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## “Mechatronics Kit – Technical Specifications”

### Hardware:

1. 24VDC motor with attached 1000 counts/rev optical encoder
2. Two additional 1000 counts/rev optical encoders
3. Aluminum links and mounts to construct the experiments
4. TI TMS320C6711 DSK Board (DSP board with parallel port interface)
5. PWM/Optical Encoder Data Acquisition Daughter Board. (Mates with DSK Board)
6. PWM Motor AMP Board
7. Terminal Board to integrate with Quanser experiments
8. 5VDC and 24 VDC power supplies and all needed cables

### Software Included:

1. TI's Code Composer Studio supplied with the DSK Board.
  - TI's C6x Optimizing C-Compiler
  - Code Composer Development/Debug IDE (integrated development environment)
  - DSP BIOS/RTDX (Real-time data exchange) NEW from Texas Instruments.
2. Example source files of different controllers for the plants.
3. Visual Basic Interface software examples. All source code included
4. Real Time Workshop, WinCon and Windows' Target drivers.

### DSP Board:

TI TMS320C6711 DSK Board is Texas Instruments' new development system kit for the 150MHz TMS320C6711 floating point DSP. Included on the C6711 board are the following components:

1. TMS320C6711 150 MHz Floating Point DSP
  - 64K bytes internal SRAM
  - 2 32bit timers
  - 2 high speed serial ports (one dedicated to the on board audio CODEC)
  - External interrupts
2. 16M bytes external 100MHz SDRAM
3. 128K bytes external bootable FLASH memory
4. Audio CODEC, serial port interface, DMA data transfer.
5. Expansion connectors for daughter cards

### Data Acquisition board

1. 2 Channels (can be upgrade to 4) of 24 bit quadrature optical encoder input
2. 2 Channels of PWM output. (can be upgraded to 4)
3. Parallel port interface to convert DSP system into a "dumb" data acquisition system. Could also be used as 8 lines of general purpose digital input and 8 lines of digital output

Can be upgraded to include 2 channels of 12bit +/- 10V DAC output. Default configuration does not include the chips needed for the DAC.