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XILINX DEVELOPS NEW CLASS OF ASIC

SAN JOSE, Calif., November 1, 1985--Xilinx Inc. today introduced a new type of application-specific integrated circuit (ASIC) that can be quickly programmed in-house by equipment manufacturers for a wide array of system logic applications. The new device, called a logic cell array, offers a high level of integration together with the versatility of a gate array-like architecture.

The first entry in Xilinx's logic cell array product line is called the XC 2064.

Using Xilinx's development system, manufacturers can configure logic cell arrays for a broad range of logic functions in as little as one week. Manufacturers are spared the high costs (\$20,000 or more) and long turn-around (several months or longer) entailed by the design and production of semicustom ICs. They also avoid the risk that the semicustom devices, when delivered, will not function properly in their systems.

"Logic cell arrays provide all the benefits associated with other ASICs--reduced chip count, high performance, smaller system size, lower power consumption and high reliability--with none of the time, cost and risk penalties," said Scott Brown, vice president of Xilinx. "Logic cell

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arrays simplify inventories and support just-in-time manufacturing by allowing manufacturers to stock only a single part type for many applications."

Logic cell arrays use CMOS technology and permit unlimited reprogramming without removal from the system. Device internal configurations can be easily modified for debugging and updating during the system design or production process. Reconfiguration can be completed in a system in 12 milliseconds, allowing logic cell arrays to serve multiple tasks with differing logic requirements.

Versatile Architecture and High Performance

Logic cell arrays use a gate array-like architecture, with a central array of logic blocks surrounded by input/output (I/O) blocks. Users can configure the logic and I/O blocks and interconnect them in a virtually unlimited number of ways to build large-scale logic functions. User-configuration data are held in static RAM storage elements within the chip; in a system, the data are read into the storage elements from erasable programmable read-only memory (EPROM), electrically erasable PROM, floppy disk or other non-volatile storage device. A battery-backup mode is also available to retain configuration data without reliance on a separate memory device.

The XC 2064 contains 64 configurable logic blocks and 58 I/O blocks. The I/O blocks can be configured on a pin-by-pin basis for input, output, bidirectional or tristate functions.

Overall, the XC 2064 supplies 1,000 to 1,500 gate equivalents (the standard measure of gate-array complexity). The device is therefore comparable to smaller gate arrays and provides higher complexity than do programmable array logic type (or "PAL-type") devices, which typically offer

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from 150 to 300 equivalent gates. The XC 2064 can take the place of smaller gate arrays; 15 to 75 SSI and MSI (small- and medium-scale integration) devices; or four or more currently available PAL-type devices.

Unlike other available programmable products, logic cell arrays can be completely tested prior to programming, resulting in improved quality control and incoming inspection. Customers are assured that each device will function properly for all logic configurations.

High Performance and Easy Design

The XC 2064 is manufactured using a high-performance CMOS process. The device initially is available in a high-speed, 18-megahertz version and will be offered in a higher-speed, 33-megahertz version. The current part rivals the performance of bipolar and CMOS programmable products, LS TTL (low-power Schottky transistor-transistor logic) components and gate arrays--yet features markedly lower power consumption.

Xilinx's XACT development system provides complete design entry (in either graphical or text input form); design rules checking; PROM formatting; simulation and timing verification; macro library (a library of logic functions from which designers can choose); and in-circuit emulation capabilities. XACT software runs on an IBM PC XT or PC AT equipped with 640 kilobytes of random-access memory, a color graphics monitor and mouse.

Price and Availability

The XC 2064 logic cell array is available now at a unit price of \$55 to \$80. Price depends on order size (from one unit up to quantities of hundreds) and the IC package selected. The XC 2064 is expected to sell in the range of \$12 to \$15 in quantities from 10,000 to 50,000 units by late 1986 or early 1987. The Xilinx XACT development system is available now at

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a price of \$12,000. Both the development system and logic cell array are available off-the-shelf from Hamilton Avnet, Xilinx's distributor in the United States and Canada.

Xilinx Inc., of San Jose, Calif., develops, produces and markets user-programmable integrated circuits and development systems based on the company's proprietary logic cell array technology.

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NOTE: PAL is a trademark of Monolithic Memories Inc.