



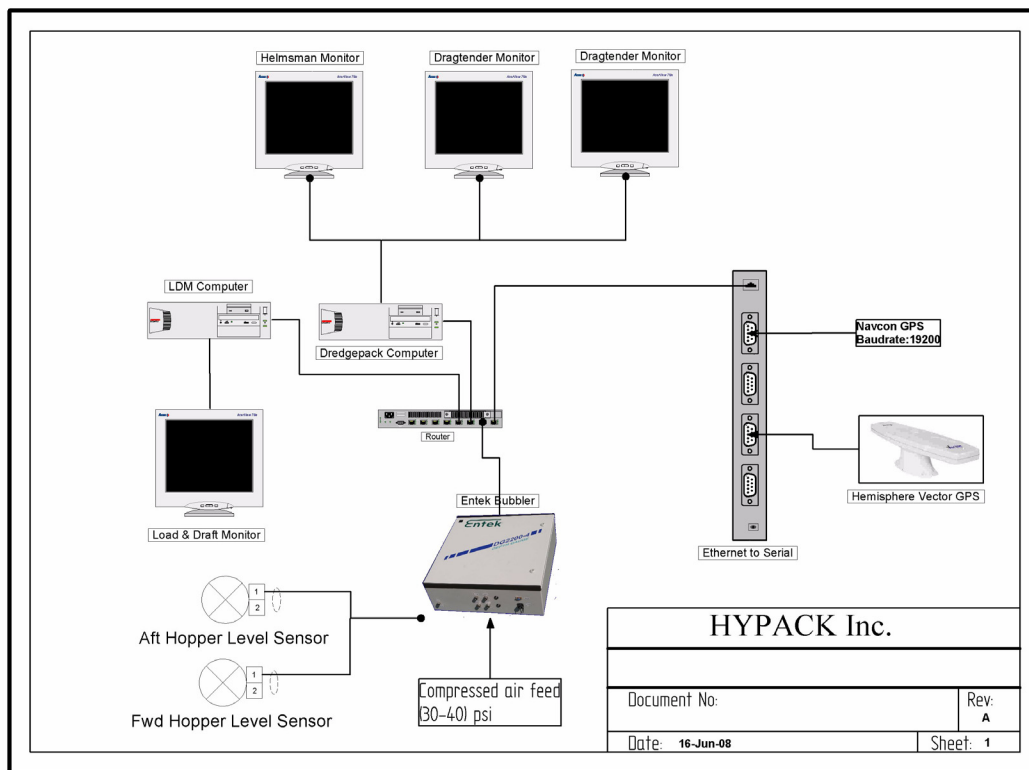
Hopper Dredge Instrumentation – Part 1 Hardware

By Mircea Neacsu

Throughout 2008 we have installed DREDGEPACK® on a number of dredges and, working together with our suppliers, I think we now have a fairly “standard” configuration that we can use. The advantage of a standard configuration is that it eliminates much of the “guess work” for the installation technician and assures consistent good results in a short period of time.

In this article I’ll concentrate on the hardware elements that make up the system, leaving the software configuration for the next issue of our newsletter.

FIGURE 1. Hopper Instrumentation Diagram



COMPUTERS AND MONITORS

We use 2 computers with identical hardware. One of them is dedicated to DREDGEPACK® application while the second is used for the Load and Draft Monitor (LDM) program that is part of the standard DREDGEPACK® suite. There are 3 monitors connected to the DREDGEPACK® computer: one for the captain/helmsman and two for dredge arm operators. On a dredge with only one arm we would use only two monitors. The LDM monitor shows only the load graph and produces the load reports.

Having two identical computers allows for a backup of the main DREDGEPACK® computer. If the main computer goes down it can easily be replaced with the LDM computer until it can be repaired.

FIGURE 2. Comark Duramobile PC

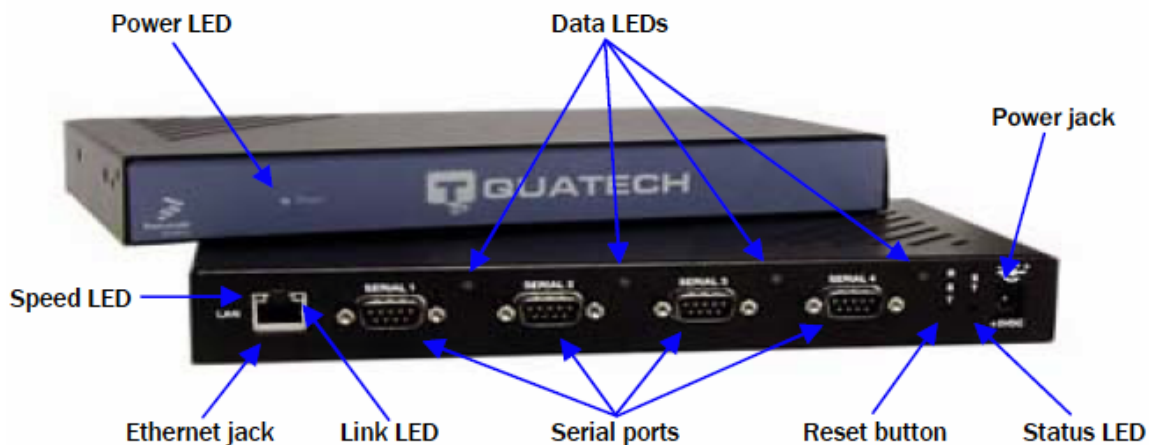
For the computers, we are currently using the Comark Duramobile PC. It is a nice, ruggedized computer that can withstand the harsh marine environment.



SERIAL TO ETHERNET CONVERTER

All serial devices are connected through the serial-to-ethernet converter. Although the computers we are using have 4 serial ports, passing all the data through the network interface makes it easier to replace the computer without worrying about multiple serial port cards and drivers for those. We have successfully used either Quatech units or the Moxxa (more popular in Europe). They are fairly simple to configure through a Web page.

FIGURE 3. Quatech 4-port Serial to Ethernet Converter



The GPS, gyro compass, echosounder and tide receiver can all be connected to a 4-port converter.

BUBBLER SYSTEM

We have worked with Entek, the manufacturer of the bubbler system, to bring in some important changes. The latest bubbler units have a network interface so they plug-in directly into

