

# The Museum of Modern Art

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## INFORMATION ART: DIAGRAMMING MICROCHIPS

September 6 - October 30, 1990

The first exhibition to examine the computer chip as an icon of our technological civilization opens at The Museum of Modern Art on September 6, 1990. Organized by Cara McCarty, associate curator in the Department of Architecture and Design, INFORMATION ART: DIAGRAMMING MICROCHIPS reveals the dynamic patterns and sheer intricacy of these exquisitely crafted designs. On view through October 30, this exhibition is made possible by the Intel Corporation Foundation.

Since its invention in 1958, the integrated circuit has grown increasingly smaller, more sophisticated, and more powerful. No larger than a thumbnail, today's microchips are layered with several million electronic components capable of performing millions of calculations per second. Impossible to design without computer assistance, the chip begins as a diagram one- to two-hundred times larger, which is ultimately reduced photographically and etched into a sliver of silicon. Color-coded by layer like multilevel roadmaps, these diagrams are used by engineers for guidance in correcting or verifying a circuit design.

INFORMATION ART: DIAGRAMMING MICROCHIPS presents thirty-one computer-generated plots of twenty-two circuits, along with the actual chips. Although not designed for aesthetic appeal, these diagrams--large, intricate, and richly colored--are powerful and provocative images in their own right. Their

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complex patterns resemble the weave of textiles, aerial views of cities, or abstract geometric paintings. Ms. McCarty writes in the catalogue accompanying the exhibition: "The texture of the lines, intrinsic spatial features, delicacy, repetitive detail, and colors create sumptuous patterns that have the same power to inspire and intrigue us as some of the best paintings of our time. They are patterns for delectation; we can take pleasure in them even if we do not understand the technology."

Within the exhibition, the circuits are organized by type or purpose: memory chips, logic chips, application-specific integrated circuits (ASIC), microprocessors, and neural nets. The diverse patterns of each diagram convey the chip's function. Memory chips, used to store enormous quantities of data, are the densest of all integrated circuits; laid out in tabular form, they are primarily one cell repeated thousands of times in an impenetrable grid. By contrast, the hexagonal or radial configurations of the neural nets have been designed to emulate the functioning of the human retina.

INFORMATION ART: DIAGRAMMING MICROCHIPS includes designs by AT&T Bell Laboratories, Digital Equipment Corp., Hewlett-Packard Company, IBM, Intel, LSI Logic Corp., Synaptics, Inc., Texas Instruments, and the University of Pennsylvania, among others. Following its New York showing, a national tour is planned.

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PUBLICATION *Information Art: Diagramming Microchips* by Cara McCarty. 48 pages. 32 color and 10 black-and-white illustrations. Paperbound, \$14.95. Available in The MoMA Book Store and distributed by Harry N. Abrams, Inc.

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