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6.111 Final Project
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GPS Data Logger and Visualization System

Team

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Abstract

I will be building a system that reads GPS position information from a third-party receiver chip, logs it in a non-volatile memory, and renders a number of different visualizations of the data on a VGA display. The exact visualizations have not been finalized, but will include graphs of speed vs. time, altitude vs. time, and position in three dimensions. All graphs will support zooming, panning, and (for those rendered in 3D) rotation.

Time permitting, support for loading and displaying a ZIP code or street database from a CompactFlash card may be added.

The system will consist of two parts: the data recorder, which will be mobile, optimized for low power consumption and implemented on a Digilent Nexys board, and the data display, which will be implemented on the 6.111 labkit. Either a CompactFlash card or a removable Flash ROM module from Digilent will be used to store and transfer the logged data between the two boards.