

## Outputting NMEA Packets to GPS Ready Software

### Overview

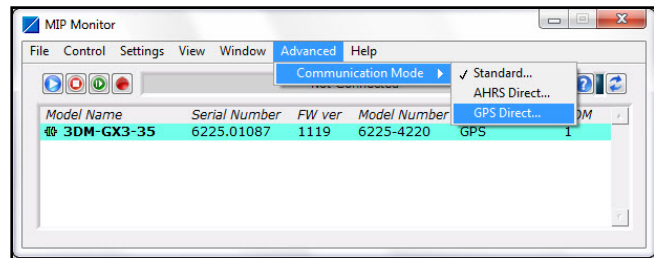
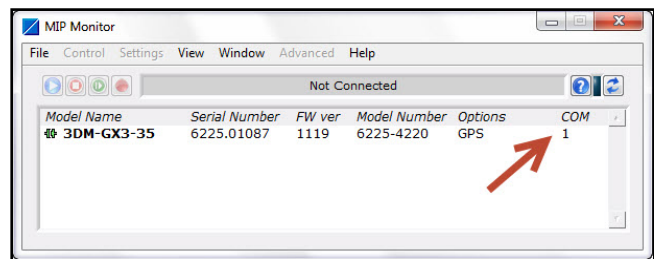
The LORD MicroStrain® [3DM-GX3®-35](#) Miniature Attitude Heading Reference System (AHRS) with GPS and the [3DM-GX3®-45](#) Miniature GPS-Aided Inertial Navigation System (GPS/INS) among many other features, allow the user to operate the GX3 in *GPS Direct Mode*. The GX3 contains an on-board [u-blox GPS receiver](#), and when in GPS Direct Mode, the GX3 can be manipulated directly with the software developed for the on-board GPS chip by its manufacturer. This functionality allows the user to configure the GX3 to continuously output [NMEA 'sentences'](#), containing GPS position data, via the serial port to a host computer.

Many mapping, tracking and navigation softwares allow the user to connect a GPS (Global Positioning System) device to the host computer's serial or USB port, and map their progress in real time. An example is [SeaClear II](#), a nautical navigation software.

If we couple these two technologies together, we are able to drive the mapping software with the GX3 GPS. This technical note lays out a step-by-step approach to this integration, uses the -35 with an RS-232 interface and SeaClear II, and assumes the user is already familiar with the GX3. **N.B.** The approach is certainly not hard and fast; it can and will vary depending on the user's environment and requirements.

### Step 1

- Connect the -35 to your host PC, either by the USB or RS-232 interface cable; we are using RS-232 in our example.
- Establish communication with the -35 using the [MIP Monitor](#) software.
- Note the COM port to which the -35 is connected; in our example the -35 is on COM 1.
- Insure that the -35 is set to 115,200 baud rate and that it is not sampling.
- Now click Advanced.
- Click Communication Mode.
- Click GPS Direct and a message box opens.
- Click OK to confirm the switch to GPS Direct Mode and the message box disappears.
- The -35 is now in GPS Direct Mode.
- Close the software.
- Keep the -35 connected and powered through all the rest of these steps.

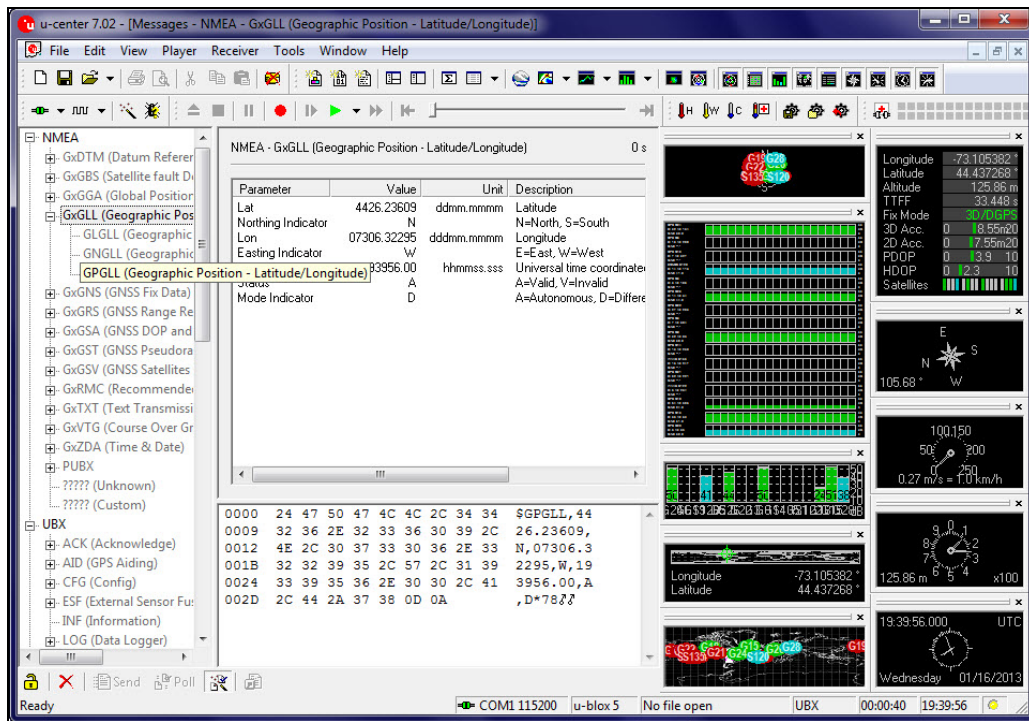


### Step 2

- Go to: <http://www.u-blox.com/en/evaluation-tools-a-software/u-center/u-center.html>
- Download and install the u-center version 7.02 software.

### Step 3

- Launch u-center and the main screen will appear.
- Click Receiver.
- Click Port.
- Click COM1.
- Click Receiver.
- Click Baudrate.
- Click 115200.
- Longitude, Latitude, etc. should begin changing several times a second in the Data View (View>Docking Windows), satellites will be appearing in the Satellite Position View, the green cursor should be located where you are on the World Position View, etc.

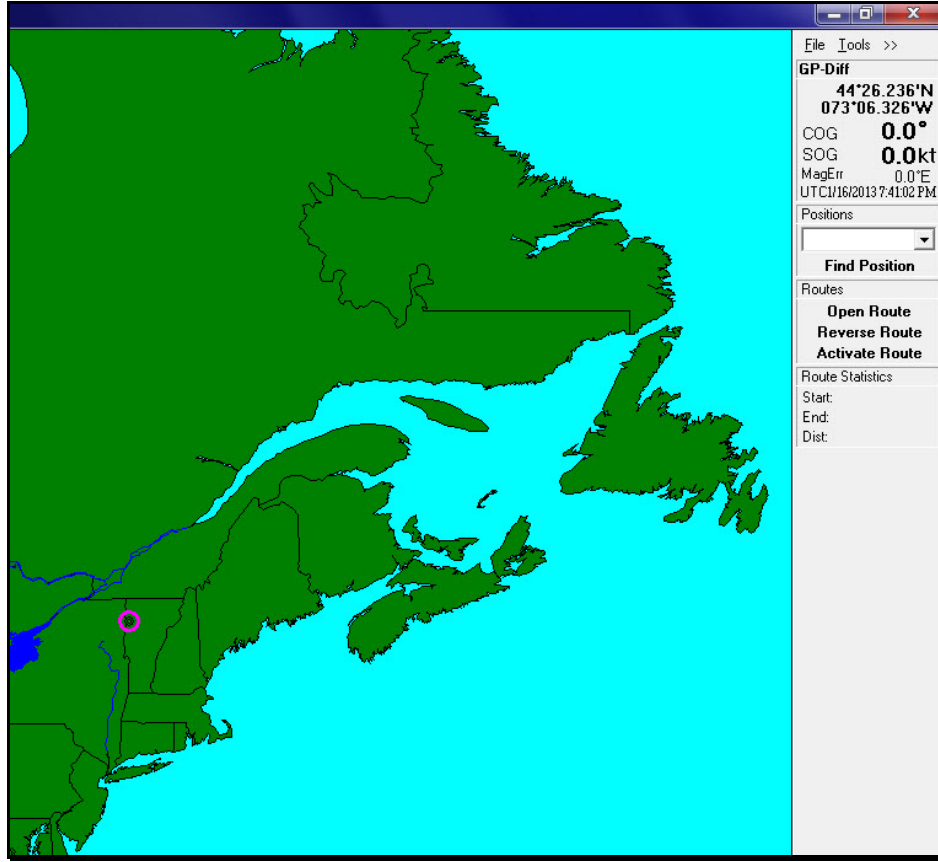


### Step 4

- Click View.
- Click Message View and the Message View window will open.
- Double-click on NMEA in the tree and the NMEA 0183 window will appear.
- Click the '+' sign to the left of the NMEA in the tree and the NMEA tree opens.
- Double-click the GxGLL(Geographic Position - latitude/longitude) line and its window appears.
- This double-click also commands the -35 to send out NMEA 0183 Lat and Long packets.
- Close u-center.

### Step 5

- Launch SeaClear II.
- Click Tools.
- Click Properties and SeaClear Setup window appears.
- Click Comm tab.
- Set PC Port to Com1 for Tx/Rx1.
- Set BPS to 115200.
- Click Save....
- et VOILA!
- You will see the purple cursor hovering over your 'ship' wherever you are in the world!



### Support

LORD MicroStrain® support engineers are always available to expand on this subject and support you in any way we can.

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