the START button until the StarLogger beeps to signify that the unit is on (you may need to hold down the button for at least ½ second).
5. The StarLogger will beep twice and illuminate the LED corresponding to the battery symbol. The battery status is displayed on the “fuel” gauge. This is displayed as two short flashes of the appropriate battery level. (If only one LED is displayed the batteries should be replaced*)

* The “fuel” gauge will only show battery life correctly for **Alkaline** batteries. Use of NiCad batteries will cause the unit to significantly understate battery life.

After the battery level has flashed twice, the StarLogger will illuminate the GPS LED for approximately one second. The ready LED will then show. This indicates that the StarLogger is ready to record measurements from the SPAD meter. The StarLogger has a Velcro strap for attaching the logger to your wrist while you are taking measurements.

Connection cable configuration for SPAD chlorophyll meter connection:



RS 232 Port

Connector Cable



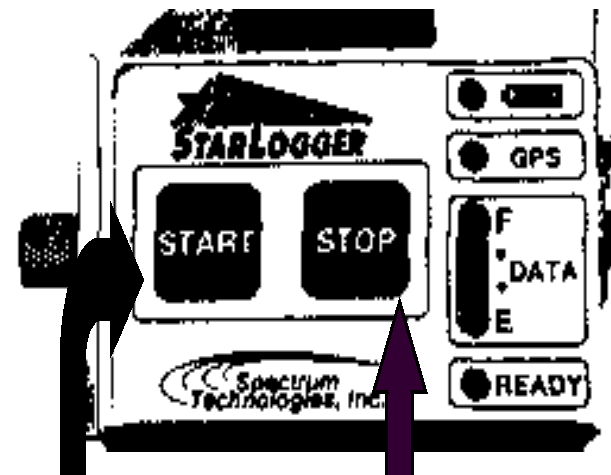
MEASUREMENT PROCEDURE

- Turn measuring meter on.
- Take measurement (refer to meter's manual for specific unit measuring procedures).
- Indication that measurement reading logged:
 - StarLogger will beep twice and flash memory capacity on the fuel gauge.
- Logging GPS locations:
 - Logger illuminates the GPS LED indicating it is looking for GPS signal.
 - If GPS signal is found, GPS LED turns off and a long beep follows.
 - If no GPS signal is found, logger will send out a multiple beep warning while flashing GPS LED (This may also indicate a loose cable or GPS signal interference).
 - After logging information the Ready LED will indicate that the logger is ready to take the next measurement.
- Data gauge indicates the amount of memory space available:
 - 1 light = 0-25% storage used
 - 2 lights = 25-50% storage used
 - 3 lights = 50-75% storage used
 - 4 lights = 90-99% storage usedWhen memory storage is full the logger will send out a multiple beep warning and flash the "full" LED. It will then shut off.

STARLOGGER FEATURES

1.) Data Management

When the StarLogger is turned on, "Logger Started" is stored in the data file. If connected to a GPS/DGPS system, the start time is also recorded (i.e. Logger Started 01:23:33). This feature can be used to break up data sets for easier interpretation. For example, if you are going to use the StarLogger for multiple fields or plots press the STOP button after you are finished with a field (plot) then press the START button when you enter the next field plot. This way the data is separated for each field by the phrase "Logger Started".



Push START to begin recording data, and to begin new locations of measurements.

Push STOP when you are finished with a field (plot).

STARLOGGER FEATURES

2.) Battery

The battery indicator function (“fuel” gauge) on the startup of the logger will only work properly with 2-AAA **alkaline** batteries. Other battery types will work in the logger but the “fuel” gauge indicator will not be accurate.

3.) Deleting a SPAD measurement

The SPAD meter has the ability to delete bad data with the “Delete” function key. When using the StarLogger this function key will store a reading indicating that the measurement has been deleted.

4.) Non-Volatile Memory

The memory on the logger is non-volatile, which means if you lose power, the data on the logger will not be lost.

5.) Other

The StarLogger is not launched or activated from the software. It is ready to record information simply by pushing START.

STARLOGGER SOFTWARE

I. Computer Connection:

1.) Using the cable supplied with the StarLogger software (grey cable), connect the StarLogger to the male end of the interface cable and the 9-pin connector end of the cable to a serial port on your computer.

2.) Open the StarLogger software and make sure your StarLogger is in the STOP (off) mode.

3.) If your computer is not communicating with the logger while attempting a download, you may need to change the com port setting. To do this use the COM PORT button, or select FILE then COMM PORT, you may also use the key sequence of CTRL+P.

II. Downloading the Data:

1.) Select “**Logger**”
Select “**Download Logger**” from menu (Logger will beep).

2.) Software will then ask you to save the file
- Enter in the name you wish to save the data as, then press OK (logger will beep).

3.) You may either view the data or exit the screen.

Important: This is the only time you may view your data in StarLogger software. To view your data elsewhere open the file in any text viewer, word processor, or spreadsheet.

STARLOGGER SOFTWARE

III. Clearing the Logger:

The logger continuously adds on to its memory until the logger is manually cleared by the StarLogger software. To clear the logger's memory, connect the logger as explained and select **Logger** and then **Clear Logger's Memory** from the menu. The software then warns you that you are about to clear the memory. At this point click "Yes" to continue the clear or click "Cancel" to return to the main screen. Once you have selected "Yes", the software will clear the memory and return you to the main screen. Once you have gone through the previous steps there is no way to retrieve the logger's memory.

IV. Help Items:

Refer to the **HELP** menu for any problems that are not answered by this manual. In addition, this manual is included as USER MANUAL under the HELP menu in the event that you lose the hardcopy. There is also information on the version of the software under the **HELP** menu, which may be needed in the event that you call for assistance with the StarLogger or this software.

SERVICE AND SUPPORT

The StarLogger is easy to use and reliable. In the unlikely event that you have a problem with the hardware or software, please read the following.

Who do I contact?

Contact the company that you bought the loggers from: Spectrum Technologies, Inc. or a Spectrum Authorized Dealer.

Before calling, you can evaluate and often solve your problem if you try the following.

1. Read this manual and the help file in the StarLogger™ software. It may only take a few moments to get the answer you need.
2. Write down the events that led to the problem. Have you changed anything in your computer recently? Are you doing anything differently?

When Contacting Spectrum Technologies, Inc.

please indicate that you need Technical Support for the StarLogger.

Be prepared to:

1. Provide details on the hardware and software configuration of your computer including: manufacturer, model number, peripherals, and versions of the operating system.
2. Completely describe the problem. The more information you provide, the faster and more accurately we will be able to respond.

WARRANTY

This product is warranted to be free from defects in material or workmanship for 1 year from the date of purchase. During the warranty period Spectrum will, at its option, either repair or replace products that prove to be defective. This warranty is void if the Spectrum products have been damaged by customer error or negligence or if there has been an unauthorized modification.

Returning Products to Spectrum

Before returning a failed unit, you must obtain a Returned Goods Authorization (RGA) number from Spectrum. You must ship the product(s), properly packaged against further damage, back to Spectrum (at your expense) with the RGA number marked clearly on the outside of the package. Spectrum is not responsible for any package that is returned without a valid RGA number or for the loss of the package by any shipping company.

**Spectrum Technologies, Inc.
23839 W. Andrew Rd
Plainfield IL 60544
(800) 248-8873 or (815) 436-4440
Fax (815) 436-4460**