Starfinder GPS Datalogger

The GPS Datalogger decodes Global Navigation Satellite System (GNSS) signals to determine its' location and provides that information to the user as timestamped messages using the NMEA format.

The GPS Datalogger is easy to setup and operate, it needs a GNSS antenna with a male SMA connector (passive or powered), an RS-232 cable to send the data to a computer or other data collection device and power (9-36 VDC) to the Power Input connector.

On the front of the unit, are the power indicator LED, a reset button and the SMA connector for the GPS antenna as shown in Fig 1.

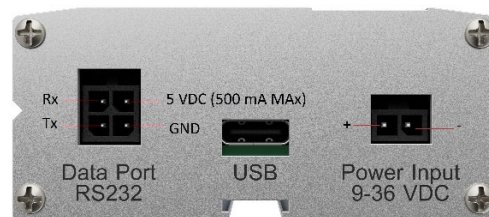Fig 1: Starfinder GPS Datalogger Front View   Fig 2: Starfinder GPS Datalogger Rear View

On the back of the unit is an RS-232 port, a USB C port and a power port. The pinout for the RS-232 and power ports are shown in Fig 2. The RS-232 port defaults to 4800 8N1; the port supports speeds between 4800 and 115200 bps.

The USB C port is currently for use configuring the device and updating the firmware using the LocationNow Suite software.

To operate the GPS Datalogger, connect power, antenna and RS-232port to the Datalogger, then test for NMEA messages being sent. Make sure that the RS-232 port settings are the same for the Datalogger and the computer that you are using to collect the message traffic.

Setting the communication speed using LN Suite:

Laipac's LocationNow Suite software is available to users of the Datalogger, it can be used to set the speed of the RS-232 port; this is the only parameter that is configurable. The default is 4800 bps, with options for 4800, 9600, 19200, 57600 and 115200 bps available.

LocationNow Suite will also detect if it has updated firmware available for the Datalogger when it first connects to the device. The user will be prompted about the update and request approval to update the firmware. The user can choose either option. Laipac recommends updating the firmware when prompted.
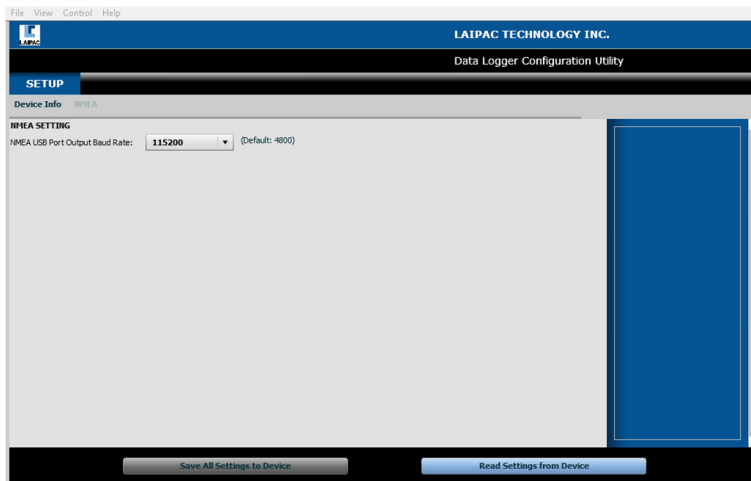

Fig 3: LocationNow Suite Control for setting Serial Port Speed.

Note: While the Datalogger can be powered via the USB C port, for operations this is not recommended. The unit's start up procedures will try and start the programming modes rather than the operating mode and will make getting the operating mode to start difficult.

A typical set of GPS data messages from the Datalogger:

$GPGGA,212618.000,4351.317052,N,07921.702810,W,1,4,2.22,198.847,M,-35.280,M,,*6C
$GPGSA,A,3,31,03,,,,,,,,,,,,2.43,2.22,0.98,1*18
$GPGSV,2,1,08,31,59,062,16,04,48,307,,03,36,243,23,28,35,077,,1*60
$GPGSV,2,2,08,29,19,050,,09,15,312,16,27,07,166,,32,06,136,,1*60
$GPRMC,212618.000,A,4351.317052,N,07921.702810,W,1.18,263.19,251023,,,A,V*08

Information on the content of the NMEA messages can be found at various places on the Web; Wikipedia has a good page, and Trimble has a very detailed one as well.