Scan Optics System 501 contains an 8K CPU, a journal tape paper transport, magnetic tape drive, and I/O console printer and keyboard, with various options available.

New Optical Scanner Reads Journal Tape

Scan-Optics has announced shipment and installation of the first production model of its System 501, a new optical scanner designed to read journal tape or tally rolls prepared on adding and bookkeeping machines, cash registers, and roll paper impact printers.

Designed to accommodate a seated operator, System 501 reads standard OCR fonts (NOF, 1428, 1403, 407, OCR-A and B alphanumeric) at up to 2000 characters per second. Speeds of up to 2000 lines per minute are attainable, although Scan-Optics points out that actual line reading speeds are determined by the number of characters read, tape width, and data processing required prior to outputting to magnetic tape.

System 501 contains an 8K CPU (expandable to 32K), a journal tape paper transport, 7- or 9-track 800 bpi magnetic tape drive, an I/O console printer and keyboard with on-line character insertion feature and 20 character positions. Options include a line printer, card reader, punched paper tape reader and/or punch, and 1600 bpi magnetic tape and communication capability.

All Scan-Optics PRL software will operate with the System 501, and it is compatible with other systems in the line which have journal tape reading as an option. The new system can be upgraded to a System 530 or 540 without loss of journal tape reading capability, the company states.

Prices range from $2450 to $2875 per month on a one- to three-year lease. Monthly maintenance is $750 within Scan-Optics service locations. Delivery is four months ARO.

Reader Service Number 282

Interdata Develops New 16-Bit Software

Interdata has developed a new multi-tasking operating system called OS/16 MT2 which optimizes the use of its 16-bit minicomputers in real-time, program development, and computational applications.

The new operating system is resident in 16K bytes of memory and may be installed on any 16-bit Interdata processor, such as the new Model 6/16, equipped with an input/output device. It fully supports all Interdata peripheral equipment.

Features include a command substitution system which allows multiple operations to be executed with only one command, multiple shared libraries, round-robin scheduling, file protection conforming to ISA standards, task-handled traps, systems overlays, and task-to-task communication.

User-written tasks with up to 256 priorities are supported by the task management feature of OS/16 MT2. Inter-task communications and task-handled traps are also provided.

Memory management features include a task establisher utility, partitioned memory, roll-in/roll-out, and multiple overlay facilities.

File management features include indexed and contiguous files and file protection.

The user interface features enable OS/16 MT2 to simplify communication between the user and the system at the program and operator level.

The new Interdata OS supports several language processors, software utilities, and optional hardware equipment. Language processors supported are Extended FORTRAN IV, FORTRAN V, Extended BASIC, and the Common Assembly Language Assembler. Supported software utilities are OS EDIT, OS AIDS, OS Library Loader, OS copy, and ITAM/16 for data communications.

The one-time charge for OS/16 MT2 is $1400; it is available on cards and all magnetic media.

Reader Service Number 285

Dual-Beam IC Socket Package Announced

A low-profile socket package that will not allow solder wicking has been introduced by Berg Electronics, a division of the Du Pont Company.

The DIP package consists of tin- (or gold-) plated phosphor-bronze socket terminals inserted into a precision-molded one-piece glass-filled polyester thermoplastic housing. The housing has a height of 0.175 inch (maximum) and its width of 0.400 inch (maximum) allows for side-by-side mounting. The socket terminal is of face-wipe design and provides maximum wiping action with mating leads. Each terminal functions as a free-standing device. A band of solder resist in the socket terminal prevents solder wicking into the contact area, Berg states.

The dual-beam IC socket package has a target area of 0.040 inch by 0.018 inch. According to Berg, its press-fit legs will
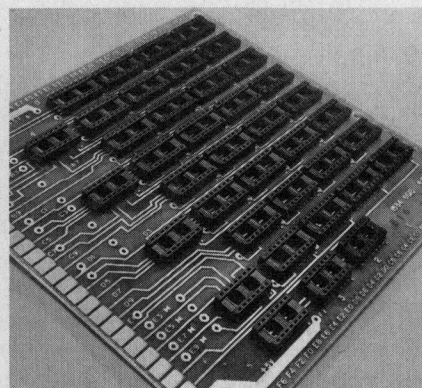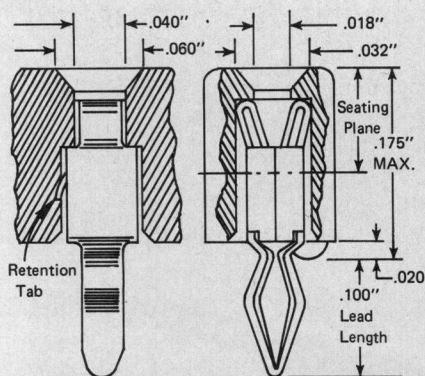
Low-profile, dual-beam socket package contains a band of solder resist in the terminal which prevents solder from wicking into the contact area, according to the manufacturer, Berg Electronics.

not allow the package to fall out of the printed circuit board after insertion. The housing has stand-offs to facilitate rinsing and cleaning of boards and to allow for air circulation. Housing material carries a UL 94-VO rating.

Reader Service Number 289

New Conographic Display Terminal is under $10,000

A new addition to the Conographic graphic display terminal line, offering high resolution, selective erase, and built-in serial interface has been introduced by Hughes Aircraft Company's industrial products division.

The fully interactive Conographic-9 terminal, with a base price of $9,750, is designed to do with hardware what most terminals require to be done in software. In addition, according to Hughes, its capability can be greatly expanded with a variety of available options.

The unit is intended to provide the user with a complete electronics package that can be plugged directly into a 110-volt outlet and a telecommunications coupler, with no additional hardware options required.

Standard features include 17-inch 1029-line-scan video monitor with high screen light output, built-in zoom/pan, a joystick for graphics interaction, and a hardware graphics processor for scaling graphics and alphanumerics. Architecture of the single-unit desktop terminal embodies a microprocessor driven by micro-programs contained in read-only memories. A serial interface connecting the detached keyboard to the CRT display eliminates restrictions imposed by parallel interfaces.

In the Conographic process, curvilinear information is displayed by converting all contour data to conic curves. In this way, the terminal produces smoother curves than conventional x-y plotting, and accomplishes this with considerable reduction in the data required. Hughes states that this data reduction results in more cost-effective communication by permitting faster image transmission, higher effective telecommunications capacity, and lower storage requirements at the host computer.


New addition to Hughes Aircraft Company's Conographic graphic display terminal line offers high resolution, selective erase, high light output, and built-in serial interface, without requiring additional hardware options. Hughes points out that the new Conographic-9 terminal displays curvilinear information by conic curve generation rather than by x-y plotting, producing smoother curves with considerable reduction in data required.

Optional extras available with the system include an enhanced graphics hardware package with rotations, reflections, and line-texturing features, and programmable grey levels for graphics (16 levels) and for digital raster continuous tone images (256 levels). In addition, parallel interfaces for a variety of minicomputers are offered, as are interfaces to digitizers for local data input and control of the interactive CRT cursor.

The new Conographic-9 generator offers a continuous writing mode and a new capability which guarantees that writing occurs only during vertical retrace time.

Software programs are available in FORTRAN IV including a new set of Tektronix-compatible subroutines. The basic software package, called CONO-PAC, is available at no extra cost.

Reader Service Number 290
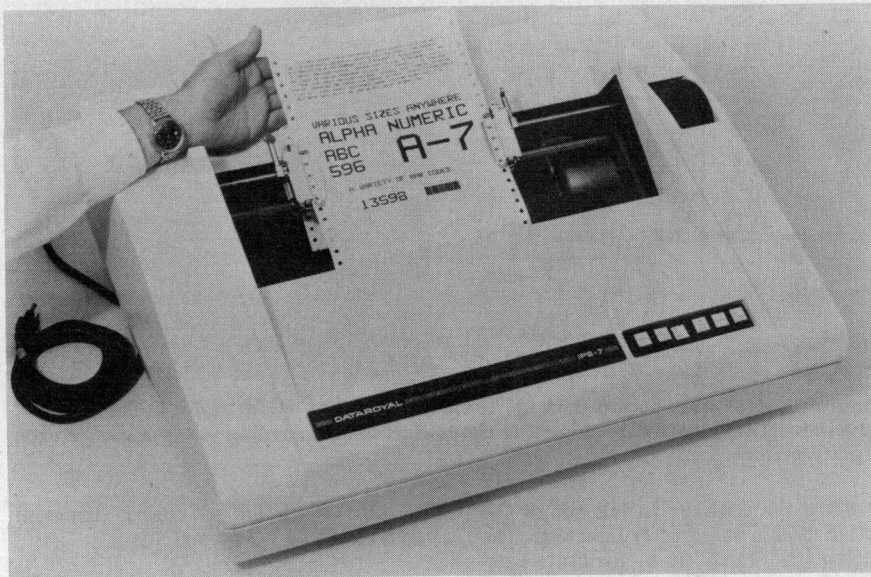
Intelligent printing system for use in industrial environments prints in variable type sizes and a variety of bar codes.

Variable-Type-Size Printer Designed for Industrial Environments

Dataroyal's new desktop, medium-speed intelligent printing system (IPS-7) is designed for continuous use in adverse industrial environments, providing product identification and on-line reporting. Bar codes and data describing products of high value, in large volume, or with variable characteristics such as weight, size, colors, inspection data, or routing, are printed on up to four copies. Multiple type sizes are positioned anywhere on each page by dot-matrix expandable-character printing. Large type sizes are easily seen at a distance, as in high warehouse stacks. Smaller type, in increments of one-ninth inch, carries details in a small space. According to Dataroyal, one or more units

are easily added—"plug-in-and-operate"—to existing equipment or designed into new information-handling systems. Dual electronic error-checking (LRC and parity) insures that units print what is put in and reject false information.

Reader Service Number 274

Dataram Offers 16K x 12 Add-In's for DEC PDP-8 Series

Dataram has introduced its DR-118 and DR-118/A single-board 16K core memory systems for use with DEC's PDP-8 series of minicomputers. The systems are Omnibus-compatible and can be inserted directly into the backboard of the host minicomputer. The DR-118 is compatible with the PDP-8/E, F, and M, and the DR-118/A is compatible with the PDP-8/A-400 and the PDP-8/A-500. Both systems are available in either 16K x 12 or 8K x 12 configurations.

The systems, 16K or 8K, occupy only two PDP-8 card slots. One slot is used to interface to the PDP-8 backboard, and the additional slot is for clearance of the core memory stack which plugs into the back of the memory module. Address strapping is achieved by means of a 16-pin IC plug on the memory module.

Single quantity pricing is $2045 and $1590 for the 16K x 12 and 8K x 12 systems respectively. Delivery is 30 days ARO. Prior to shipment, all systems receive operational burn-in for a minimum of 72 hours, and a one-year warranty is standard.

New 300 CPS Photoelectric Tape Readers Introduced by Superior Electric

Reading rates of 0 to 300 characters per second asynchronously and 600 characters per second synchronously are available in reel and fanfold type Slo-Syn photoelectric tape readers. The new units, by Superior Electric Co., are TTL, DTL, or CMOS compatible with both normal and inverted outputs available.

Type 7TRP300 has reels that hold up to 750 feet of standard, 1-inch wide, 8-channel tape having a maximum light transmission of 40 percent. Its solid-state LED light source is not subject to aging, Superior Electric states. Fanfold type TRP300F has trays for up to 200 feet of tape. Tape widths other than 8-channel are available as options.

Reader Service Number 280

Reader Service Number 276

Computer output microfilm (COM) slices $4338 out of this report, according to GE. A 1350 page report, plus 40 copies, costs $248 to print on a high-speed terminal, plus an additional $2480 for 10 copies on four-part paper. Additional costs included $1620 for the paper and $200 for distribution. GE states the same report was produced on six COM microfiche at a cost of $62 for production, $144 for 40 additional copies, and $4 for distribution.

COM Available from GE Information Services

Computer output microfilm (COM) is now available from General Electric's MARK III Information Services, bringing the advantages of microfilm to the remote batch data processing environment.

The company points out that COM can reduce a 200-page report to one vest-pocket-size microfiche, or a 2000-page report to only ten microfiche. It is useful for data processing jobs requiring the preparation of large reports (500 pages or more) with periodic updating and for reporting jobs requiring multiple copies, timely turnaround, and easy-to-reference material.

Both the fiche and roll film formats are available with the new GE service. Users can select either 24X or 42X reduction sizes. Retrieval techniques include fixed and variable fiche titles and indexes, "eyeball" characters on fiche and roll film, and image control and MIRA-CODE on roll film.
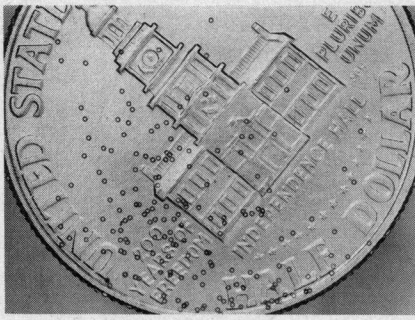
COM provides users of a remote batch data processing service with the inherent advantages of microfilm such as ease of handling, durability, and easy reversion to paper. The service also saves terminal connect time since off-line production capabilities are utilized. Applications suggested by the company for COM include inventory status reports, invoices, personnel inventory, price lists, product descriptions, schedules, and document control lists.

Reader Service Number 287

Ampex has introduced the first of a new family of 13-mil computer memory core for high speed industrial and military applications. The temperature-independent cores, pictured on the surface of a Bicentennial half dollar, can withstand high disturb ratios with a 75°C temperature range without compensation of the drive current, Ampex says.

Beckman's new series of multiplying digital-to-analog converters are available in ceramic or metal packages for both industrial and military applications.

13-Bit Multiplying D/A Converter for T²L Applications

Beckman series 877-69 multiplying digital-to-analog converters are primarily designed for T²L, low-power, four-quadrant, multiplying DAC applications in aircraft flight controls, automatic test instrumentation, graphic display drives, and computational circuits.

Features include 13-bit resolution, external AC or DC reference for full four-quadrant operation, AC reference frequencies from DC to 10KHz, MSB inversion input for "two's" complement or offset binary arithmetic options, an internal precision thin film resistor chip to assure high accuracy, and two package options for both military and industrial applications.

The 30-pin, dual in-line metal or ceramic packaged devices are available in two accuracy (linearity and gain) code models.

Typical accuracy of Model 877-69M-D1 (metal package) is ±.012% at 25°C guaranteed to ±.025% over a −55°C to +125°C temperature range, or ±.05% at 25°C guaranteed to .1% for Model 877-69M-D2.

Typical accuracy of Model 877-69C-C1 (ceramic package) is ±.012% at 25°C guaranteed to ±.025% over a −25°C to +85°C temperature range, or ±.05% at 25°C guaranteed to ±.1% for Model 877-69C-D2.

Typical power dissipation of all models is 400 milliwatts. Per/unit price in 100

quantities is $200 for 877-69M-D1; $152 for 877-69M-D2; $128 for 877-69C-D1; and $100 for 877-69C-D2. Delivery is from factory stock.

Reader Service Number 278

Temperature-Independent Cores Introduced by Ampex

Ampex Corporation has announced the first of a new family of 13-mil temperature-independent Unibit computer memory cores.

The 1370 core is a high drive, wide temperature core which will withstand high disturb ratios, according to Ampex. Designed for high speed industrial and military applications, typical operating parameters are drive current of 780 ma, disturbed one output (dV_1) of 34 mv, disturbed ZERO output (dV_z) of 4.5 mv, switching time (t_s) of 125 nanoseconds, and peaking time (t_p) of 65 nanoseconds.

Performance is uniform over any 75°C temperature range without compensation of the drive current, the firm states. With drive current compensation of only 0.4 ma/0°C, the performance is uniform over a temperature range of −55 to +110°C.
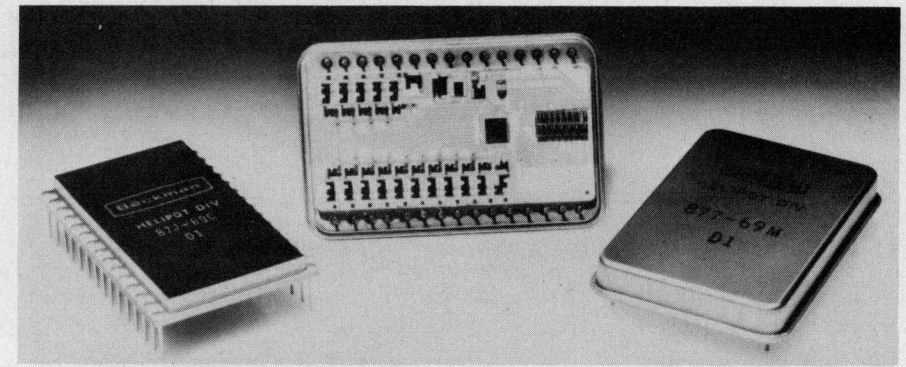
Ampex 1370 temperature independent Unibit cores are priced in the range of 50¢/1000 depending upon quantity and are available for immediate delivery.

Reader Service Number 291

Production FORTRAN Available from GE

General Electric Information Services has introduced Production FORTRAN (PFN), a new production-oriented language, for Mark III Service users.

PFN provides computer output identical to that generated by FORTRAN IV, minus nonessential features for production-type programs such as line number references in error messages, warning messages, and subscript checks. The new production language employs the same syntax as FIV.
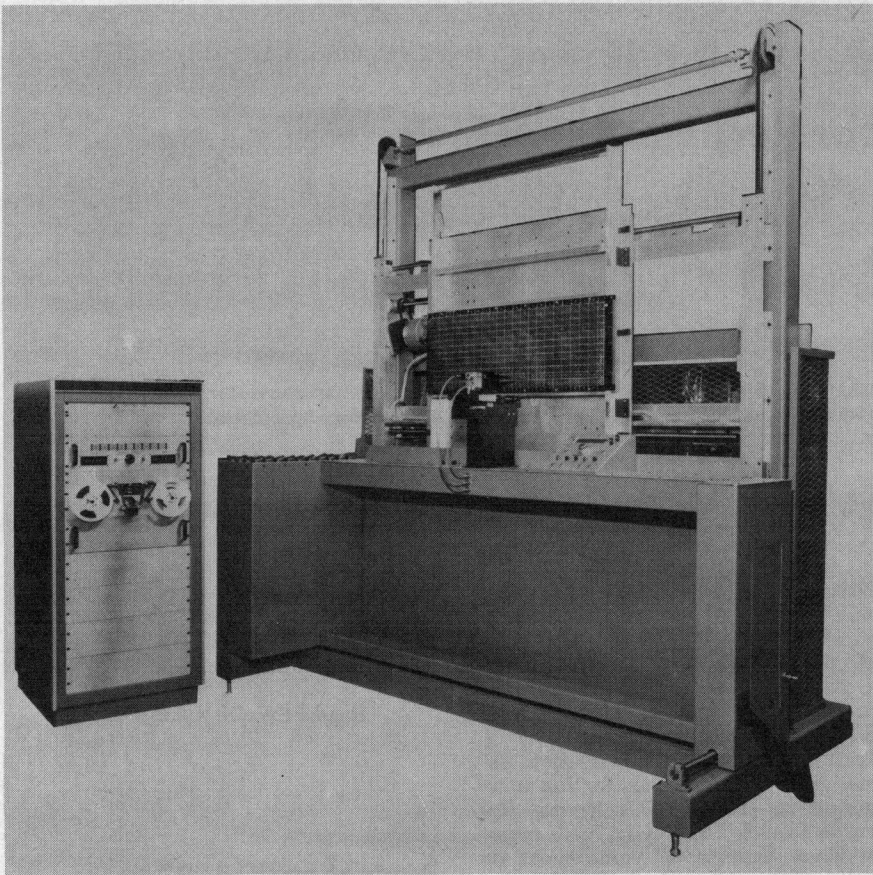
Since FIV is upward compatible with PFN, PFN may be used on proven, stabilized production-type programs currently running in FIV core image or object code. According to GE, PFN can eliminate the unneeded features and reduce processing time, thereby reducing costs. And, the conversion is a simple process.

For FIV programs in the ASCII mode, the Mark III system automatically compiles, loads, and executes a program upon the RUN command. For programs in object code, the RUN command causes the system to load and execute. On the other hand, programs stored in core image avoid the compilation and loading steps and advance directly to execution.

Saved object code and core image are frequently used in production applications, and it is in these areas that GE expects the greatest economic benefits of PFN. Savings of up to 15 percent may be realized for object code and up to 30 percent for core image, the company claims.

Reader Service Number 284

30 M-Byte Disk and Controller Combination Sells for $9995

A ten-platter, moving-head disk system adds storage capacity to Data General Nova and Eclipse, Digital computer controllers D-116, and Keronix IDS-16 minicomputers. Designated the 4091-N by Datum, Inc., the disk drive and controller sells for $9995 in unit quantities with quantity discounts available.

The unit has a storage capacity of 30 x 10^6 bytes with a recording density of 2200 bpi. Average random access time is 55ms; data is recorded on 20 surfaces at 100 tracks per inch, 203 tracks per surface. Transfer data rate is 312K bytes

per second; write frequency is 5 mHz ±0.3%. Storage media are IBM 2316-type disk packs which rotate at 2400 rpm.

The single-circuit board controller is a fully embedded element in the host CPU and requires no external interface units. It cables directly with up to four disk drives. According to Datum, the system is fully compatible with Data General software, complete with diagnostic and reliability programs.

Reader Service Number 283

Vertical wiring system accommodates panels up to 36" x 48".

New Chromatograph Data Systems Announced

Electronic Associates, Inc. has announced three additions to its "LabPACE" line of computer-based laboratory automation systems. Largest of the three, the LP-1000, is designed to meet the full data processing requirements of the quality control, methods development, and research chemist, according to the manufacturer. Programmed primarily in FORTRAN, the system performs all chromatographic computation routines after completion of each run, processing disk-stored digitized point-by-point data after completion of each analytical run. Raw data may be saved for calculations under as many analytical methods as desired. These methods can be edited on-line to adjust peak identification, area allocation, response factor, and other computational parameters as necessary, eliminating any need for sample reruns. User-written programs may be run in the background at the same time as the chromatography task is proceeding the foreground.

The basic LP-1000 system is equipped with 16 input channels (expandable to 64), a solid-state multiplexing system and analog/digital converter, EAI PACER 100 digital computer with 40K words of 16-bit memory, 2.2 million word disk bulk memory unit (expandable to 8.8 million words), and two input/output units—one for foreground GC tasks, one for background computation work. A variety of terminals and peripherals are standard for the system.

The other two new systems are sized for smaller applications. The LP-25 is designed for use with up to eight chromatographs, the LP-50 for up to 16 chromatographs. Both are mounted in a single console containing digital computer, multiplexer, a/d converter, and I/O teleprinter. LP-50 features a remote operator's terminal.

Reader Service Number 292

Automated Vertical Wiring System Wraps Twisted Pairs

The Automated Equipment Division of Synergistic Products, Inc. has announced a large vertical, automated wiring system for applying wire-wrap interconnections to circuit panels, including simultaneous twisted pair or coaxial pair wrapping. The system has a wiring area that will accommodate panels up to 36" x 48".

The system is numerically controlled by the SPI 1800 Computrol, with absolute positioning. A punched paper tape program for each circuit panel automatically positions the vertical work table in both the X and Y axis to each pin position for wiring. A stationary wire-wrap tool, at the center of the wiring system, permits the operator to work at a fixed position while the machine positions the panel in both X and Y axis. The wire-wrap tool may be equipped with a single wrapping bit for interconnecting single wires or with a dual bit for wrapping both wires at one end of a twisted pair or coaxial pair simultaneously. Using this technique, twisted-pair throughput is increased 100% over single-wire wrap methods, SPI claims. This dual-wrap system is available for all standard wire gauges and pin spacings down to 30 gauge wire and .100" centers.

The wire-wrapping bits themselves are the SPI tear-drop design. These bits permit both wires to be loaded into a large tear-drop shaped hole in the side

of each bit. An adjustable, positive stop assures uniform wrap lengths. The outer sleeve of the bit is stationary so that only the inner portion of the bit rotates during the wrap cycle, eliminating the posibility of damaging adjacent wires.

Reader Service Number 288

Intel Introduces Single-Board Display Memory System

A CRT display memory that stores an entire video image on a single board built with 4K RAMs has been introduced by Intel Memory Systems.

The Intel in-477 CRT display memory is built with 4096-bit random-access memory circuits, rather than 1024-bit shift registers. The new design is almost four times as compact as conventional display memories and can operate at high speed in a variety of modes, according to Intel.

The memory locations can be accessed both randomly and sequentially and at data rates up to almost 20 million bits per second, allowing the in-477 to be used in special image processing applications and to refresh CRT displays of virtually any size and image format.

Each in-477 board stores 256 kilobits of data in 64 n-channel silicon gate MOS

4K RAMs. This capacity allows one board to operate a standard television display of 512 lines with 512 picture elements per line. It can also be used with many other types of displays.

To create multi-color and gray-scale displays, or to operate displays requiring greater storage capacities, boards can be used in parallel. Each in-477 card operates as a self-contained system. Expansion is simplified by a built-in card-select control.

In 100-up quantities, one in-477 costs $1725, or 0.6¢ per bit, with OEM quantity discounts available. The board is 15 inches square, operates on standard power supplies of +5, −5, and +12V, and is compatible with TTL. Maximum power dissipation is less than 25 watts.

Reader Service Number 277

Digital Announces New Floating Point Processor for PDP-11/70

Digital Equipment Corporation has announced a new floating-point processor for the PDP-11/70 computer. Typical run times for the new FP11-C processor average between two and three times the speed of the previous unit, according to DEC.

The processor provides up to 17 decimal digits of accuracy and has 46 hardwired instructions and six 64-bit accumulators. It has been designed to perform more operations in parallel with the PDP-11/70 central processor to increase the total computer system's throughput rate.

According to DEC, the FP11-C complements the speed of the central processor and the high bandwidth I/O channels for maximum system throughput. Since the floating-point processor is a separate processor, it can operate in parallel with the CPU. During the actual computation time involved in a floating-point operation, the central processor can proceed to execute non-floating-point instructions. This overlap, DEC claims, gives the PDP-11/70 even faster effective computation speeds than would be apparent by an examination of execution speeds.

First shipments of the FP11-C, priced at $5900, began in December 1975.

Reader Service Number 279

NCR's new visual display terminal features multiple transmission speeds and three operating modes—conversational, page, or message.

Visual Display Terminal Announced by NCR

NCR Corporation has announced a new visual display terminal featuring upper and lower-case characters, multiple transmission speeds, and the ability to insert or delete lines of information.

The new NCR 796-401 block/conversational CRT terminal supplements the firm's current line of three 796 Series visual display terminals.

Through a selection switch, the terminal can operate at 110, 300, 1200, 2400 and 9600 baud rates. A total of 1920 characters, in 24 lines with 80 characters per line, can be displayed on the terminal's 12-inch screen.

With three operating modes—conversational, page, or message—transmissions from the terminal take place a character, line, or full screen at a time. When in the conversational mode, the terminal tranmits in either half or full duplex. Transmission is in the asynchronous mode.

Printers, which provide hard copy of the information on the screen, can also be attached to the basic terminal.

The terminal's purchase price is $3100. It has a monthly rental of $130. It is available for immediate customer delivery.

Reader Service Number 281

Solid-State Module Cuts Cost of LED Digital Clocks

Manufacturers of digital electronic alarm clocks and clock radios can use a new all-solid-state clock movement to cut the cost of the electronic clock section, according to National Semiconductor Corporation.

The new clock module subsystem, which comes complete with timing circuitry and 4-digit LED display, will permit manufacturers to retail an electronic alarm clock for $19.95, the Santa Clara firm claims.

The new clock module, MA1001, is constructed on a 1¾ by 3-inch printed circuit board. It contains a large-scale MOS integrated clock circuit, an LED display of four ½-inch high digits, a power supply, and a number of passive components. According to National, users only need to add a transformer and switches to construct a pre-tested digital clock, without buying components and making their own modules.

The module was designed to function with as few components as possible, National states. The P-channel MOS integrated clock circuit, the MM5385N, eliminates the need for separate bipolar segment-driver and digit-driver circuits. It also does away with more than 30 resistors, as well as the capacitors needed

to filter out the radio-frequency interference generated by multiplexed LED displays.

The clock IC eliminates the need to multiplex the display because it drives the LED segments and digits directly. This suppresses most of the RFI. The rest is eliminated by the use of slow transition time in the output stages—100 microseconds rather than the usual one microsecond.

The time-keeping frequency source for the module can be either 50 or 60 Hz. Display formats of either 12 or 24 hours may be chosen. The time is set through the use of "fast" and "slow" scanning controls.

Other features include alarm "on" and "PM" indicators, blinking colon, "sleep" and "snooze" timers, and variable brightness control capability. Alarm clock options include a transistor oscillator circuit for use with a low-cost earphone audio transducer. Power failure is indicated' by continued flashing of the display at a rate of 1 Hz.

Large quantities are immediately available from the factory. When the modules are purchased in lots of 100, the price is $10 each.

Reader Service Number 275
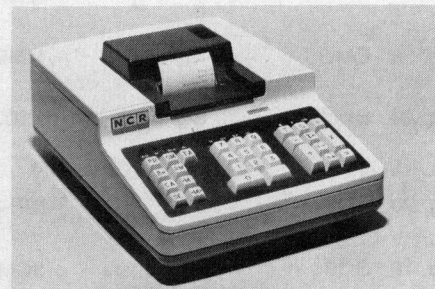
Features of the new NCR 18-0104 printing calculator include a direct-access memory, selective and grand totals, item count, and first-factor accumulation. The 12-digit-capacity, four-function calculator is priced at $419 and is available for immediate delivery. **Reader Service Number 286**