equipment catalog

Datapoint

Datapoint Equipment Directory Index

Datapoint 2200 ®

the business mini-computer

Versions I and II

The Datapoint 2200. Version I is an integrated data system which offers alphanumeric keyboard for data entry, a cathode ray screen for data display and two digital cassette recorders for bulk data storage. The system also integrates a general purpose digital computer for both system control and data processing tasks along with the capability for extensive communications interfacing and for interfacing with external devices or peripherals. Version I of the Datapoint 2200 contains a maximum of 8,196 words of recirculating MOS memory. This integrated system. computer. memory, and peripherals. has gained wide acceptance in a variety of data processing and communication applications.

Version II of the Datapoint 2200 maintains the original concept but incorporates numerous improvements and additions to augment its processing power. It appears physically identical to Version I and retains all the advantages of the earlier Datapoint. In fact, in keeping with the concept of upward compatibility. programs generated for the Version I Datapoint will run substantially faster on Version II Datapoint. Memory size of Version II is a maximum of 16,384 words of 8 bit memory.

Version II provides the programmer the added advantage of interrupt capability. This hardware interrupt feature enables the programmer to service peripherals requiring attention without the necessity of periodic addressing and status checking in his main program. Other improvements include: an additional set of 7 registers and 4 control flip-flops (alpha and beta modes), program access to the stack through the new Push and Pop instructions. These changes have all been incorporated into the 2200 Version II without the need to modify or convert user software written for the Version I 2200, except for delay loops.

The availability of two terminals allows the user to match the power of the internal processor and memory to the application. Tasks requiring substantial logical operations and computing will lend themselves to a Version II machine while operations involving light computing duty or non-critical speed requirements will find the Version I provides a powerful, yet economical alternative.

Both versions are physically identical in appearance and the operator need not be re-trained for operation on both types.

Version I machines may be converted to Version II if the need arises.

GENERAL SPECIFICATIONS

The Datapoint 2200 has the following general characteristics:
  a. 115 v.a.c., 60 cycle. 180 watts, power input (50 cycle optional);
  b. 47 pounds weight;
  c. $9^5/_8$" high, $18^1/_2$" wide, by $19^5/_8$" deep outside dimensions;
  d. 0 to 50 C (32 to 122 F), 10 to 90 percent relative humidity operation environment.

CRT DISPLAY

The Datapoint 2200 CRT Display provides the following features:
  a. 7" x $3^1/_2$" viewing area;
  b. 960 characters;
  c. 80 character by 12 line format;
  d. 4/32" x 3/32" character size;
  e. Entire 94 character ASCII set;
  f. 60 frames per second refresh rate (50 frames per second when using 50 cycle power);
  g. 5 x 7 matrix character generation;
  h. 5 x 7 solid. blinking cursor, alternates with character. nondestructive;
  i. P31 green phosphor;
  j. Single control line erasure, frame erasure, and page roll-up: and
  k. Direct control of all CRT functions by the 2200 processor, providing tab, editing, form control. etc.

KEYBOARD

The integral keyboard provides a basic 41 key alphanumeric key group, an 11 key numeric group and five system control keys. The keyboard provides a unique multi-key (n-key) roll-over characteristic providing maximum ease of typing. Transfer of characters from the keyboard is under control of the 2200 processor. An audible click providing an acoustical feedback to the typist is available under processor control. A programmable audio "beep" is also provided when it is desired to gain a typist's attention.

PROCESSOR

The integral processor provides all control functions and includes:
  a. 50 different instruction types;
  b. 14 addressable registers;
  c. 16 deep pushdown stack;
  d. 8 bit memory word length;
  e. Up to 16,384 word memory;
  f. Complete parallel I/O system;
  g. Automatic power-up restart.

CASSETTE TAPE DECKS

Two read-write tape decks are provided for program and data storage. The deck accepts Norelco (Phillips)-type cassettes and provides:
  a. 47 characters per inch density;

b. Forward-reverse operation;

c. Processor controlled data transfer, direction control, and high-speed rewind.

MEMORY

The basic Version II Datapoint 2200 is supplied with 4,096 eight-bit words of memory. Additional modules of 4,096 words each may be incorporated with the maximum memory capacity of the processor being 16,384 words.

The Datapoint 2200 Version II memory is a random access MOS memory with an access time of 3.2 microseconds. Each memory cycle takes 1.6 microseconds and each instruction takes 2, 3 or 4 cycles to complete. Due to the random access nature of the memory, the time required to read or write to the memory is the same regardless of the address.

The Version I memory also has 8-bit words (byte) but is somewhat slower than the Version II. Instruction execution times run from 8 to 16 microseconds. Sequential memory accesses take only 8 microseconds.

Version I also uses MOS-type memory although the technique is different. The use of this serial/parallel memory allows some savings to the user in cost.

PUSHDOWN STACK

A unique feature of the Datapoint 2200 is the incorporation into the processor's structure of a "pushdown stack." This is useful for subroutine calling, as it saves the last used address while doing a memory reference to a different address, calculating an address and then jumping to it without having to overstore a JUMP instruction, making an abortive exit from a subroutine (returning control to a location other than the one after the CALL instruction), and saving the state of the machine if there is at least one free stack location.

INTERRUPTS

Included in the Datapoint 2200 processor is a hardware interrupt feature. The interrupt signal occurs at a one millisecond rate. This one millisecond rate is accurate to within ±0.05%.

Datapoint 2200/Communications Adaptors

ASYNCHRONOUS

Internal data transfers in the Datapoint 2200 are in parallel form. Communications and many peripheral devices used in today's data processing operations require a serial start-stop data structure. The Asynchronous Communications adaptor provides this asynchronous serial data format and opens the Datapoint to many versatile applications.

The adaptors connect directly to the Datapoint 2200 and are completely under program control. No manual adjustments are present. Both data rate and character length can be program specified. Start and stop pulses are automatically added and subtracted from the transmitted or received data.

With the 2200-400 unit (no internal modem installed), a Bell Dataphone can be connected through a standard EIA cable which is supplied. The adaptors can also be connected to a wide variety of other devices which operate on asynchronous, start-stop data such as teleprinters, modems, and serial input printers.

For complete telephone communications capability, two other versions are available with Datapoint manufactured, Bell-compatible, 103 and 202 type modems. These digitally synthesized modems are located in the same box with the adaptor and allow the user to dial and answer on the standard telephone network without a handset present. All these operate under program control providing complete unattended calling and answering operations. Multidrop and polling operations can also be configured using this standard hardware.

If your system involves telegraph-line operations, a model is available to handle neutral or polar high-level telegraph keying.

SYNCHRONOUS

A Synchronous communications format provides the Datapoint 2200 user with a highly efficient means of information transmission.

Start or stop bits are not used in synchronous transmission, therefore creating a higher data through-put than the asynchronous format. In effect, all of the data transmitted is useful information except for the control characters, which serve to direct the data flow between devices.

The synchronous adaptor connects directly to the Datapoint 2200 with no other hardware required. The output attaches through a supplied cable to a Bell 201 Dataphone or other modem capable of handling synchronous data.

General Specifications
ASYNCHRONOUS ADAPTORS

Data Rate
37.5 to 9600 baud, programmable

Data Length
7-11 bit code, including start and stop programmable pulses

Interface
Connects directly to Datapoint 2200 I/O bus

Codes
Any asynchronous

Data Format
Serial asynchronous, start-stop

Physical Specifications
(all communications adaptors)

Power
The Datapoint 2200 will supply power for up to two adaptors. More require auxiliary power supply.

Mounting
Wall, console, or stand-alone.

Dimensions
10.5 W x 15.5 H x 2.7 D (inches)

MODEL CODE 2200-400
Serial Data Adaptor

Signal
RS232C level signal, full or half duplex

Rate
37.5 to 9600 baud, programmable

Connection
Teleprinters, Bell Dataphone®, other serial devices

MODEL CODE 2200-401
300 Baud Modem

Signal
Equivalent to Bell 103 Dataphone®

Rate
300 Baud (450-Baud max), full duplex

Operations
Auto-dial, autoanswer, direct connection

Connection
Bell 1001 B Direct Access Arrangement or private wire

MODEL CODE 2200-402
1200 Baud Modem

Signal
Equivalent to Bell 202 Dataphone®

Rate
1200 Baud (1800 Baud max.), half duplex (full duplex using reverse channel for data)

Operations
Auto-dial, auto answer, connect

Connection
Bell 1001 B Direct Access Arrangement or private wire

MODEL CODE 2200-403
High Level Keyer

Signal
Neutral or polar, high level keyer

Operation
Telegraph current loop keying

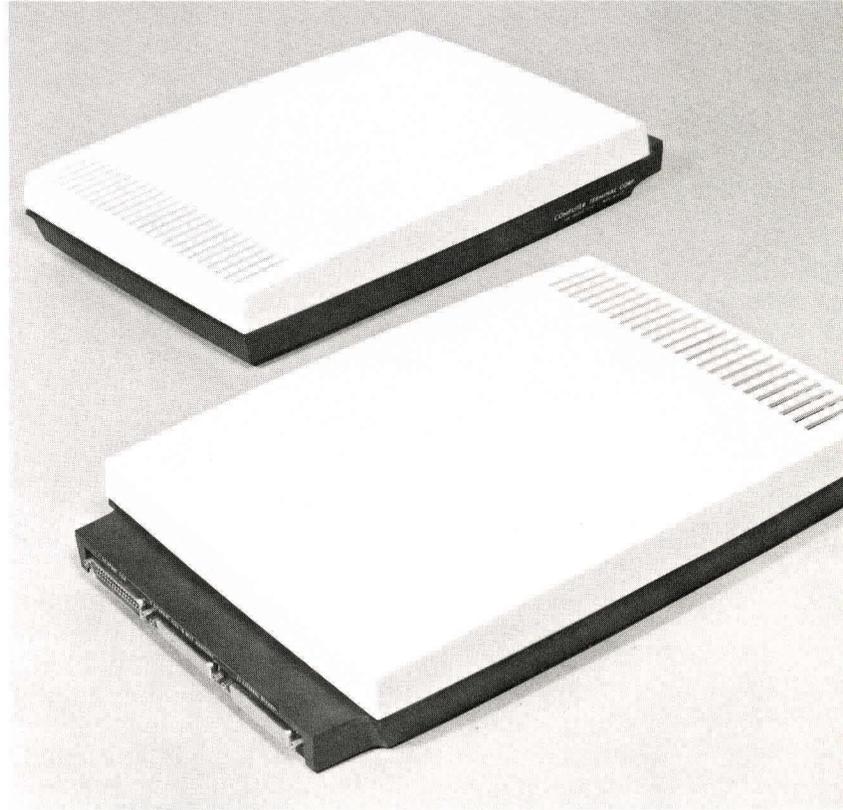**Connection**
Direct to telegraph line

The adaptor contains powerful hardware error-checking capabilities. Several formats are used with the ASCII and EBCDIC codes and the adaptor handles these within its own hardware. Polynomial, vertical redundancy (VRC), and longitudinal redundancy checking (LRCC) can all be accomplished by hardware.

For users with IBM Binary-synchronous hardware, the adaptor will also handle this discipline.

PARALLEL INTERFACE

Many useful data communication devices and associated peripheral equipment maintain communication linkage through parallel data transmission. Parallel transmission techniques enable these devices to transmit one word (byte) of information at a time as opposed to serial transmission techniques. In parallel communication, transmitted information is presented on a group of parallel communication wires, each wire corresponding to a single bit of the transmitted word.

The Datapoint 2200/Parallel Interface is designed to provide the most efficient and flexible parallel communication capability to the Datapoint 2200. Users with applications involving interface to various types of peripheral equipment or electronic instrumentation will find the Parallel Interface useful for this purpose.

MODEL CODE 2200-404
Synchronous Data Adaptor

Data Format
Synchronous

Data Rate
Rate determined by modem used.

Codes
ASCII or EBCDIC (must be specified)

Interface
Connects directly to Datapoint 2200 via I/O BUS

Connection
Bell 201 series Dataphone® or other modem.

Operations
Polynomial error check, VRC, LRCC

MODEL CODE 2200-420
Parallel Interface

Data Input
8-wire Parallel Data
8-wire Parallel Status

Data Output
8-wire Parallel Data
8-wire Parallel Command Word
System Reset Strobe
Status Input Strobe
Data Input Strobe
External Command Strobe 1
External Command Strobe 2
External Command Strobe 3
External Command Strobe 4
Device Addressed Level

Data Output Levels
All data levels can be either 0 and +5 volts or 0 and +12 volts by internal jumper.

Special Features
Status input circuitry can be altered to permit latching of individual status bits. Pulse status conditions can be easily detected in this mode. The latching status mode is enabled by inserting a jumper on the parallel interface circuit card for each desired latching bit. When the latching mode is used, the execution of INPUT, following the execution of EX STATUS, will clear the status latches if the interface is addressed.

Physical Description

The 2200-420 consists of one printed-circuit card mounted in the standard communications adaptor housing. The 2200-420 circuitry consists mainly of TTL MSI logic.

The three connectors on the housing have the following functions:
  J1 Datapoint 2200 I/O BUS interface, containing parallel inputs and outputs, command strobes and power to the 2200-420 (male connector).
  J2 A duplicate of J1 (female connector).
  J3 Parallel interface containing all signal lines for operation with external devices.

A Datapoint 2200 will provide power for up to two 2200-420 parallel interfaces. If additional interfaces are required, auxiliary power must be supplied.

Mounting
Wall, console, or stand-alone

Datapoint 2200/Multiple Port Communications Adaptor

Many digital data communications systems and data processing devices utilize a start-stop asynchronous mode of communication. The Multiple Port Communications Adaptor (2200-460) can be used to interface the Datapoint 2200 with this serial form of communication. The 2200-460 has eight ports so that up to eight serial asynchronous channels can be interfaced to the Datapoint 2200 with a single external I/O device. The Multiple Port Adaptor converts the parallel I/O Bus data of the Datapoint 2200 into a serial form complete with start and stop bits. The serial output and input signal levels conform to the Electrical Industries Association RS-232-C specifications.

The 2200-460 is assigned a unique address and attached directly to the Datapoint 2200 I/O Bus. The character length and number of stop bits are selected for each port independently via program control. The selected number of start and stop bits are then automatically added and subtracted when data is transmitted and received.
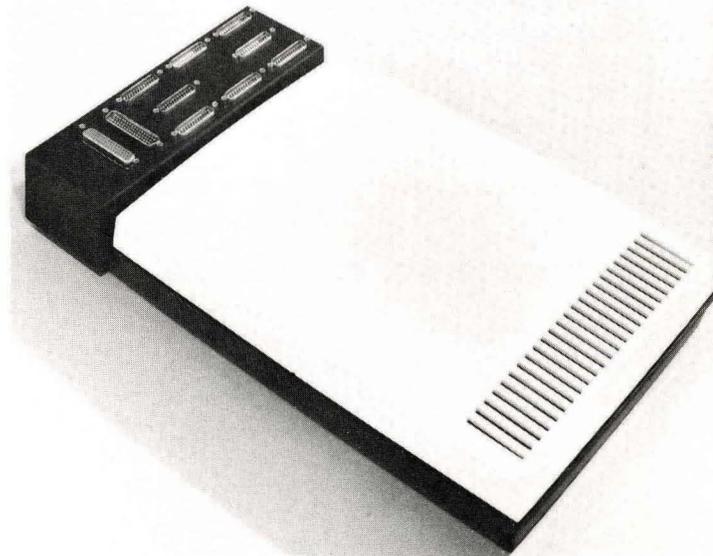
Specifications

Data Rate
Standard baud rates are 110, 300 and 1200 baud, selected by wire jumpers on printed circuit cards.

Data Length
7-11 bit code, including start and stop programmable pulses

Interface
Connects directly to Datapoint 2200 I/O Bus

Codes
Any asynchronous

Data Format
Serial asynchronous, start stop

Output Signal
RS-232-C compatible, full or half duplex

Connection
Serial asynchronous devices such as Bell Dataphone, Teletype, Printer, Terminal, etc.

Mounting
Wall, console, or stand-alone

Dimensions
10.5W x 18.0H x 2.7D (inches)

Power
The 2200-460 derives its power from the 2200 I/O Bus. A total of two 2200-460's can be powered from the I/O Bus with additional Multiple Port Adaptors requiring auxiliary power supplies.

Datapoint 2200/Servo Printer

The Servo Printer contains a variety of highly desirable data processing features not usually found in one printer. The heart of the printer is a servo-driven, rosette shaped, type wheel made of flexible plastic. This type wheel is positioned according to the character desired and struck by a small electric hammer against a cloth or carbon ribbon.

This straightforward construction results in a heavy-duty printer that runs much quieter than a standard office typewriter and has few moving parts. Print quality equals or surpasses most standard typewriters and the type wheels can be easily changed to accommodate a variety of upper and lower case fonts.

Print speed is 30 characters/second although the printer's production rate can be much higher than conventional 30 cps printers due to an ability to shuttle or "slew" across blank areas. The 30 cps rate applies to solid text as the print mechanism can move at 30 inches per second over blank areas. Using this print and slew technique, the Servo Printer can match conventional printers with higher print speed ratings. Either friction or sprocket feed can be used.

Most data processing printers can only move one character space to the right or left. The Servo Printer can space as little as 1/60 inch per space giving the user an ability to justify text by inserting fractions of character spaces at appropriate intervals. The printer may also be instructed to feed paper forward or reverse. Users

requiring a dot-plotting graphic function will find this feature useful.

While the rugged, simple construction of the Servo Printer allows constant use in standard data processing work, the exceptional print quality will permit the user to apply this device to tasks usually requiring a typewriter style printer such as text-processing and letter-typing.

The Servo Printer plugs directly into the Datapoint 2200 with no additional equipment required. Multiple printers may be used.

Functional Characteristics

Printing Speed
30 CPS (asynchronous)

Carriage Slew Rate
30 inches per second

Paper Skipping Rate
24 LPS

Print Positions Per Line
132 (when using 10 characters per inch)

Printable Characters 96
Three printwheels
available:
Courier 72
Pica
Elite

Horizontal Increment
60 per inch

Vertical Increment
48 per inch

Printing Method
Impact, Rotating Printwheel

Forms
Capable of handling tractor feed forms (max 14.875") or ordinary typewriter paper.

Interconnection
Direct connection to Datapoint 2200 I/O bus

Operator Controls
Line Feed Key
Form Feed Key
Platen Knob for forms adjustment
Forms Thickness adjustment

Physical Characteristics

Dimensions

	2200-250	2200-251
Width:	53 inches	36 inches
Height:	37 inches	35 inches
Depth:	37 inches	37 inches
Weight:	215 lbs.	195 lbs.

Power Requirements

110 v.a.c., 60 Cycle, 150 watts
220 v.a.c., 50 Cycle, 150 watts

Model Codes
2200-250 Printer/Desk Console
2200-251 Printer/Free-standing Console
2200-203 230 v.a.c., 50 hz option (factory installed only)
2200-803 Shelf attachment
2200-260 Cloth Ribbon
2200-261 Carbon Ribbon
2200-270 Courier 72 Printwheel
2200-271 Pica Printwheel
2200-272 Elite Printwheel

Datapoint 2200/Tape Drives

7- and 9-Channel

The Datapoint 2200 tape systems offer the 2200 user a complete line to suit his tape storage requirements. Two models are available—9 channel, 800 bpi, and 7 channel, 800 or 556 bpi. Either of these fully industry-compatible tapes can be console mounted with the 2200 or free-standing in a separate cabinet. In either case, the units connect directly to the Datapoint 2200 with no interfacing or other adaptors required.

The tape control unit is included in the cabinet and automatically generates vertical parity (VP), a cyclic redundancy check character (CRCC), and a longitudinal redundancy check character (LRCC). Upon reading the tape, the VP, CRCC, and LRCC are automatically regenerated and checked. A 1,057 byte buffer provides intermediate storage of characters, permitting asynchronous data transfer to and from the deck. Records can be written up to a length of 1,057 words.
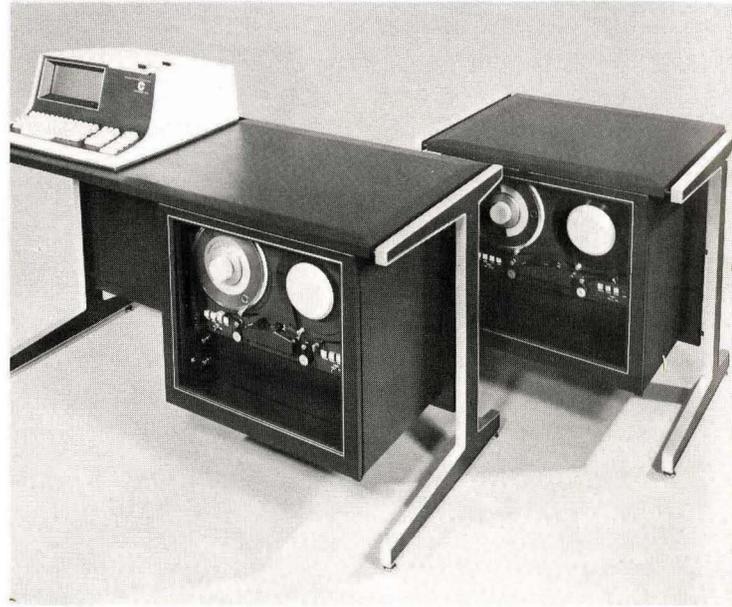
Functional Characteristics

Recording Format (Industry-Compatible)

2200-300, -301	2200-302, -303
9-track, NRZI	7-track, NRZI
800 BPI	556/800 BPI

Tape Speed
12.5 inches per second

Reel Capacity
8-1/2, 7 inch or mini reels of
1/2 inch tape

Maximum Record Length
1057 bytes

Error Control
Industry compatible
Fully automatic VP, LRCC, CRCC
Read-after-write

Interconnection
Direct connection to Datapoint 2200
I/O bus

Physical Characteristics

Dimensions

	2200-300, -302	2200-301, -303
Width:	52.5 Inches	29.4 Inches
Height:	36.5 Inches	36.5 Inches
Depth:	22.7 Inches	22.7 Inches
Weight:	290 lbs.	280 lbs.

Power Requirements
115 v.a.c., 60 Hz, 275 watts
(not including 2200)

Model Codes
2200-300 9-track, Desk Console
2200-301 9-track, Free-standing Console
2200-302 7-track, Desk Console
2200-303 7-track, Free-standing Console
2200-304 Tape cleaning kit
2200-305 220 v.a.c., 50 Hz
        (factory installed only)

Datapoint 2200/Disk System

A Datapoint 2200/Disk provides the user with a random-access, non-volatile, mass memory system. The disk is a removable cartridge-type with each cartridge containing over 2.4 million bytes (8 bits) of data.

The disk cartridges are fully enclosed and easily inserted and removed from the drive. By use of the replaceable disk, an almost unlimited number of programs and data files may be kept on hand and ready for immediate use. The operator need only to press the load button and the disk is automatically brought on-line.

The Datapoint 2200-350 Disk System can be expanded. Up to three 2200-354 disk drive extension units can be added making a total of four disks. The 2200-354 extender disks are identical in appearance to the 2200-350 controller and disk.

System programmers will find the disk controller offers many powerful features. The controller contains 1,024 character memory which is divided into four 256 character areas. This buffer or memory can be addressed randomly by the 2200 facilitating the updating or sorting of data within a sector. All error detection and appropriate control characters are done automatically by the controller.

The 2200/Disk connects directly to the Datapoint 2200 via a standard I/O cable. No other interface is required.

Functional Characteristics

Capacity
Surfaces	2
Tracks/Surface	203
Sectors/Track	24
Bytes/Sector	256
Bytes/Disk (8 bits)	2,494,464

Bit Density
2200 BPI

Track Density
100 TP I

Bit Transfer Rate
1562 KHz

Disk Timing
Rotation Speed 1500 rpm
Average Latency 70 MS
Track-to-Track 15 MS Max.

Operator Controls
Load/Run
Protect

Indicator Lamps
Load
Ready
Protect
Check

Physical Characteristics

Dimensions
	2200-350	2200-351
Width:	53.0 inches	36.0 inches
Height:	28.0 inches	28.0 inches
Depth:	24.0 inches	24.0 inches
Weight:	200 lbs.	175 lbs.

Power Requirements
115 v.a.c., 60 Hz, 1050 watts, (220 v.a.c., 50 Hz optional)

Model Codes
2200-350 Console mounted controller with one drive unit
2200-351 Freestanding controller with one drive unit
2200-352 Console controller with two drive units (one console mounted and one free-standing)
2200-353 Controller with two disk drive units (both disks in free-standing cabinets)
2200-354 Single disk drive extension unit, (free-standing)

Datapoint 2200/Card Reader

A medium speed optical card reader, the Datapoint 2200-500 is designed for continuous duty in a wide variety of applications. Standard 80-column cards may be read at demand rates of up to a nominal 400 or 600 cards per minute.

The 2200/Card Reader attaches directly to the I O Bus of the Datapoint 2200 through a buffered interface. Data is transmitted in two 8-bit bytes along with status information. The Card Reader can only be used with a Version II Datapoint 2200 because of the high character transfer rate.

The Card Reader is easily operated by inexperienced personnel and cards may be loaded and unloaded while the reader is operating. The optical reading mechanism is self-cleaning thus keeping maintenance to a minimum.

Operator controls along with status indicators are readily accessible from the front panel. The construction of the Card Reader not only offers a simplicity of operation but an unusual high tolerance of bent or damaged cards that would ordinarily jam other types of readers.

Specifications

Card Rate
Up to 400 or 600 cards per minute, nominal

Card Type
80 column cards conforming to ASA X3.11-1966. USAS X3.21-167 and EIA Standard 292. Black, blue and brown cards are excluded.

Capacity
Input hopper: 600 cards, output stacker 1000. Cards may be added or removed during operation.

Reading Mechanism
Fiber optics with solid state sensor.

Program Commands
Motor on
Motor off
Card Motion

Device Status
Hopper Empty
Device Ready
Read Ready
Card Motion

Operator Controls
Power switch
Start/Stop

Indicator Lamps
Hopper empty (or Feed Failure)
Stacker Full
Data error

Interconnection
Direct connection to 2200 I/O Bus
All necessary cables included.

Physical Characteristics

Dimensions
	2200-500 Card Reader
Width:	14.25 inches
Height:	19.0 inches
Depth:	18.0 inches
Weight:	52 lbs.

Power Requirements
115 v.a.c., 60 Hz. 300VA

Model Codes
2200-500 Card Reader
2200-502 220V, 50 Hz model

Datapoint 2200/Selectric Interface

For applications requiring a low-speed, typewriter quality printer, the Datapoint 2200-240 Selectric Interface provides a means to connect a Model 735 IBM Selectric typewriter to the Datapoint 2200. The typewriter is available from IBM Corporation.

This interface allows the printer to operate at its full rated speed of 14.8 characters. The interface does not allow the Selectric to be used as a keyboard data entry device. However, the Selectric may be used as a standard office typewriter when not under control of the Datapoint 2200.

No extra power supplies are required. The 2200-240 interface plugs directly into the I/O connector of the Datapoint 2200 and the Selectric connects to the interface via a furnished cable.

Functional Characteristics

Code
Correspondence Code

Connection
Through Interface Adaptor via supplied cables.

Selectric Typewriter Specifications
IBM Model 735 (130 char. line) or 731 (80 char. line)
Correspondence code wired
24 VDC coils
Reversed diode polarity
Courier type style (suggested)
Sandstone beige color (suggested)
115 v.a.c., 60 Hz motor (or as required)

Physical Characteristics

Dimensions
Height: 15.5 inches
Width: 10.5 inches
Depth: 2.7 inches

Mounting
Wall, Console, or Free-Standing of Interface Adaptor

Power Required
Power supplied by Datapoint 2200

Model Codes
2200-240 Selectric Interface Adaptor

Datapoint 2200/Shelf Attachment

The shelf attachment increases the table width of a Datapoint console by ten inches. The shelf is the same depth as the table (22-11/16"). This additional work space may be attached with the provided screws to *either* end of *any* Datapoint console or stand-alone.

Technical Description

Dimensions
Width: 10 inches
Depth: 22-11/16 inches
Material: Plywood and Steel
Color: 2200 Brown
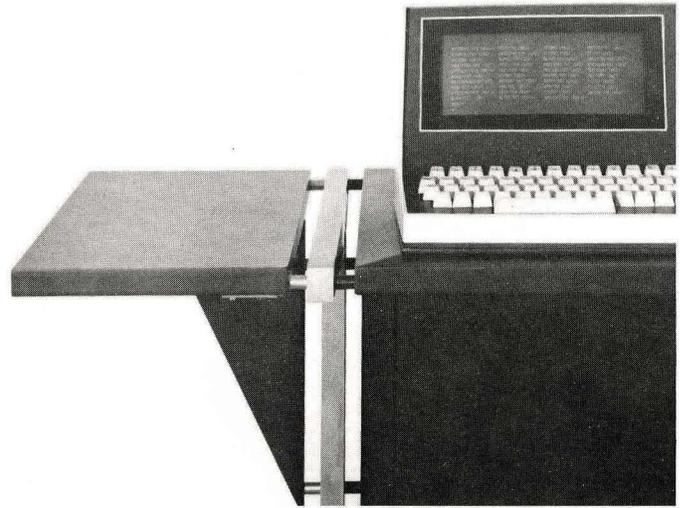
Datapoint 2200/Paper Holder

The 2200-165 Paper Holder is designed to fasten to the front of the 2200 above the screen. It is useful for system operators who are either keying in or verifying data from source materials. Easy to attach or remove, the Paper Holder adds a highly desirable convenience to system operation.
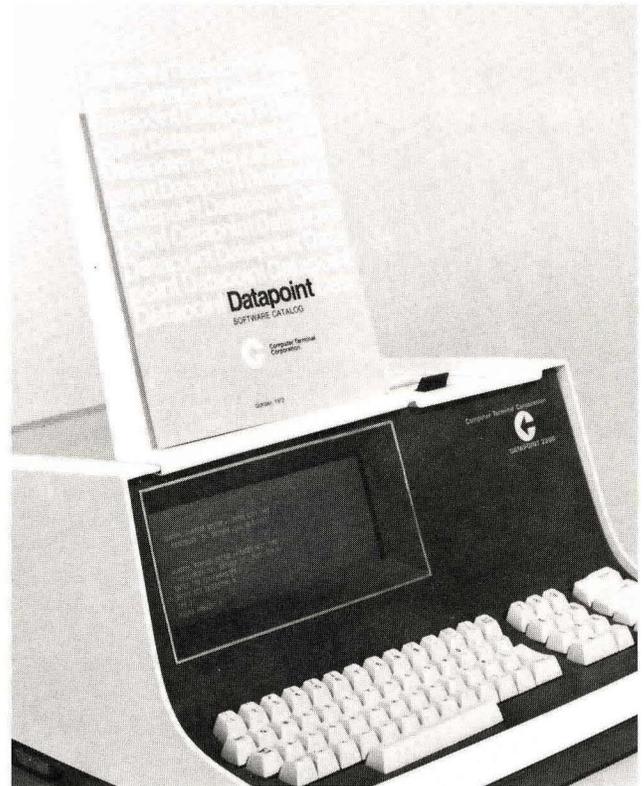
Datapoint 3300®/Interactive Terminal

The Datapoint 3300 is an interactive data terminal designed primarily for the computer time sharing user. Standard features of the 3300 include complete interchangeability with standard teletypewriter equipment, high-speed data transmission capabilities, a high capacity and flexible CRT display, easy to read characters, solid state construction throughout, modern styling, totally self contained and a 64-character set keyboard. Optional features include magnetic tape memory, hard copy printer and a ten-key numerical keyboard.

The 3300 is intended primarily for use by the remote computer user who utilizes "dialogue" with a computer to arrive at a solution to a problem. Typically, this "interactive" user is an engineer, scientist or similar professional whose work requires substantial and immediate assistance from a computer. The 3300 will permit this user to tap the power of the remote computer more effectively.

The Datapoint 3300 screen can accommodate 25 full lines with 72 characters in each line—a total of 1800 characters in a single display. The characters displayed on the CRT are easy to read because of the 60-CPS "refresh" rate and line synchronization, which keep characters totally stable and distinct. The interactive user, through the keyboard, can add, correct, revise or delete any line or character. The large screen makes it possible for him to comprehend, in full, many problems

in a single glance and where necessary to make modifications and revisions. Program debugging is greatly simplified. With the 3300, the remote computer becomes a much more flexible aid to human thought processes. Data transmission rates of up to 2400 bits per second are available on the Datapoint 3300.

Optionally available with the 3300 is a magnetic tape memory unit designed as a companion unit to the Datapoint 3300. This memory, which utilizes replaceable tape cassettes, offers the remote user the flexibility of both forward and reverse line-incremental playback of data up to a capacity of 200 full "frames" (25 lines of 72 characters each). This stored data is available to the 3300 operator upon demand.

Specifications

Screen size
Standard 12 inch rectangular tube

Character size
0.16 inches x 0.11 inches

Number of characters
1800

Characters per line
72

Number of lines
25

Refresh rate
60 CPS, line synchronized

Type of memory
MOS semiconductor

Power
115 v.a.c., 60 Hz, 180 watts

Keyboard
Electronic, with Model 33 Teletype layout including additional controls and optional 10 key numerical entry n-key remover

Controls
Cursor:	up, down, left, right, home up, home down
Erase:	to end of line, to end of frame
Frame roll:	up, down
Power:	on, off
Mode:	remote-local select
Transmission:	full duplex-half duplex select

Cursor
Flashing, remote or local control

Input/Output Data rate
110, 150, 220, 300, 440, 600, 880, 1200, 1760, 2400 BPS

Communication interface
RS 232B or current loop TTY (using 3300-110) ASCII 8-level start-stop code

Dimensions
Width: 18 inches
Height: 14 inches
Depth: 19 inches
Weight: 48 lbs.

Model Codes
3300-101 Interactive CRT Terminal
3300-102 Answerback option
          (factory-installed only)
3300-110 Telegraph Loop Keyer
3300-111 230 v.a.c., 50 Hz option
          (factory-installed only)
3300-112 Auto carriage-return/line-feed
          deletion kit
3300-113 Coded Cursor Key Kit
3300-114 Backspace Coding Kit
3300-115 Escape Key Coding Kit
3300-116 Space Over-write Latch Kit

Datapoint 3300/Tape Unit
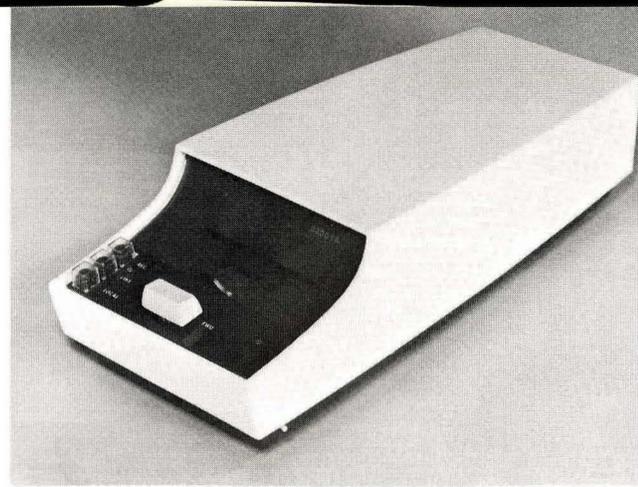
The Datapoint 3300 Magnetic Tape Unit is used in conjunction with the Datapoint 3300 CRT Terminal to provide a permanent record of all transactions. The Tape Unit consists of a cartridge magnetic tape transport with storage buffer and controls to provide:

On-line data storage

Off-line message preparation

High speed off-line message retrieval, forward and reverse

On-line transmission

Editing capability

The CRT and Tape Unit operate as a system in the following modes:

Record Mode—The Tape Unit storage buffer accepts data from the CRT Terminal keyboard and communications interface system. The data is accumulated in blocks and transferred to magnetic tape. The data blocks are formed coincident with displayed data lines on the CRT Terminal and may be fully edited before they are committed to tape.

Reproduce-Local Mode—The Tape Unit provides high speed—60 characters per second-recall of the stored data to the CRT display. The data is reproduced as a scroll and may be accessed in the forward or reverse directions. This mode does not interfere with the on-line status of the Terminal and allows the operator to review previous transactions that have progressed off the screen of the CRT.

Reproduce-Remote Mode—The Tape Unit is placed under the control of the communications interface system of the CRT Terminal. Data is reproduced in start-stop format at the speed setting of the interface. The "X-on", "X-off" controls may be applied to provide automatic computer access of a message prepared off-line. The data is also displayed on the CRT during transmission.

Specifications

Model Code
3300-300

Tape cassette
Phillips type

Storage capacity
450,000 characters per cassette

Input-Output data rate
Up to 2400 BPS (240 characters per second)

Interface
Operates in conjunction with Datapoint 3300 CRT Terminal

Controls
Record
Reproduce—Local (controlled by Datapoint 3300 ROLL control keys)
Reproduce—Remote

Power
25 watts (obtained from Datapoint 3300 CRT Terminal)

Size
7.5 inches wide, 18 inches long, 5 inches high (styled as companion unit to the Datapoint 3300 CRT Terminal)

Weight
12 pounds

Datapoint 3300/Data Coupler

To provide the Datapoint user with a simple, low-cost Bell System compatible method of accessing the telephone network, Datapoint Corporation offers the Datapoint 3300/Data Coupler. The Coupler is compatible with the Bell System 103-type Dataphones ® and operates in the originate mode.

The Data Coupler provides acoustical coupling to the telephone network through the handset of a Bell System 500-series telephone set, eliminating the need of any direct electrical connection. It operates at any data rate up to 300 bits per second in full or half duplex mode. A fully industry-compatible (Electronic Industries Association RS-232B) electrical interface for interconnection to Datapoint terminals is provided. An additional output is also provided for use with auxiliary teleprinters or other devices.

Functional Characteristics

Data Rate
Up to 300 bits per second

Modulation
Bell System 103 compatible, originate mode

Line Conditioning
Bell System DDD network lines
No special lines required

Transmission Mode
Full or half duplex

Line Interface
Acoustic coupling

Terminal Interface
EIA RS-232B

Auxiliary Interface
EIA RS-232B (Transmit only)

Operator Controls
Full/half duplex
Power on/off

Indicator
Carrier detection

Physical Characteristics

Dimensions
Width: 11.75 inches
Height: 4.5 inches
Depth: 11.2 inches
Weight: 4 pounds

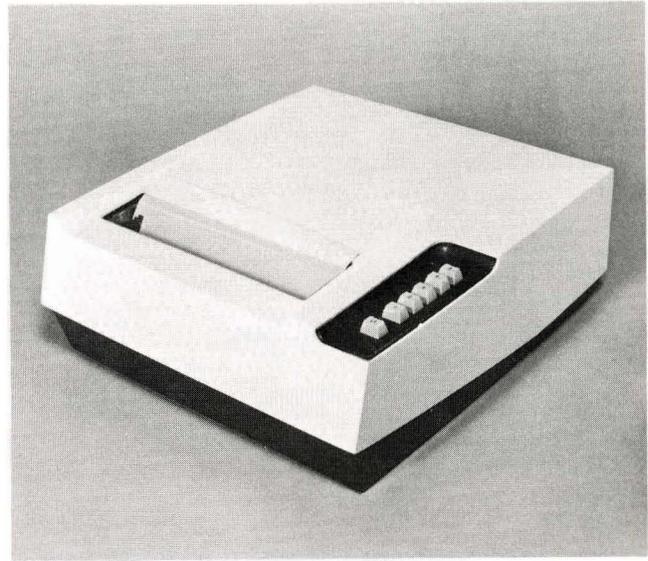## Power Requirements
115 v.a.c. 60 Hz, 12 watts

Model Code
3300-400

Datapoint 3300/Thermal Printer

The Datapoint Thermal Printer unit is a lightweight, compact, economical device designed to be used with the Datapoint 3300 or Datapoint 2200 (through a communications adaptor). The printer unit provides a hard copy record capability and can produce alphanumeric characters at speeds up to 30 characters per second. It can accept incoming data at 110, 150, 220 or 300 bps.

The Thermal Printer can serve as a satellite printer for 5 Datapoint 3300's, permitting substantial economy. The printer unit is fully compatible with the Datapoint 3300/Tape Cassette Unit and the Datapoint 3000 CRT terminal. The unit is cable connected to the Datapoint 3300 and utilizes standard serial data logical interfaces. Power is provided from any standard wall outlet.

Using a standard 8-1/2" paper roll, the Thermal Printer can produce a wide variety of formatted reports, averaging less than a penny per sheet. Printing is accomplished through a thermal process utilizing a CRT-compatible 5x7 dot matrix which does not entail any mechanical impact. Because no inked ribbon is used, the operation is remarkably clean. Operation is quiet because less than 25 moving parts are used. Lubrication requirements are minimal. The Datapoint 3300/Thermal Printer and its companion units are handsomely styled with solid state construction throughout.

Specifications

Model Number
3300-200

Size
12" x 15" x 5½"

Weight
24.7 pounds

Plug-in
Standard wall outlet

Power requirement
57.5 watts

Print speeds
Up to 30 characters per second

Speed selection
Available at 110, 150, 220 and 300 BPS through automatic selection

Datapoint 3300 & 2200 Interface
Standard RS232B

Character Set
96 character ASCII, upper and lower case

Print Process
Thermal, heat sensitive paper

Print head
CRT compatible 5x7 dot matrix

Ribbon
None required

Moving Parts
Less than 25

Lubrication requirements
Minimal

Construction
Solid State
Less than 25 moving parts

Character Size
.110" high x .082" wide

Character Spacing
10 per inch horizontal
6 per inch vertical

Model Codes
3300-200 Thermal Printer
3300-201 Coded Print Control
3300-202 Thermal Roll Paper

Datapoint 3000®/Interactive Terminal

Based on concepts proven in the Datapoint 3300, the Datapoint 3000 was developed to provide the time sharing user with an inexpensive, interactive display terminal with full-screen teletypewriter compatibility. The terminal is attractively styled and quiet enough to fit the most critical office environment.

The Datapoint 3000 operates at data rates of 110, 150, 220, and 300 bits/second (10, 15, 20, and 30 characters per second), and can be used with a Datapoint 3300 Thermal Printer for hard copy. A separate eleven-key number pad and ten function keys provide a functional keyboard arrangement.

Functional Characteristics

Screen Size
12 inch rectangular tube

Character Size
0.16" x 0.11"

Number of Characters
1800

Characters Per Line
72

Number of Lines
25

Refresh Rate
60 frames per second

Character Set (ASCII)
27 alphabetic
10 numeric
26 special

Controls
Cursor: up, down, right. left, home up, home down
Erase: to end of line, to end of frame
Frame roll: up, down
Power: on, off
Mode: remote/local
Transmission: full duplex/half duplex
Rate: 110, 150, 220, 300 bits/second

Physical Characteristics

Dimensions
Width: 18 inches
Height: 14 inches
Depth: 19 inches
Weight: 48 lbs.

Power Requirements
115 v a.c., 60 Hz, 140 watts

Model Codes
3000-100 Interactive CRT Terminal
3300-102 Answerback option
             (factory-installed only)
3300-110 Telegraph Loop Keyer
3300-111 230 v.a.c., 50 Hz option
             (factory-installed only)
3300-112 Auto carriage-return/line-feed
             deletion kit
3300-113 Coded Cursor Key Kit
3300-114 Backspace Coding Kit
3300-115 Escape Key Coding Kit
3300-116 Space Over-write Latch Kit
3300-200 80 Column Printer
3300-201 Print Control option for
             3300-200
3300-400 Data Coupler

Datapoint 3360®/Display Unit

The Datapoint 3360-100 video terminal is a systems oriented terminal, capable of 480 character-per-second operation. Screen capacity is 2000 characters, formatted as 80 characters per line, by 25 lines. In addition to the 80 characters per line, two additional characters can be printed at the left margin separated by a space from the main text and used for line numbering or indexing of the first 24 lines.

This terminal transmits serial data in an interactive or full duplex mode. In addition to the interactive mode, this terminal also has a block transmit mode capable of transmitting one complete line of data as a block. The block transmitted data is selected by positioning the cursor to the information desired on the screen, and block transmit is initiated by a control "B" received by the terminal.

The serial data is transmitted in ASCII format at one of four selected baud rates. The baud rate select switch is physically located on the back panel near the lower left corner of the terminal.

The terminal may be used where system requirements call for a computer-controlled buffered terminal. All operations with the 3360-100 must be on-line. No off-line operations are possible, as the terminal must operate in a full-duplex manner.

Many options are available for this terminal, one of which is Auto-Tab. This option extends the flexibility of the 3360 Terminal by providing direct cursor positioning to any location directed by program control. This option will also allow the terminal to search out and locate for program control the exact location of three separate and distinct symbols and multiple locations of these symbols.

Specifications

Terminal

Screen Size
Standard 12" rectangular tube

Character Size
0.16" x 0.11"

Refresh Rate
60 cps, Line Synchronized

Buffer Memory
2000 Characters

Characters per Line
80

Number of Lines 3360A
24 (plus optional command line)

Keyboard
Full uppercase ASCII Keyboard plus control keys featuring "n"-key rollover and 10 key numerics pad

Cursor
Solid or Flashing, on/off under program control
Remotely positionable

Code Type
Serial ASCII Start-Stop

Data Rate
300, 1200, 2400, or 4800 baud selectable

Electrical Interface
E.I.A.-RS 232B (Data Set compatible in both socket and signal)

Power
180 Watts, 115 v.a.c., 60 Hz

Physical Dimensions
18" wide, 18" long, 14" high, 48 lbs.

Cursor Controls
Up Cursor
Down Cursor
Left Cursor
Right Cursor
Home Up
Back Space
Line Feed
Carriage Return
Turn off Cursor and Printer
Turn On Cursor
Direct Cursor position

Other Control Functions
Bell Ring
Start Printer
Block Transmit Line Cursor is on
Erase screen to end of line
Erase screen to end of frame

Datashare Video Terminal

The Datapoint 3360-102 is the video terminal offered specifically for use with the Datashare multi-terminal timesharing system. In this application the Datashare Video Terminal communicates with a Datapoint 2200 via the Multiple Port Communications Adaptor.

Screen capacity is 2000 characters formatted as 80 characters per line, by 25 lines. In addition to the 80 characters per line, two additional characters can be printed at the left margin separated by a space from the main text and used for line numbering or indexing of the first 24 lines.

This terminal transmits and receives serial data in an interactive full duplex mode to and from the Multiple Port Communications Adaptor via direct connection or over telephone lines using Data Sets. The serial data is transmitted in ASCII format at one of four selectable baud rates (300, 1200, 2400, 4800).

The Auto-Tab feature of the 3360-102 extends flexibility by providing direct cursor positioning to any screen location from the Datashare program controlling the 3360-102 port.

Specifications

Terminal

Screen Size
Standard 12″ rectangular tube

Character Size
.100″ x .058″

Refresh Rate
50/60 cps (power line frequency)

Buffer Memory
2048 Characters

Characters Per Line
82

Keyboard
Full uppercase ASCII Keyboard plus control keys featuring "n"-key rollover and 10 numerics pad

Cursor
Flashing, on/off under program control remotely positionable

Code Type
Serial ASCII Start-Stop

Data Rate
300, 1200, 2400, 4800 baud selectable

Electrical Interface
E.I.A.-RS 232B (Data Set compatible in both socket and signal)

Power
180 watts, 115 v.a.c., 50/60 Hz
option 3360-111 for 230 v.a.c., 50/60 Hz

Physical Dimensions
18″ wide, 18″ long, 14″ high, 48 lbs.

Cursor Controls
Up Cursor
Down Cursor
Left Cursor
Right Cursor
Home Up
Back Space
Line Feed
Carriage Return
Turn off Cursor
Turn on Cursor
Direct Cursor Position

Other Control Functions
Bell Ring
Erase Screen to end of line
Erase Screen to end of frame

18

Datapoint Training

The Datapoint Training Center offers a series of comprehensive courses designed to acquaint the programmer with the Datapoint product line.

Databus Programming Course (5 days)
COURSE TOPICS: DATABUS is a high level interpretive language for use on the Datapoint 2200. The statement and command features are specifically tailored to allow the programmer to quickly implement a task on the Datapoint. Tape handlers, CRT routines, print routines, disk file handling routines, communications routines, arithmetic routines, and many other features make DATABUS a powerful programming tool. Programmers with business applications will find this course helpful in constructing software systems in a short time.

Datapoint 2200/Assembly Language Programming Course (5 days)
COURSE TOPICS: This course allows a programmer to gain a detailed insight into the architecture and assembly level language of the Datapoint 2200. The course will provide not only the knowledge of the Datapoint's central processor operation, but familiarity with tape, keyboard, and CRT programming. This approach yields an overall ability with the 2200 so that the programmer or analyst can apply it to his application in minimum time. The course assumes some prior knowledge of machine and assembly level language, but many compiler level language programmers have found the assembly language straightforward and have had no difficulty in implementing a program.

Datapoint 2200/Disk Operating System Programming (2 days)
Datapoint provides a powerful Disk Operating System to be used in conjunction with a Datapoint 2200 and Disk. This course covers the file structure of the Datapoint DOS, the subroutines available and the powerful interrupt handler. The Assembly Language Programming course is a prerequisite for the DOS.

Datapoint 2200/Peripheral Programming (1 day)
COURSE TOPICS: For systems having additional devices such as printers, tapes, card readers and disks, this course will provide the programmer with a thorough knowledge of each device. Both software and hardware aspects are covered.

Datapoint 2200/Communications Programming Course (2 days)
COURSE TOPICS: Special programming techniques are used to construct a system with data communications by direct-line or modem. Communications programs involve procedures directing hardware to follow a specific sequence of events. Whether Datapoint-manufactured modems or Bell Data Sets are used, each type of device has a particular "handshaking" sequence. The theory and implementation of this sequence are covered along with the basic concepts of data communications. It is recommended that the student should attend the Assembly Language course prior to the Communications course because coding examples are offered.

Datapoint 2200/Maintenance Training
COURSE TOPICS: Datapoint 2200 maintenance training is available on an as needed basis to all system purchasers, including OEM's. Training includes operation of software and diagnostics plus detailed instruction on Datapoint equipment.

Datapoint Documentation
Datapoint Corporation makes available a complete roster of documentation and support literature for each of the Datapoint products. These are designed to give the user full information on the capability of these systems and how they can be put to work most effectively. All of these materials are available through Datapoint field sales offices or from Corporate headquarters.

Datapoint Supplies
To insure that your Datapoint equipment maintains top efficiency, Datapoint Corporation constantly evaluates the support materials that a smooth running data processing organization depends upon.

Cassette Tapes
Magnetic tapes for the Datapoint 2200 and 3300 units are expected to have a long operating life under heavy business usage. To meet this goal, the cassette tape supplied by Datapoint Corporation is not only digitally verified for consistency, but also individually checked for a smooth, non-wearing oxide coating. Only Datapoint cassette tapes will insure an error free and long life for your tape system.
Model Code: 2200-150 Cassette Tape, 300 feet
             2200-161 Blank Tape Labels

Printer Supplies
A complete line of printing materials is available for your Datapoint.
Model Codes: 2200-202 Ink roller for 2200/Printer
              2200-260 Servo Cloth Ribbon
              2200-261 Servo Carbon Ribbon
              2200-270 Servo Courier 72 Printwheel
              2200-271 Servo Pica Printwheel
              2200-272 Servo Elite Printwheel
              3300-202 Paper for 3300/Thermal Printer

Coding Pads
2200-151 Pad of coding forms, 25/Pad. Pad is suitable for use with Assembly Language or DATABUS, a high level language.

For further information on Datapoint products, please
write or call the Datapoint Corporation office nearest you.

Datapoint

Home Office:
9725 Datapoint Drive/ San Antonio,
Texas 78284/ (512) 696-4520

Direct Sales Offices:
Atlanta (404) 458-6423
Chicago (312) 671-5310
Cleveland (216) 921-9200
Dallas (214) 630-1342
Detroit (313) 557-6092
Greensboro (919) 299-8401
Houston (713) 688-5791
Los Angeles (213) 645-5400
Minneapolis (612) 854-4054
Newark (201) 568-1225
New York (212) 759-4656
Philadelphia (215) 643-5767
Phoenix (602) 265-3909
Portland (503) 244-0101
San Francisco (415) 968-7020
Washington D.C. (703) 525-6924

Sales Representatives:
AIDES, Inc./Lawrence, Kansas/ (913) 842-1147
AIDES, Inc./Omaha, Nebraska/ (402) 397-0166
AIDES, Inc./Kansas City, Missouri/ (816) 781-0400
AIDES, Inc./St. Louis, Missouri/ (314) 721-4205
PLS Associates/Denver, Colorado/ (303) 771-0140
PLS Associates/Albuquerque, New Mexico/ (505) 255-0120
PLS Associates/Salt Lake City, Utah/ (801) 272-3681

International Sales Representatives:
AUSTRALIA/Sigma Data/Australia (PTY) Ltd./Sydney
BELGUIM/Sait Electronics/Brussels/Telex: 846-21601
CANADA/TRW Data Systems/Scarborough/ (416) 438-9800; Telex: 06-23166
DENMARK/Regnecentralen/Hovedvejen 9/Telex: 855-15468
ENGLAND/Ventek, Ltd./London/Telex: 851-923038
FINLAND/Oy Nokia Ab Electronics/Helsinki/Telex: 857-12579
FRANCE/Matra S.A./Paris/Telex: 842-62777
GERMANY/Gier Electronics G.m.b.H/Hanover/Telex: 841-923449
HAWAII/The Systems Corporation/Honolulu/ (808) 955-6638/Telex: 723414
HOLLAND/Regnecentralen/Rotterdam 3/Telex: 844-24078
ISRAEL/I.S. Information Systems, Ltd./Ramat Abiv/Telex: 922-33816
JAPAN/CJK Company, Ltd./Tokoyo/Telex: 781-02322315
MEXICO/Control Y Proceso Electronico, S.A./Mexico City/ (905) 563-9902
NORWAY/SCANIPS/Oslo/Telex: 856-18549
SOUTH AFRICA/Computer Advances/Johannesburg/Telex: 960-430774
SWEDEN/Nokia Ab Electronik/Hagersten/Telex: 854-1802
SWITZERLAND/TRW Communications/Lyss/Berne/Telex: 845-34446
U.S.A./TRW Electronics-International/Los Angeles/Telex: 674593