

Expanded Memory Space for Larger Applications
General-Purpose 8-Bit Microcomputer

CXP740056, CXP740096, CXP740010

Due to the steadily increasing functionality provided by audio and video equipment, the scale of the control software used is increasing as well.

In response to many customers' requests, Sony has developed the SPC700 α II Series, which doubles the memory space provided by the SPC700 Series.

The CXP740056, CXP740096, and CXP740010, which are the first release in this new series, provide 4K bytes of RAM and a maximum 120K bytes of ROM. At the same time these products are multi-function general-purpose microcomputers that achieve low-voltage high-speed operation.

These ICs include an extensive set of on-chip peripheral functions and are appropriate for single-chip control of MD systems.

- Based on the newly-developed SPC700 α II CPU core
- Large ROM and RAM capacities
 - ROM: CXP740056 56K bytes
CXP740096 96K bytes
CXP740010 120K bytes
 - RAM: 4096 bytes
- Low-voltage, high-speed operation
 - Minimum instruction cycle: 167 ns (At 4.5 to 5.5 V with a 24-MHz clock)
 - Minimum instruction cycle: 333 ns (At 2.7 to 5.5 V with a 12-MHz clock)
- Highly flexible on-chip peripheral functions
- Compact advanced development tools

■ Based on the Newly-Developed SPC700 α II CPU Core

The CXP740056, CXP740096, and CXP740010 adopt the newly-developed SPC700 α II Series 8-bit CPU core. At the same time as supporting a memory space of 128K bytes, which is double that of the earlier SPC700 Series, the SPC700 α II CPU core is a compact and high-speed CPU core. Except for certain instructions, the SPC700 α II CPU core is instruction compatible with the SPC700 Series. This provides smooth porting of programs developed for the earlier CPU.

■ Large ROM and RAM Capacities

To take advantage of the large memory space, these products provide up to 120K bytes of program ROM (CXP740010), and 4096 bytes of RAM. Thus these products can respond to the needs for larger software systems associated with the increasing functionality of contemporary audio and video equipment.

■ Low-Voltage, High-Speed Operation

These microcomputers feature the wide voltage range of 2.7 to 5.5 V, and a minimum instruction cycle of 167 ns (at 4.5 to 5.5 V with a 24-MHz clock). Even when operating at the low voltage of 2.7 V, they achieve a minimum instruction cycle of 333 ns (with a 12-MHz clock). Thus they can exhibit excellent performance even in equipment that requires low power consumption. Furthermore, since they provide sleep and stop functions, they can achieve ultralow power consumption during standby.

■ Highly Flexible On-Chip Peripheral Functions

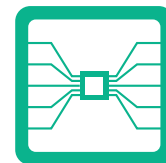
Since the microcomputers include highly general-purpose peripheral functions such as an A/D converter, a serial interface, and a PWM output, they can support a wide range of applications such as MD systems. At the same time as providing software controlled pull-up resistors on all I/O ports, they also specify the I/O direction in 1-bit units. Additionally, the external interrupt pin edge polarity switching function, the noise elimination function, the communication port system output buffer capability switching function, and other functions allow these microcomputers to flexibly support our customers' system structures.

■ Compact Advanced Development Tools

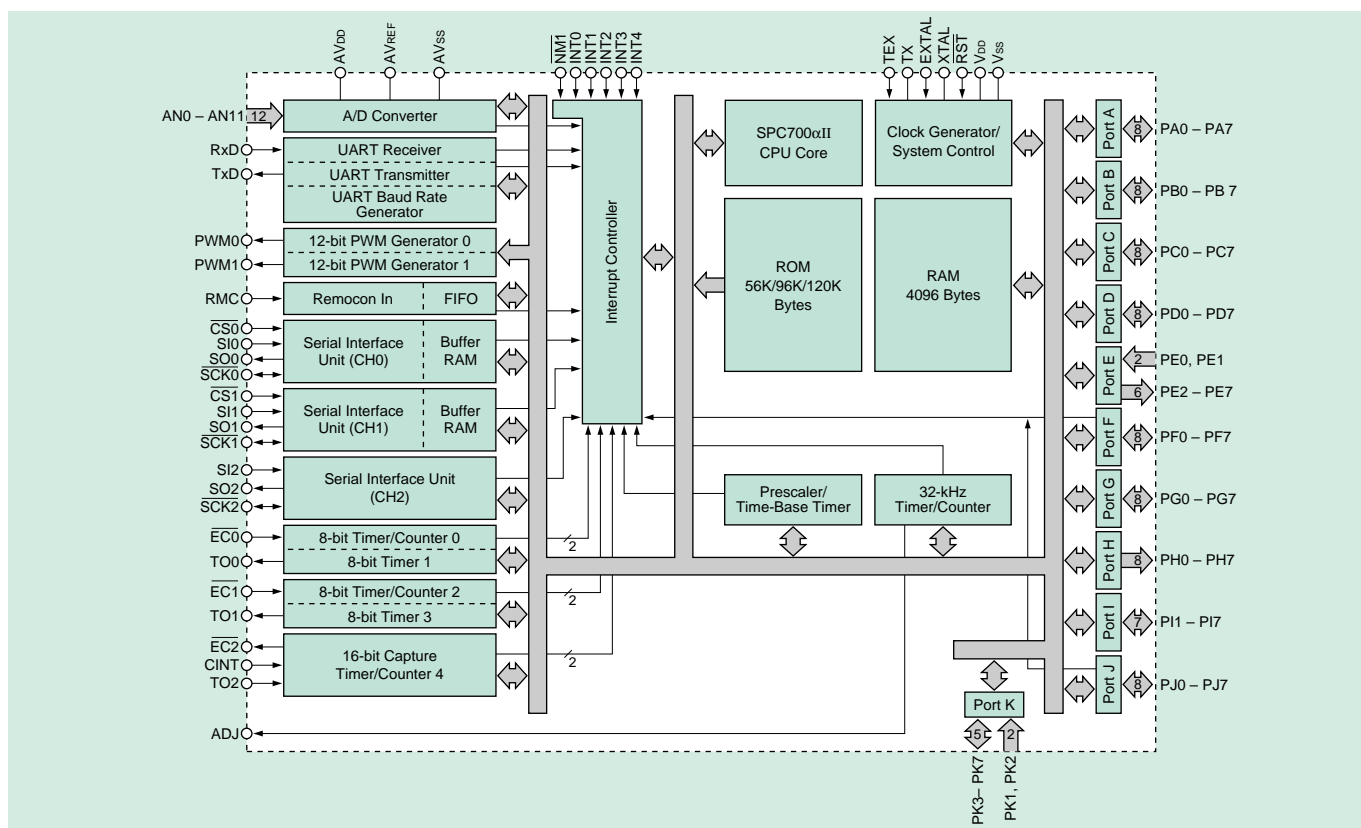
As was the case with the SPC700 Series, a piggy/evaluation chip (the CXP740000) is also available for these products. The newly developed compact design NICE-SPC700 α II in-circuit emulator, which can also be used with the SPC700 Series, and the RAM TRACER II real-time debugging support tool (manufactured by Mitec SYSTEMS, Inc.) are available as a software development environment.

V O I C E

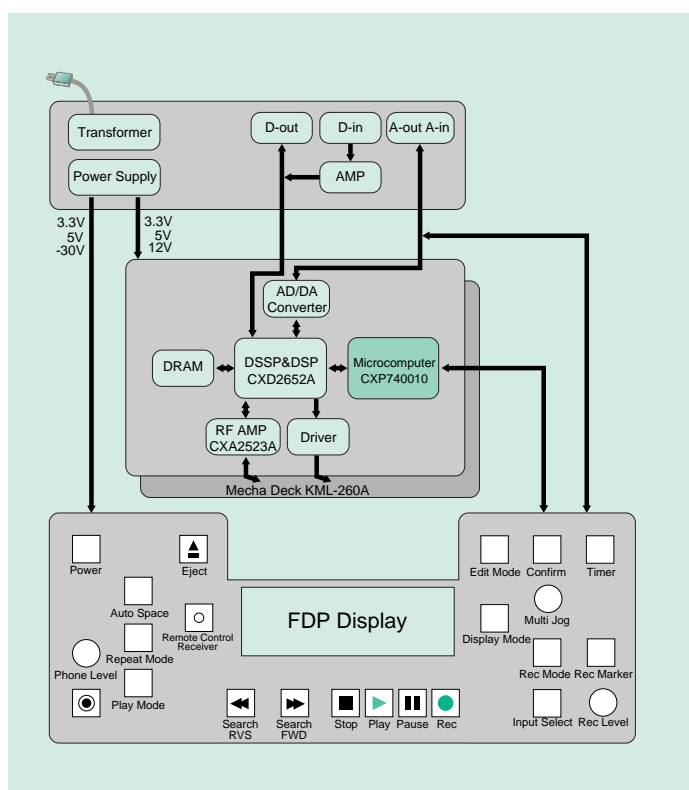
We developed this microcomputer as the ultimate general-purpose 8-bit device targeted for the latest MD players. It features specifications, from the CPU core to the I/O ports, carefully and fully optimized for its target applications. We are committed to continuing to incorporate our customers' comments and desires into our microcomputer products.



New Products



■ Figure 1 CXP740056, CXP740096, and CXP740010 Block Diagram



■ Figure 2 Sample CXP740010 MD System Application



■ Photograph 1 NICE-SPC700αII In-Circuit Emulator



■ Photograph 2 RAM TRACER II Debugging Support Tool