New Products

Quality Holographic Images.
An efficient way of reconstructing holographic images with simple light sources has been devised by two engineers at IBM's systems development laboratory, Robert H. Katyl and John H. King, Jr., think the technique might be applicable in future holographic data storage systems where an array of reliable, inexpensive light sources would be needed to read out the images of stored information.

By applying well-known optical principles of color correction to holography, Katyl and King have eliminated the large color blurring that would otherwise accompany an image reconstructed with broadband, non-monochromatic light. High quality images have been produced from Fresnel holograms using a high-pressure xenon arc lamp. Other possible sources include laser diodes, light-emitting diodes and cathode ray tubes.

As in previous broadband schemes, a grating or holographic lens is used next to the hologram to eliminate lateral blurring of the image. To eliminate the remaining first-order color blurring, the IBM engineers added a dispersive imaging lens between the hologram and the plane of the reconstructed image. The result is a clear, well-defined image, free from all first-order chromatic aberrations.

High performance magnetic tape data cartridge — Extremely high performance characteristics are claimed for a uniquely designed quarter-inch tape cartridge for data processing systems which was introduced by 3M Company at the Fall Joint Computer Conference in Las Vegas.

High acceleration and operating speeds and gentle tape handling qualities required by digital recording systems are achieved by a band-drive design which tightly couples the tape packs and provides a unique differential constant tension drive. The data cartridge is rated for speeds to 180 in/sec and acceleration and deceleration of 2,000 in/sec². This precise tape motion permits recording of up to 4 tracks and 1,600 bits per inch. Life tests of the data cartridge components have exceeded 5,000 passes.

A simple, inexpensive single motor transport drives the cartridge. The band-drive eliminates the classical capstan which is common to digital cassette systems. No tape driving or tape position sensing elements penetrate the cartridge.

For further information, contact the 3M Minicom Division at 300 South Lewis Road, Camarillo, California 93010.

Experimental CCD memory — An experimental charge-coupled device (CCD) buffer memory system that operates in a machine environment was described by engineers from International Business Machines Corporation at the 1972 International Solid-State Circuits Conference sponsored by the Institute of Electrical and Electronics Engineers.

The basic building block of the operational buffer memory is a silicon chip that contains two 480-bit shift register (SR) channels, providing 960 bits of information storage per chip. The CCD chip is mounted on a 14-pin TO-5 header to provide a functional memory module. Six memory modules, together with support circuit modules, are packaged on a 3- by 4-inch multilayered pluggable card for a total memory capacity of 5,760 bits.

To demonstrate the feasibility of the buffer storage, IBM engineers designed the experimental card to be workable in an existing small machine. Each 480-bit CCD shift register consists of 10 CCD channels in series, with a restore amplifier after every 48 memory bits. Six 480-bit shift registers are serially connected to form a buffer of 2,880 bits, and two 2,880-bit storage buffers contained on the six memory chips provide the total memory capacity. The shift register utilizes four phase drivers to shift at a rate of 500,000 shifts per second (data rate). A total of 3.5 watts of power is dissipated on the air-cooled card.

The CCD memory was made by IBM's Components Division Laboratory at Essex Junction, Vermont, and was described by Norbert G. Vogl and Thomas V. Harroun in their paper entitled "Operating Memory System Using Charge-Coupled Devices," presented at the conference.

Holographic Read-Only Memory — OPTICAL DATA SYSTEMS, INC., developer and manufacturer of holographic memory systems, has announced the HOLOSCAN, first in a series of holographic memory products featuring a unique new way of storing and retrieving data for read-only applications.

The 12-megabit non-volatile holographic film memory is stored in a small cassette produced at OPTICAL DATA SYSTEMS under computer control from magnetic tape data supplied by the user. The cassette is placed in the HOLOSCAN unit which can be interfaced with TTL compatible minicomputers or I/O units. Any block of information within the memory can be accessed in an average speed of 3-seconds.

Transfer rate is serial at 100,000 bytes per second. Error rate is better than 1 part in 10⁷ with parity. The holographic film memory does not deteriorate with age, nor is it affected by bit drop-out, magnetism, or humidity.

Single unit price is $1,495.00 with OEM discounts available. Contact Optical Data Systems Incorporated at 556 Ellis Street, Mountain View, California 94040 for further information.

Logic tester — Computer Automation, Inc., has introduced its new CAPABLE II Tester System, the first low-cost, computer-controlled logic testing system with a built-in software package that
automatically generates test programs and isolates faults in digital logic cards, MSI, LSI, ROM and IC devices.

CAPABLE II software now enables production technicians to perform up to 1,000,000 pin tests per second, with extreme reliability. Priced at about $39,500, the CAPABLE II system includes a powerful 16-bit computer with 8K-core memory, an interactive operating system and test programs, a single-unit digital cassette tape system and teletype, along with other features.

For information, contact Computer Automation Incorporated at 895 West Sixteenth Street, Newport Beach, Ca. 92660.

Large character ticket printer — Di-An Controls, Inc. has introduced a new line of high-speed ticket printers which are capable of selectively printing a combination of characters .150", .4" and .8" high all on the same document.

The device operates under computer control and prints bar codes and alphanumericics at speeds up to 1,200 lines per minute. It also cuts the paper stock and ejects tickets, tags, cards or labels so they are ready to be distributed and used individually.

The new line of printers print on pre-printed, blank, gummed, perforated, tab-card, weatherproof or multi-copy stock in a variety of thicknesses, widths and lengths. Either fanfold or continuous roll paper may be used. Individual card stock handling is also available. Various models allow for ticket heights of from 1 to 4 inches. They can print up to 16 lines depending on ticket width and the height of the characters. Tickets can be cut to any length. For additional information, Di-An Controls, Inc. at 944 Dorchester Ave. Boston, Ma. 02125.

Monolithic waveform generator — A monolithic integrated circuit waveform generator has been introduced by Exar Integrated Systems. Believed to be the first completely monolithic waveform generator, the XR-205 was integrated on a 78 mil. square silicon chip. Its performance is comparable to many large complex discrete generators on the market and is available at a fraction of their cost — $12.00 in 100-up quantities.

The XR-205 provides sine, square, triangle, ramp and sawtooth output waveforms, which can be both amplitude and frequency modulated. The circuit is comprised of three separate sections: a voltage-controlled oscillator (VCO), which generates the basic waveforms; a balanced modulator which provides wave-shaping and amplitude modulation; and a buffer amplifier which provides a low impedance output with high current drive capability.

For more information, contact Exar Integrated Systems, 733 N. Pastoria Avenue, Sunnyvale, California 94086.

Solid-state hexadecimal indicator — A low-cost solid-state light-emitting diode (LED) display is available to convert binary information to a base 16 number system automatically. The display, which allows for unique characters and symbols, fits any 16 to 64-character display. The display costs just $19.95.

Hewlett-Packard’s 5082-7340 Hexadecimal Indicator, shows digits from 0 to 9 and letters A through F. Decoder/driver/memory electronics are built in. Price in quantities of 1000 is $12.25 per digit.

For computer applications, this single character display replaces four lamps required to show the binary contents of an accumulator or register when programming or troubleshooting computer systems. The display is suited to applications other than computers wherever more than 10 states need be shown, and where a standard positive logic input is available. The operator need not convert from binary to hexadecimal — this conversion is performed automatically by the 5082-7340.

Write to Hewlett-Packard, 1501 Page Mill Road, Palo Alto, California 94304 for further information.

Digitally programmable power supplies — Macrodta has announced the availability of an independent programmable power supply module which can be used in functional and parametric testing of IC’s.

The MD-44 Programmable Power Supply is a low-power precision power supply units, with provision for a nth. These units supply the power and functional references for an IC device under test. The power supply delivers functional and parametric testing. Six of the supplies are reference levels only, of which two are receive references (one and zero levels), and four are two driver levels (clock and logic one and zero levels). The two remaining supplies and the optional supply are intended as power for the device under test.

Prices on the MD-44 start at less than $5,000 for three independent sources, and delivery is within 30 days. Macrodta Company is located at 20440 Corisco Street, Chatsworth, California 91311, (213) 822-8880.

Test generator — POCKET PIPPER Model PP-1A is a portable step generator that features output squarewave frequencies of 2 kHz and 200 kHz, each with an ultra-fast risetime under 2 nsec. It has an output Z of 50 ohms and is used to test: transient response in oscilloscopes to 50 MHz; BW and risetime of video amplifiers, surge impedance of coaxial cables, LC filters and delay lines.

PP-1A also converts your oscilloscope to a low-frequency TDR system. Price is $19.95. TFE Box 2232. Denver, Colorado 80201.