1.1 Overview

Description

The 386/ATM Coprocessor is a general-purpose, high-speed IBM® PC/AT® compatible computer with a real-time interface to the SIMATIC® TI® family of programmable controllers. The 386/ATM integrates into a programmable controller the real-time, high-performance computing of a personal computer for space- and cost-sensitive applications. The 386/ATM runs off-the-shelf PC/AT application and development software. This allows high-speed PLC I/O bus interface for data processing, operator interface, and other high-level PC/AT functions.

The 386/ATM provides an industry-standard open architecture that allows you to combine the features of a programmable controller and a personal computer into one small package without being restricted to a proprietary operating system or to single sources for critical software. This allows you to integrate and use commercially available software packages that meet your requirements for features, function, and speed.

The 386/ATM provides:

- True IBM PC/AT-compatible computer that will run any of a wide variety of commercially available IBM PC/AT-compatible software packages
- Industry-standard Microsoft® MS-DOS® operating system
- Direct PLC I/O bus communication path between a PC/AT application and the control function being performed by the PLC
- Major increase in the survivability of personal-computing equipment in harsh control environments
- Built-in diagnostics to help confirm reliable operation and data integrity
- A small package that fits into the Series 505 base and communicates with any of the Series 505 and Series 500™ (e.g., SIMATIC® TI530C™) controllers and I/O
- Battery-backed real-time clock
- Socket for optional 80C387SX math coprocessor to provide high-speed arithmetic-processing capability

Using the 386/ATM Coprocessor

The 386/ATM Coprocessor is a standard IBM PC/AT computer with one added feature: a hardware interface to the PLC I/O bus which can be utilized by an appropriate application program.

Any IBM PC/AT-compatible software runs on the 386/ATM. If you require communication between the 386/ATM and the PLC, you can use the standard RS-232 capabilities that most vendors supply with their software products. These RS-232 device drivers are unique to each vendor's software product and generally serve to handle the communication between a personal computer (in this case, the 386/ATM) and the PLC.

When a higher speed communication path is required, the 386ATM device driver can be integrated with the application package. Some application packages are configurable to allow the use of a device driver, while others require changes to the application software by the software vendor. See Figure 1-1. Since it operates over the parallel PLC bus, the 386ATM device driver allows the maximum in versatility and speed between the PLC and the 386/ATM. This eliminates the slow serial link which restricts PLC access.

Applications

A wide variety of SIMATIC TI and third-party software packages is available which will run on the 386/ATM. In fact, software product/vendor selection is easy—if the software is IBM PC/AT-compatible, will operate with MS-DOS 5.0 and is compatible with memory and speed characteristics, it will run on the 386/ATM. Applications range from small to large. Examples include the following.

- Operator interface
- TISOFT2™ software
- Supervisor Control and Data Acquisition (SCADA)
- Statistical Quality Control (SQC)
- Statistical Process Control (SPC)
- Batch/Recipe management
- Report generation
- Math processing and data manipulation
- Production reporting and report generation
- Foreign device interface (intelligent sensor, etc., with RS-232 interfaces)
- Communication to third-party controllers
- Loop tuning

As a policy, Siemens Industrial Automation, Inc. does not recommend nor give testimonials for third-party products. However, if none of our software products meets your needs, you can use a third-party software package. IBM compatibility confirms that such software should run on the 386/ATM Coprocessor.