APPENDIX

DESCRIPTION OF DATA ACQUISITION BOARD AX5621

The AX5621 board is a high-speed, high-resolution analog, digital I/O and timer/counter multi-functions board designed to be used with the IBM personal computer XT/AT or compatible computer system and plugged into one of the system expansion slots. The board can be programmed by the IBM personal computer XT/AT to perform analog to digital (A/D) conversions; digital to analog (D/A) conversions; digital input/output (DIO) transfers and timer/counter controls.

The AX5621 board uses 16-bit monolithic CMOS, successive approximation algorithm A/D converter with low power dissipation and low temperature drift. The programmable gains are 1, 2, 4, 8, the high input impedance ranges of +10V, +5V, +2.5V, +1.25V unipolar and +10V, +5V, +2.5V, +1.25V bipolar. It has fixed 8 channel differential analog inputs to have a good noise immunity, higher accurate A/D conversion. It also has 3 speeds of A/D conversions viz., low speed, middle speed and high speed. Software trigger initiates low speed A/D conversion. Middle speed A/D conversion about up to 3 KHz throughput rate is initiated by interrupts including timer trigger and external trigger. High speed A/D conversion about up to 50 KHz throughput rate is initiated by DMA including timer trigger and external trigger. 2 channels of 16-bit D/A output is available. The D/A converter is operated with internal reference voltage that can sweep out from −10V to +10V via program D/A code from 0 to FFFF (Hex). It also has 8-bits general purpose TTL/DTL compatible digital output and digital input transfers.