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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 TMS320C6713 DSK Board (DSP board with USB 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
 - A complete Integrated Development Environment (IDE), an efficient optimizing C/C++ compiler assembler, linker, debugger, an advanced editor with Code Maestro™ technology
 - DSP/BIOS™ real time kernel
2. Example source files of different controllers for the plants.
3. Visual Basic Interface software examples. All source code included
4. Simulink blocks for communication with the DSP for use with WinCon or RTWT (both sold separately)

DSP Board:

TI TMS320C6713 DSK Board is Texas Instruments' new development system kit for the 225MHz TMS320C6713 floating point DSP. Included on the C6713 board are the following components:

1. Highest-Performance Floating-Point Digital Signal Processor (DSP) C6713
2. 225 MHz, up to 1800 MIPS and 1350 MFLOPS
3. 512K FLASH and 16MB SDRAM
4. Native Instructions for IEEE 754, Single- and Double-Precision Floating point support
5. Two Buffered Serial Ports
6. Two Inter-Integrated Circuit Bus (I²C Bus™) Multi-Master and Slave Interfaces
7. Two 32bit general-purpose timers
8. Expansion port connector for plug in modules

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.