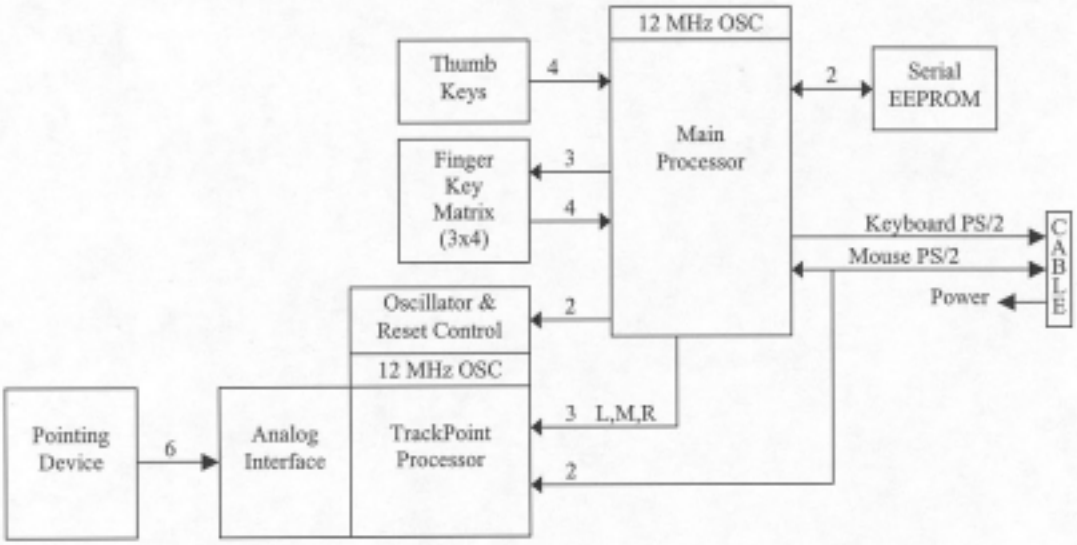
Twiddler2 PS/2 Circuit Description



Twiddler2 PS/2 Block Diagram

As shown in the block diagram, the Twiddler2 PS/2 consists of two microprocessors that provide a PS/2 Mouse and PS/2 Keyboard Interface.

The Main Processor monitors the Finger and Thumb key presses and converts them to PS/2 Scan Codes based on an internal ROM table and/or a table stored in the Serial EEPROM. The ROM table provides the default keymap, and the EEPROM table allows for end user customization. Also the Main Processor monitors the Mouse PS/2 lines to allow it to simulate mouse button clicks (Left, Middle, and Right). When mouse activity is present, the Finger Keys are translated to mouse clicks by the Main Processor. Otherwise the key presses are translated to Scan Codes.

The Main Processor also controls the TrackPoint Processor's Oscillator and Reset lines to allow it to put the TrackPoint Processor in a low power state for applications that don't require a pointing device.

The TrackPoint Processor is interfaced to the Pointing Device via an Analog Interface. The Pointing Device is essentially a 2-Axis Strain Gage that translates force to resistance changes. The Analog Interface converts the resistance changes to voltages which are input to the TrackPoint Processor. The TrackPoint Processor utilizes an integrating A/D to measure the force changes on the Pointing Device. Proprietary firmware, developed by IBM, translates the information measured by the A/D into mouse movements, which are sent to a PC via the Mouse PS/2 lines.

Both processors operate off independent 12 MHz oscillators, which consist of an internal inverter with an external crystal.

Power for the device (+5VDC) is provided from the PS/2 interface.