

Control Systems Division

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The technological results of the control systems division in 2002 are as follows.

① Development of industrial personal computer “SANMOTION SMS-15”, which has become the S-MAC controller's center in the solutions business. Because of the improved processing performance and general features, the SANMOTION SMS-15 can be utilized in markets

other than motion control.
 ② The soft motion descriptive language “AML”, which is the motion controller's core software, was enhanced, and Ver.7 was released. It includes the control of the X-Y-Z coordinate system by straight line/circular interpolation function.
 ③ “SERCOS master of the PLC bus connection”, a SERCOS controller to which the PLC (programmable

logic controller) base can connect was developed. It is possible to expect new applications for the controller, drives and motor by placing a SERCOS controller onto a PLC base with high circulation domestically, along with the PC based controller that has been chiefly developed up to now.

Development of the Industrial Personal Computer “SANMOTION SMS-15”

The “SANMOTION SMS-15” was developed as the higher-end model of the “SANMOTION SMS-10” industrial personal computer. The Geode GX1-300MHz replaced the SANMOTION SMS-10's Am486DX5-133MHz processor. Both the VGA and the SERCOS interface were built into the main body, which achieved about a 23% reduction in volume, and a 30% reduction in cost, when compared to the SANMOTION SMS-10.

A type I and II CompactFlash socket is used for mass storage. In

addition, the SANMOTION SMS-15 includes a 2 channel USB interface and dual ethernet ports. As a result, in addition to its current use as a motion controller, use of this controller in other fields such as remote monitoring, measurement, security, and mini server, etc. can be expected. This product is recognized as an eco-product because of its power savings and its reduction in size.



Extension of Function to “AML” Ver.7

A new function was added to the soft motion descriptive language “AML”, and it was released as Ver.7. The added functions are as follows.

① Support of PLC (MELSEC-Q) Series

It supports RS232C communication with the Q Series PLC from Mitsubishi Denki Ltd. As a result, the PLC and AML can work together to control more complex systems.

② SERCOS communication of 8/16MHz

Until now, the communication speed of SERCOS was 2/4MHz, but 8/16MHz are now supported in all recently developed Sanyo Denki products. The higher speed communication enables faster data exchange rates for high axis count systems.

③ Straight line / circular interpolation functionality

The straight line and the circular

interpolation function were joined, and interpolation control by a simple AML language instruction has been achieved.

④ Easy User Interface

The Smart Editor for “AML” development was redesigned to a tool that is easy for a user. In this release, great improvements were added to the Smart Editor used in the programming in “AML” Ver.7.

Even with no prior knowledge of the “AML” language, the new GUI (Graphical User Interface) allows a developer who has previously used a programming language such as Visual Basic to intuitively begin program development. The result is an improvement in the development efficiency and shortening of the development time for the user.



Development of the SERCOS Master of PLC Bus Connection

The SERCOS interface module was developed as a module for the Yokogawa FA-M3 controller, which Electric Works, Ltd. had commercialized. Because FA-M3 has a 'Universal I/O Range', and the design specifications are open to the public, an original I/O module could be developed. Because a special ASIC does the complex transfer procedure between the CPU module of the system and the I/O module, the interface can be made only by entering necessary data in Dual Port RAM. PLCs are still main

stream products in Japan and China, and the installation of the SERCOS interface in the system based on this PLC is significant, even though PLCs are a declining tendency in Europe and America as the trend of the controller industry. I want to expect the spread of the SERCOS interface in these countries through this system.

* The product name of the document is a registered trademark or a trademark of each company.



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Control Systems Division, 1st Solution Dept.
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