

GLOG V2

Portable RS232 Serial Data Logger



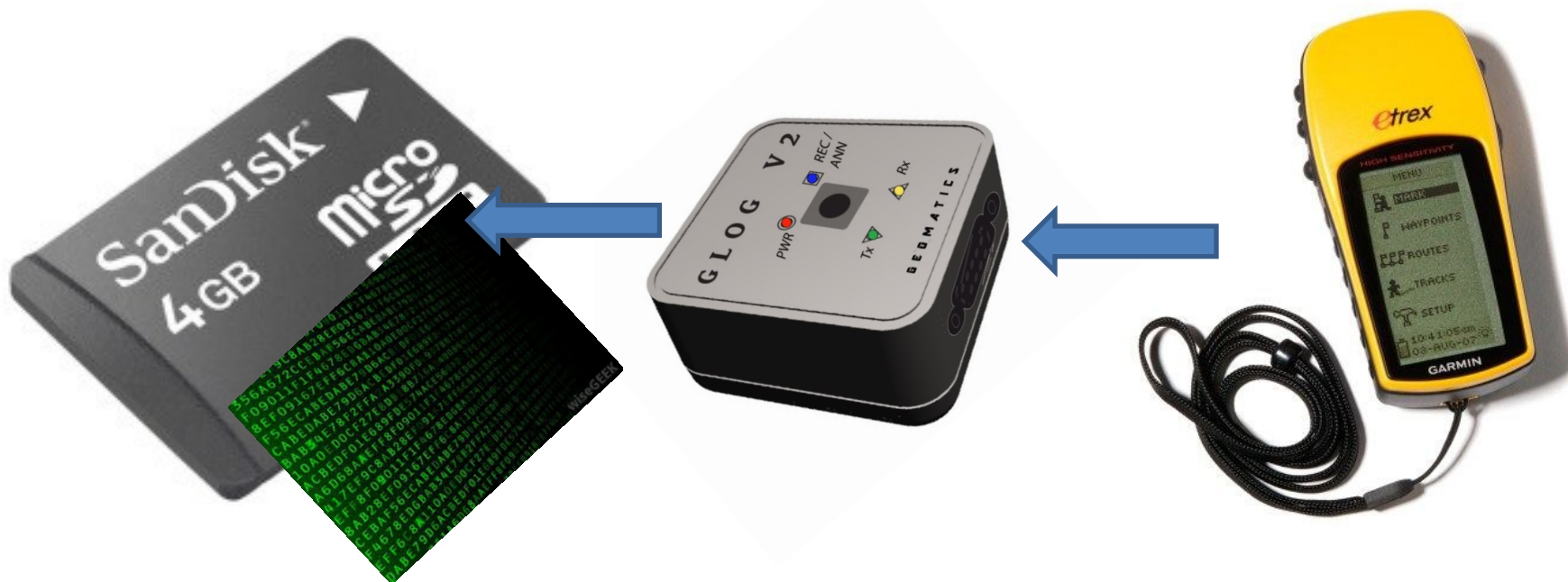
Quick Guide

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AFFORDABLE PRECISION

GLOG V2 is a battery-powered compact device that logs data from RS232 serial devices. It records the logged bytes (in its original form) on a removable storage medium.



GLOG V2 Key Features

1. Small (2" x 2" x 1") and light weight (< 100 gm)
2. Battery operated - internal battery lasts over 20 hours
3. Extremely easy to operate; just connect GLOG to the serial device via cable and hit the button; when done, remove the memory card and download the data to the PC
4. Streams serial data conveniently on to removable storage medium
5. Adds more memory on the go to a serial device—up to 16 GB
6. Uses inexpensive and reliable removable storage medium
7. Adds a backup data recording means to a serial device for extra robustness
8. Logs Garmin raw satellite ranges for better navigational accuracy

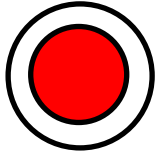


GLOG V2 Dongle

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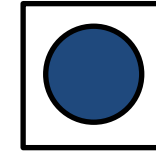
AFFORDABLE PRECISION

**POWER
LED**



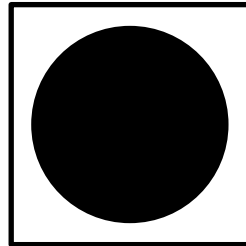
Red indicator inside a circle
solid red for power ON

**RECORD / ANNUNCIATION
LED**



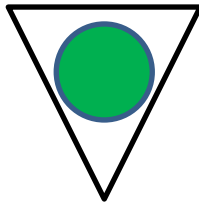
Blue indicator inside a square
*blue blinks for annunciations and
memory/card activities*

POWER Button



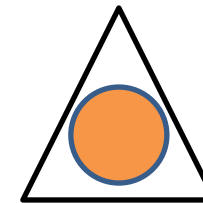
Turn power on and off

Green indicator inside a triangle
green blinks for outgoing requests



**DATA OUT
LED**

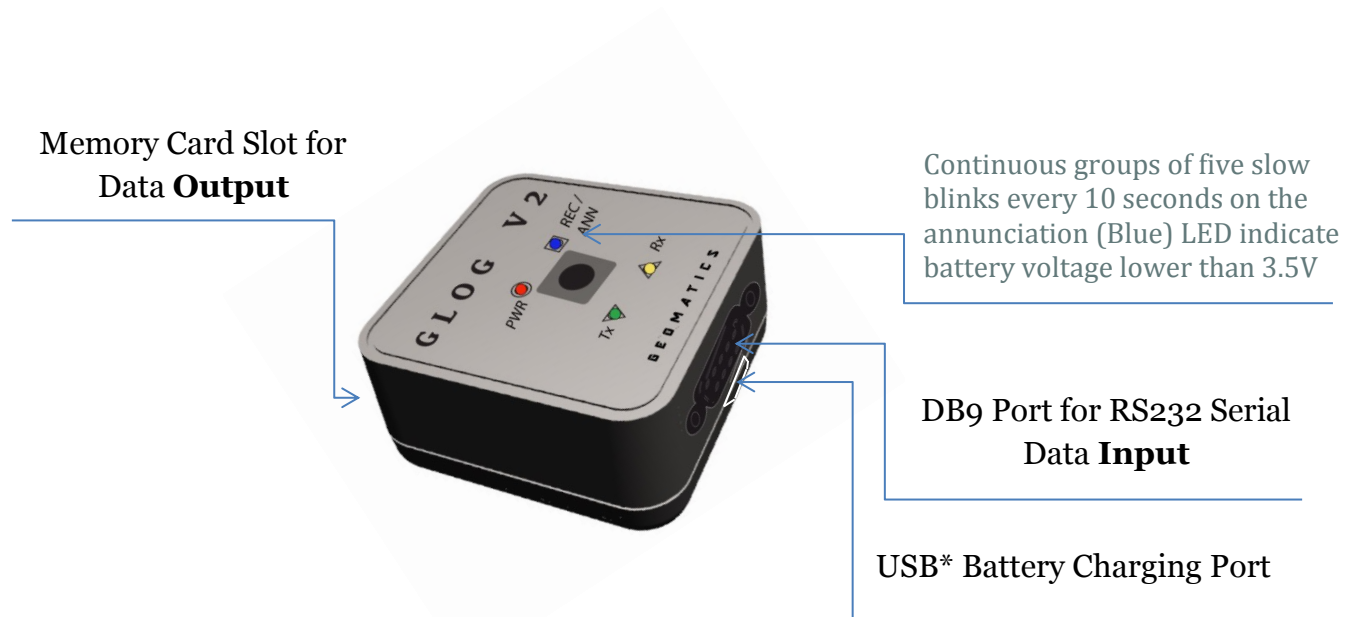
Orange indicator inside a triangle
orange blinks for incoming bytes



**DATA IN
LED**

GLOG V2 User Interface

GLOG V2 Data and Battery Charging Interfaces

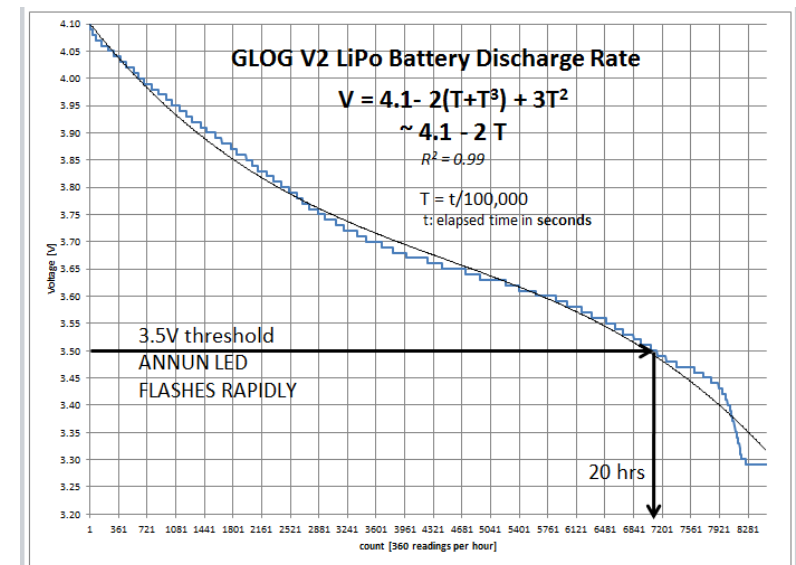


NOTES:

- Use 5V USB power supply to charge the battery – full charge takes two to four hours
- Max. charging input current 500 mA
- The USB* port is also used to update the firmware (see GLOG V2 firmware update)

GLOG V2 Care

- Keep away from direct sun or rain; device is not water proof
- Always use caution when connecting external peripherals
- Do not connect the USB and the DB9 simultaneously
- Do not over charge or over discharge the battery
- Do not use input current over 500 mA
- Do not use unit when the battery voltage drops under 3.5V; continuous groups of five slow blinks every 10 seconds on the annunciation (Blue) LED indicate battery voltage lower than 3.5V
- Charge the unit battery via its USB port either by plugging the cable to into the provided AC adapter or to a portable USB battery
- Battery Performance (see chart)



Logging Garmin Data



PREPARATION:

- Garmin receiver logging operate at 9600 baud
- Receiver interface has to be set to 'Garmin' under the receiver 'system' sub-menu
- Do not log data before the receiver has already acquired at least 4 satellites and is in 'navigation' mode
- **Turn the Garmin receiver ON first** and wait until a valid 3D position is available

PROCEDURES:

1. Snap a fresh memory card into the GLOG memory card slot for data recording
2. Connect the Garmin receiver to GLOG via the Garmin-provided cable
3. Switch GLOG ON by pushing the power button down; the round red LED should shine

ANNUNCIATIONS:

- 20 rapid flashes on the square blue status LED: "Hello World from GLOG"
- Few flickers on the green LED followed by few flickers on the orange LED, then 10 rapid flashes on the blue LED: GLOG interrogating the serial device to see if it is a Garmin receiver
- More flickers on the green LED followed by flickers on the orange LED, then 10 rapid blue flashes: GLOG requesting information/logs from the receiver
- Long flickers on the orange LED followed by three groups of 10 rapid blue flashes: Garmin receiver acknowledges raw log requests; GLOG is ready to log raw data

LOGGING:

- Once the receiver acknowledges raw data requests, GLOG enters into logging mode
- Both the orange and the blue LEDs flicker continuously and irregularly to indicate data reception and disk activities
- When done logging, switch the GLOG unit off and remove the memory card to download the data onto your PC!

NOTE: Logged data is stored in chronologically numbered files!

Garmin Raw Data to Rinex Conversion

Gar2Rnx: Console application to convert acquired GLOG raw Garmin satellite ranges into the Rinex format

PREPARATION:

- Copy Gar2Rnx.exe to a folder on your PC
- Switch to the command (DOS) prompt as shown in the opposite picture
- Change directory to where gar2rnx.exe resides

NOTE: it is recommended that the '.GAR' data file(s) reside in the same folder as the conversion utility, but it is not necessary

PROCEDURES:

- On the command prompt, type in the command

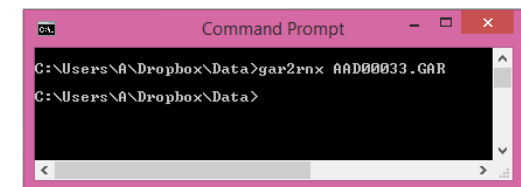
> gar2rnx <GAR File path> then hit ENTER

where:

<GAR File path> is the full path to the acquired binary data file

- Gar2Rnx creates the RINEX observation file (.OBS) in the same <GAR File path> folder

NOTE: Gar2Rnx utility generates satellite navigation information (.NAV) file in RINEX format if it is recorded. Nevertheless, the NAV information is receiver independent and can be independently downloaded from several online services such as <http://geodesy.noaa.gov/CORS/standard1.shtml>



Logging non-Garmin Data



PREPARATION:

- Non-Garmin devices operate by default at 9600 baud, but this can change!
- Make sure to use the right cable for the logging operation; logging from a computer requires null modem interface
- **Turn GLOG ON first** and wait until you see long flickers on the GLOG orange LED followed by three groups of 10 rapid blue flashes: GLOG enters logging mode
- Set the serial device to send data at 9600 baud

ANNUNCIATIONS:

- After GLOG enters logging mode, the annunciation LED stops flashing

PROCEDURES:

1. Snap a fresh memory card into the GLOG memory card slot for data recording
2. Connect the serial device to GLOG via proper serial cable

LOGGING:

- Once the serial device and GLOG are connected via serial cable, both the orange and the blue LEDs flicker continuously and irregularly to indicate data reception and disk activities
- When done logging, switch the GLOG unit off and remove the memory card to download the data onto your PC!

NOTE:

- Use NULL MODEM connector/adaptor when logging data from a computer
- Logged data is stored in chronologically numbered files!

Logging Generic Data

GLOG logs serial data at baud rates other than 9600

PREPARATION:

- Create a "CONFIG.TXT" text file on the root folder of the memory card; use a text editor, e.g. notepad
- specify four values separated by comma as follows:
 <devID>, <baud rate>, <PREFIX>, <SUFFIX>

e.g. 0,57600,ABC,DAT then hit ENTER and save the file to the disk

devID - 0:Generic, 1:Garmin (.GAR), 2:NovAtel (.GPS), 3:Hemisphere (.BIN), ...

PROCEDURES:

1. Snap the memory card into the GLOG memory card slot for *configuration* and data recording
2. Connect the serial device to GLOG via proper serial cable

ANNUNCIATIONS:

- 10 rapid flashes on the square blue status LED: "Hello World from GLOG"
- 10 rapid blue flashes to indicate "config.txt" file found
- Long flickers on the Rx orange LED followed by three groups of 10 rapid blue flashes: GLOG is ready to log data

LOGGING:

- Both the orange and the blue LEDs flicker continuously and irregularly to indicate data reception and card activities
- When done logging, switch the GLOG unit off and remove the memory card to download data to PC

NOTES:

- Long orange flickers without blue flickers are indications that the serial device and GLOG are out of synch because of wrong baud rate!
- Use NULL MODEM connector/adaptor when logging data from a computer

GLOG V2 Firmware Update

Xloader: Windows application to update GLOG V2 firmware

PREPARATION:

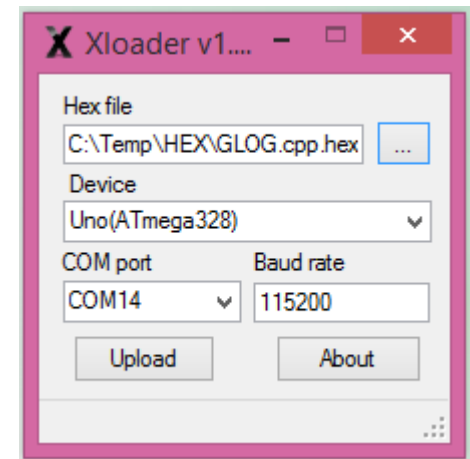
- Download and install FTDI USB VCP driver from <http://www.ftdichip.com/Drivers/VCP.htm>
- Download the latest version of the GLOG firmware (hex file) from <http://www.geomatics.us/products/glog/>

PROCEDURES:

- *Switch ON GLOG first**
- Connect GLOG to the computer via a USB cable; Windows will recognize GLOG and assigns it a COM port number (COM14 in the example) – make sure nothing is connected to the DB9 port
- Run Xloader
- Browse to the location of the 'hex' file and choose it
- Choose "Uno(ATmega328)" from the 'Device' pull-down menu; the baud rate will be automatically populated with 115200
- Under the 'COM port' pull-down menu, choose the Windows assigned COM port number
- Click upload; a confirmation message shows up in the status bar after about 30 seconds*

NOTES:

- Attempting to attach GLOG to the computer while it is switched OFF will result in a "Device Not Recognized" error!
- If 60 seconds or more have elapsed without getting a confirmation message, detach and reattach GLOG and try again!



USB Driver Issue

A workaround for a known issue of the FT232RL chip driver

SYMPTOMS:

Windows does not recognize GLOG V2! It may display “USB device not recognized”. Or, the serial port shows up in Windows ‘Device Manager’ with exclamation mark to indicate a problem!

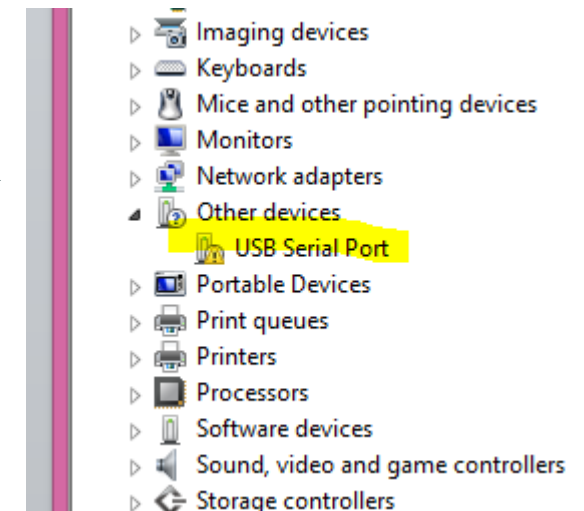
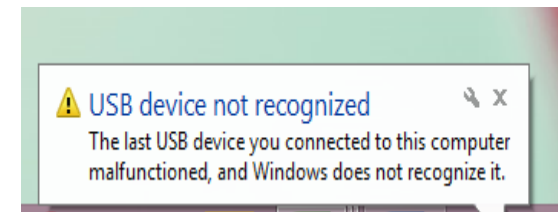
SOLUTION:

1. Revert back to FTDI version 2.10.0.0 driver or older
Or
2. Manually install the serial port and/or the serial bus.

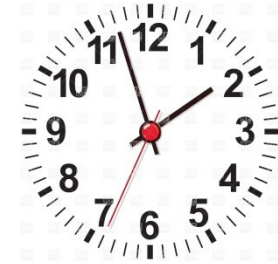
PROCEDURES:

1. If not already plugged, plug in GLOG V2 and open device manager under My Computer
2. Right click the ‘USB Serial Port’ and click ‘Update Driver Software...’ from the speed menu
3. Choose "Browse my computer for driver software"
4. Click "let me pick from a list on my computer"
5. Click "have disk"
6. Browse to the installed FTDI drivers folder and select an .INF file (port/bus)
7. Install the driver for the serial converter
8. Repeat for the USB serial port device, if necessary

NOTE: It is sometimes sufficient to install either the port or the bus!



GLOG V2 Real-Time Clock (RTC) Reset



TIME.TXT: A text file containing the correct date and time

PREPARATION:

- use a PC text editor to create a text file; name it TIME.TXT
- type the correct date and time in the first line of the file as follows

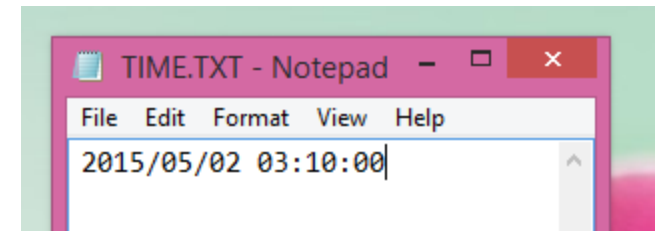
YYYY/MM/DD HH:MM:SS

e.g. 2015/05/02 03:10:00

- save the file with the correct date and time to the SD card

PROCEDURES:

- insert the card with the TIME.TXT file into GLOG V2SD card slot
- power the unit ON and wait about 10 seconds
- power the unit OFF then remove the SD card
- on a PC, delete the TIME.TXT off the SD card (or just change its name to something else)
- The RTC now is reinitialized with the new date and time and should report the correct date and time



NOTE: The SD card containing TIME.TXT may contain other files

NOTES

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