

The djLoader application (i.e. dj_ldr.exe) reads various sensor information and presents that information in the form of shared variables. Its primary function is to read positional sensors such as GPS, INU, compass and wheel odometry.

INU

Reads velocity rate of change and rate of angular change from Crossbow IMUs. Also reads triaxial accelerometer, triaxial gyro, triaxial magnetometer, and temperature sensors data from Microstrain 3DM-GX1 and 3DM-GX2 IMUs. The listed IMUs are plug-n-play with the Pronto4 system.

Compass

Reads heading, pitch, and roll from a PNI TCM2 electronic sensor module.

Vibe

Reads a vibration sensor.

GPS

Can read any NMEA string. The Pronto4 primarily uses GGA and Recommended Minimum C (RMC) messages to navigate. The GPS should minimally output the RMC at 1 Hz and the GGA message at 10 Hz.

For more information, refer to the “Pronto4 Geolocation SharedVariables” Bulletin.

GPS1/GPS2

Reads from a Trimble Lassen SK GPS receiver using TSIP/TAIP/NMEA protocols. If both GPS receivers are present, djLoader will also calculate a heading between GPS1 and GPS2 that can be used for navigation.

GPS3/GPS4

Used for higher precision GPS receivers. Can read any NMEA GPS message. GPS3 is the main positional sensor for the Pronto4. Default GPS messages used are GGA at 1Hz and RMC at 10Hz. If both GPS3 and GPS4 are present, djLoader will also calculate a heading between GPS3 and GPS4 that can be used for navigation.

SVP

Can read messages from the Digital Signal Processor (DSP) embedded inside the Pronto4. ServoPod and IVN are the primary applications that read from the DSP, but djLoader can be used to monitor the serial data if a third party application is used in place of ServoPod or IVN.

OBDII

Reads messages from the OBDII module if installed. Information read is highly vehicle and protocol specific. Information queried can be changed by modifying
C:\GC07\OBDIICommands.txt.

LSR

Reads scan information from a SICK laser scanner. Data is queried at 38400 baud or 500k baud depending on desired resolution.

Laser Range

Reads a singular distance value from a laser range finder. Distance returned can be set to be in feet, meters or yards.

Wheel Odometry

Reads from up to 4 wheel odometry sensors installed on the vehicle. Returns ticks, frequency, calculated speed, and distance traveled by each wheel.

This device is also used to update the video source of the video mux.

Ethernet

Diagnostic tool to read/send UDP messages to different ports on the local and remote computers on the network.

