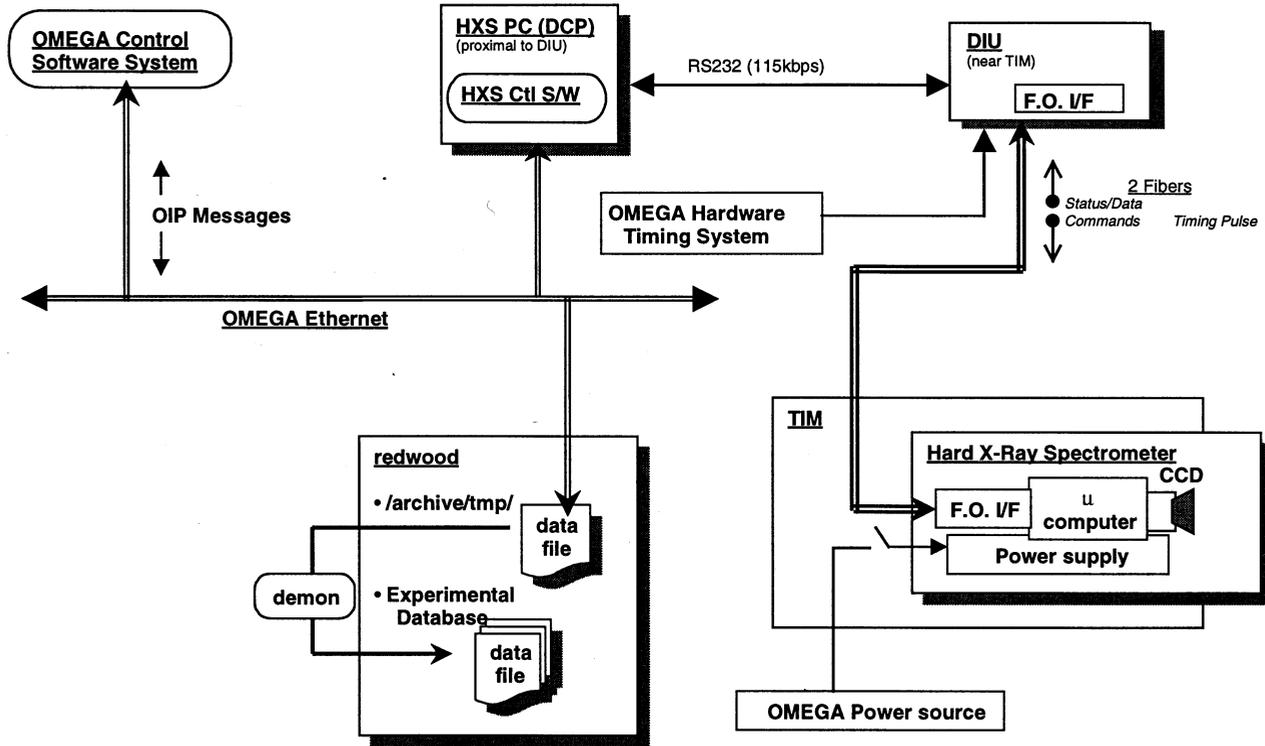


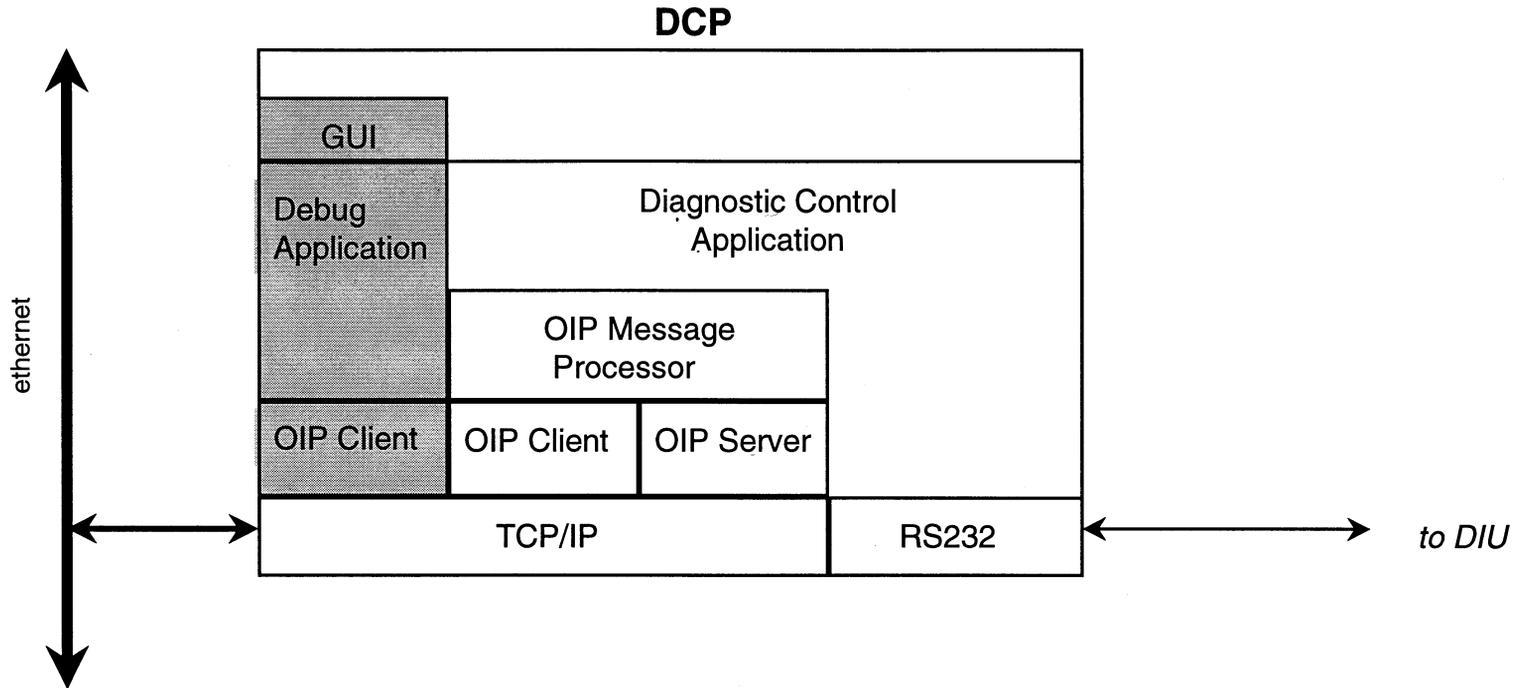
HXS System Overview



HXS System consists of three basic parts

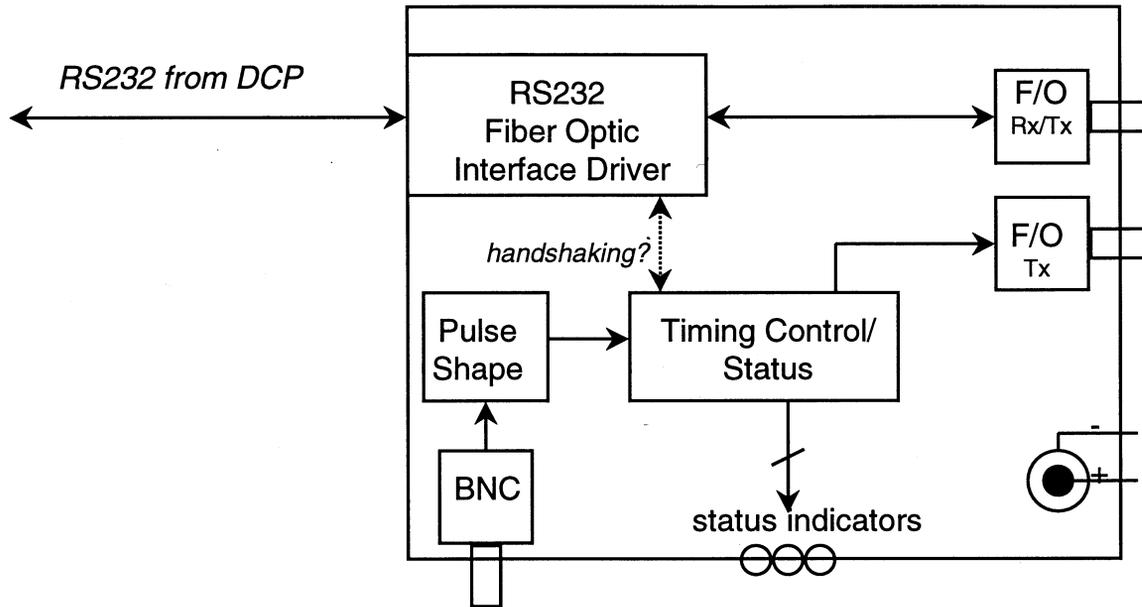
- Diagnostic Control Processor (DCP)
- Diagnostic Interface Unit (DIU)
- the Diagnostic itself

HXS System Detail (DCP)



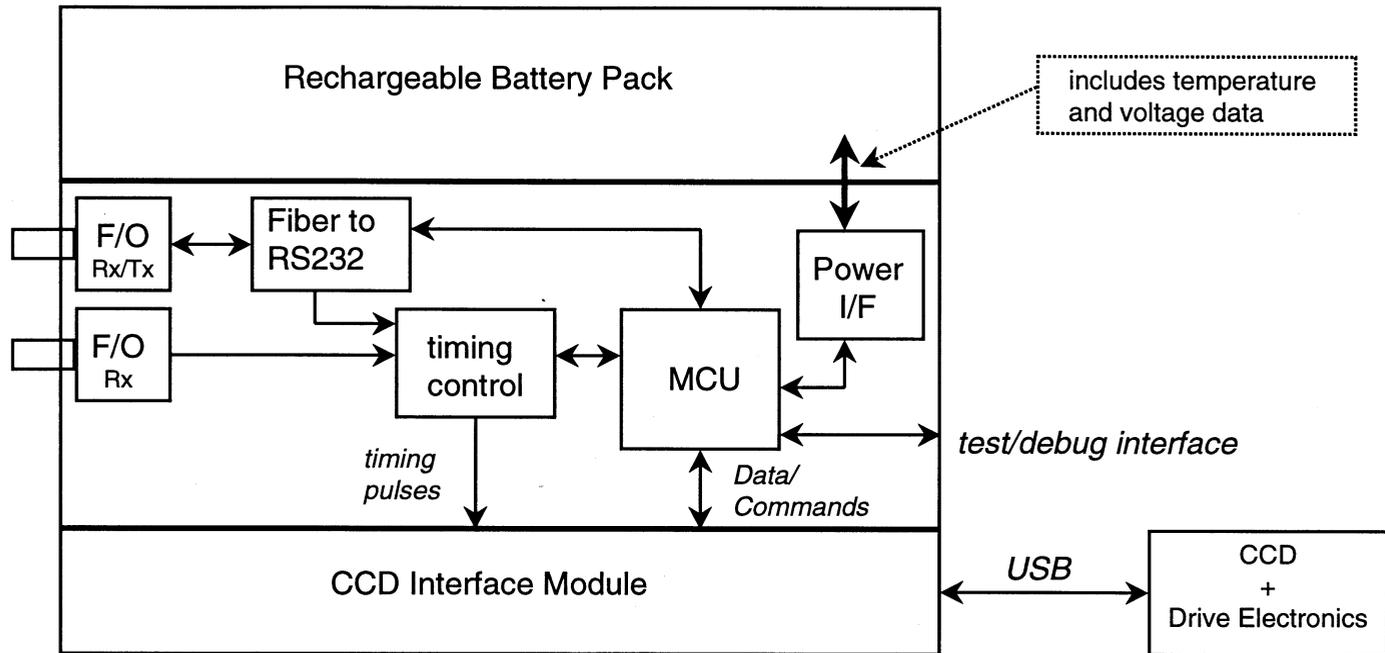
- The DCP interfaces to the OMEGA system via an OIP Client. An OIP server is provided for debug client connections.
- The OIP Message Processor handles all message traffic, including Heartbeat, shot preparation, status, and data requests.
- The Diagnostic Control Application interfaces with the diagnostic, providing all command and control functions except timing control. Communication is via a positive acknowledgement, error-checked protocol.
- A debug application can be run on the DCP (or an alternate machine) for stand-alone operation of the diagnostic.
- The DCA handles data conversion into OMEGA format as well as status logging on *redwood*.

HXS System Detail (DIU)



- Converts RS232 to a fiber optic format (full-duplex over single fiber)
- Receives timing pulse(s) and immediately forwards information via fiber to diagnostic
- May use handshaking lines for status/timing control
- Provides status indicators for various operational parameters (power, optical link okay, etc)

HXS System Detail (Diagnostic)



- Diagnostic will monitor temperatures, currents, and voltages
 - These parameters along with self-test will be used to assess system ready at preshot
- Diagnostic will run from a battery pack to limit system interference
- Batteries are commercial NiCd cells
 - Space-flight heritage in applications with restrictive contamination requirements
 - No contamination if kept within temperature limits
- Timing pulses managed by high-resolution timers
- Data read from the CCD into local memory as soon as the shot is complete
 - transferred via fiber-optic RS232 link to the DCP for storage, display, etc.
- CCD and CCD I/F only powered when needed (low-power mode via commands from DCP)