

# SOURCE DATA

THE DATAPoint SOFTWARE NEWSLETTER

No. 3

October, 1979

## Software pricing changes

A new policy is now in effect regarding license and monthly maintenance fees for the following Datapoint software:

ARC™	DATASHARE®	RPGPLUS
DCIO	BASICPLUS	DASP™
MLCI	COBOL	EM3275

Software in the new program is divided into three categories:

1. Software orders accompanying processor orders
2. Software orders not accompanying processor orders
3. Certain software not included in 1 or 2

### 1. Software orders accompanying processor orders

The following software is an integral part of Datapoint processors. The license fees are included in the processor charges when this software is ordered with a processor. Users may make additional copies of the software as needed (subject to the license provisions of their Master Agreement with Datapoint). Media charges and monthly maintenance fees are required.

<i>Model</i>	<i>Description</i>	<i>Software monthly maintenance</i>
9801	ARC (File Processor)	\$10.00
9803	RPGPLUS	\$15.00
9804	BASICPLUS	\$10.00
9806	DCIO	\$10.00
9807	ARC (Appl. Processor)	\$10.00
9809	DASP	\$10.00
9810	MLCI	\$10.00
9812	DATASHARE V	\$10.00

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## Editor's note

The address printed in the last issue for the Southern California Datapoint Users Group is incorrect. Here is the right one:

Southern California Datapoint Users Group  
c/o Kenneth Pierce  
City of Hope Medical Center  
1500 E. Duarte Rd.  
Duarte, CA 91010  
(213) 359-8111, Extension 244

### Letter to the Editor:

I received my first issue of SOURCE DATA and have the following comments which I thought you may be interested in hearing. Our company, like many of your customers, is a small business. We look at our system as a tool to achieve our goals. I feel that there should be more emphasis in the news letter upon practical ideas for the small business user. For example, the following general categories would be of particular interest to our company and many other small businesses:

1. Procedural advice, i.e., job scheduling and personnel training.
2. Hardware tips, i.e., maintenance advice and field upgrading options.
3. Software tips of a user oriented nature, i.e., programming advice, small business applications (such as general accounting problem solving and financial management applications.)

### From the Editor:

Thank you for your feedback on SOURCE DATA. I quite agree with you that some of the most valuable types of information are practical ideas. For example, we included in the first issue:

- Saving time on ISAM adds
- Systems planning considerations

We hope to have at least one or two articles in the areas of your specific interest in each edition of SOURCE DATA. The number of these articles will be contingent on the feedback and contributions we receive here.

## 2. Software orders not accompanying processor orders

A customer who has executed a Master Agreement with Datapoint may order items from the above list of software for a one-time license fee of \$500 per item. Media charges and monthly maintenance are required.

DATASHARE V Version 1 users (Model 9805 or Model 9808) will have through January 1980 to upgrade to DATASHARE V Version 2 without having to pay the \$500 license fee. After January 1980, orders for DATASHARE V Version 2 not accompanying a processor order will be charged the \$500 license fee.

## 3. Certain software not included in 1 or 2

### A. ANSI COBOL

For a one-time license fee of \$1500 each, a customer may order as many COBOL compilers as needed (Model 9802). Additional copies of the software may be made as needed (subject to the terms of the license agreement). Media charges and the monthly maintenance fee of \$20 are required for each COBOL compiler ordered.

### B. EM3275

For a one-time license fee of \$500 each, a customer may order EM3275 (Model 9811). Users may make as many additional copies of EM3275 as needed (subject to the terms of the license agreement). Media charges and the monthly maintenance charge of \$10 are required for each copy of EM3275 ordered.

Monthly software maintenance fees must be paid for each listed software package which is ordered. This entitles the user to order updates and enhancements to the software — one new release for each software package ordered. The maintenance fees do not apply to copies made by the customer, but users who copy any Datapoint software product must affix to the copy the same copyright or proprietary information notice that was affixed to the original software.

Media charges are not included in any license fee or processor charge.

## Summary of software fees

Model	Description	With a processor order	Without a processor order	Separate license fee	Monthly maint.
9801	ARC (File Processor)	N/C	\$500	—	\$10
9803	RPGPLUS	N/C	\$500	—	\$15
9804	BASICPLUS	N/C	\$500	—	\$10
9806	DCIO	N/C	\$500	—	\$10
9807	ARC (Appl. Processor)	N/C	\$500	—	\$10
9809	DASP	N/C	\$500	—	\$10
9810	MLCI	N/C	\$500	—	\$10
9812	DATASHARE V	N/C	\$500	—	\$10
9802	ANSI COBOL	—	—	\$1500	\$20
9811	EM3275	—	—	\$ 500	\$10

## Media charges

When ordering 9800 series software which is to be loaded onto disk media for shipment, the following model codes are to be used. DO NOT use these model codes to order blank media.

Model	Description	Price
20650	Single density diskette and set-up charge	\$ 15
20651	Double density diskette and set-up charge	\$ 15
20652	2.5MB cartridge and set-up charge	\$105
20653	10MB cartridge and set-up charge	\$160
20654	25MB disk pack and set-up charge	\$285
20655	60MB storage module and set-up charge	\$460
20656	Customer supplied media set-up charge	\$ 10
20657	System pack set-up charge	\$ 10

### For example:

An order for a COBOL compiler to be loaded onto a 10MB cartridge would have two line items on an order form:

9802	COBOL Compiler	\$1500
20653	10MB cartridge and set-up charge	\$ 160

### Another example:

An order for a 4650 System accompanied by an order for COBOL, RPGLUS, ARC File Processor, ARC Applications Processor, and DASP to be loaded onto the 60MB System Pack (S4650) will require six line items:

9801	ARC for FP	N/C
9802	COBOL	\$1500
9803	RPGPLUS	N/C
9807	ARC for AP	N/C
9809	DASP	N/C
20657	System pack set-up charge	\$10

Note that this order is to be loaded onto the S4650 System Pack. There is no charge for most of the items ordered because the order includes a processor. It is possible to order a system pack without ordering a system. If this were the case, there would have been a \$500 charge for each of the N/C items.

Software products and prices not specified above are listed in the Software, Documentation and Supplies Price Schedule (Document No. 60231, no charge).

## Diskette handling



# SPOOL and UNSPOOL

## The ARC Print File Queuing Command and Print Unspooler

SPOOL, the print file queuing program (or a user-written equivalent), along with its companion program UNSPOOL, is intended to provide ARC System users with a comprehensive and efficient method of printing files.

The system is composed of two stations:

1. A spooler, which can be any applications processor currently participating in the ARC system, and
2. An unspooler, which is an ARC applications processor dedicated to printing

The spooler informs the unspooler that there is a print file on disk which needs to be printed. The spooler also gives more specific information on the job to be done, such as:

- Type of form to be used, for example:
  - stock forms
  - three part forms
  - income tax withholding
  - invoice forms
  - pay checks
  - plain paper, 8 lines per inch
- Specific printer attributes, which could include:
  - belt-type
  - drum-type
  - significantly faster printer
  - print both upper and lower case
  - only print upper case alphabets
  - dual tractor option available
- Job priority
- Minimum column width of printer
- Number of copies to be printed
- Location of file within the system
  - volume identification
  - file name
  - user name

The job is then taken over by the unspooler. The unspooler is the processor which provides the mechanism by which the jobs are actually printed. The UNSPOOL program requires an 1170, 1800, 3800, 5500, 6000, or 6600 series processor with at least 48K bytes of user memory running under DOS.D. Up to three local printers are supported by each unspooler (terminal and servo printers are not supported). The unspooler is dedicated to a single function — printing — and as such can provide high speed printing on several printers simultaneously.

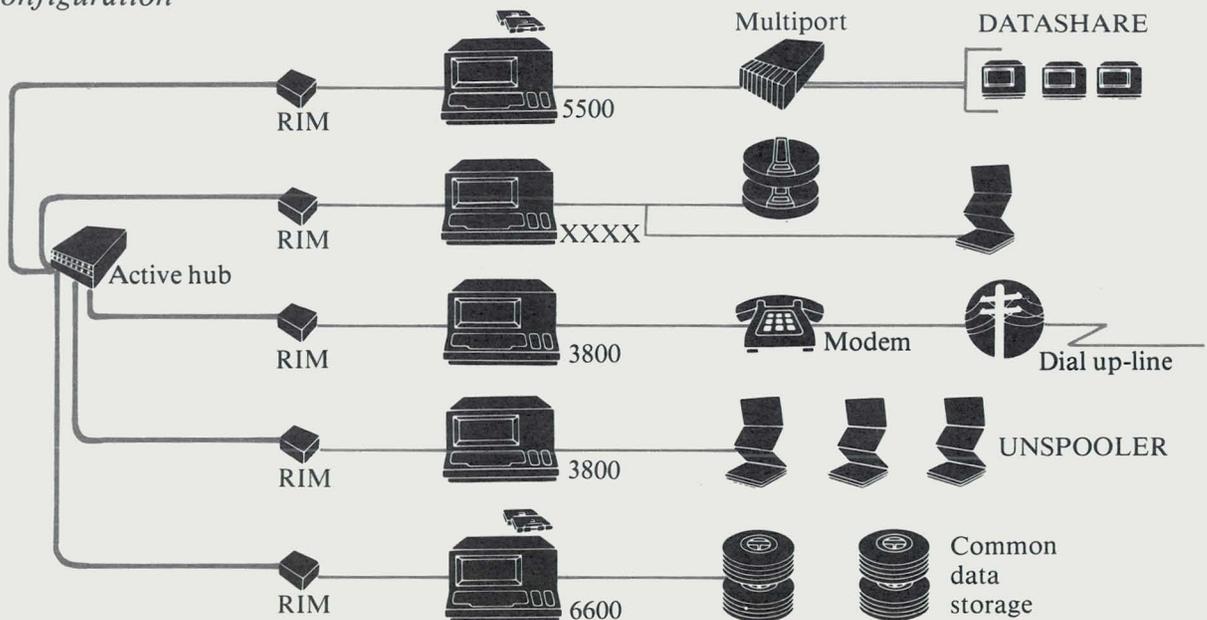
The spooler and unspooler communicate via a disk file (SPOOLPRT/TXT) on the ARC system. The spool and unspool processors must both have mounted the volume which holds SPOOLPRT/TXT and the print file(s) to be printed. This SPOOLPRT file is actually a queue containing many types of information which may be modified and inspected by programs written in any of the Datapoint data processing languages. SPOOL is one such program which is intended to modify the queue. However, a small subroutine could also be included in a user-written program so the program itself could inform the unspooler of the job to be printed. The SPOOL program operates in two modes:

- normal mode
- interactive mode

The normal mode requires that all options and parameters be specified on the program command line. This requires that the operator be familiar with the operation of the program. The interactive mode offers a menu display, and the operator is prompted for all information needed to process the request. The interactive mode includes features not available under the normal mode, such as scanning the queue, deleting jobs, and observing printer activity.

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*Spooling with an ARC™ System — Typical configuration*



### Spooling from DATASHARE

Spooling is also available to DATASHARE users running stand-alone. With this type system, jobs are SPOOLED during the day; then the DATASHARE system is taken down during off hours to print the files. A stand-alone UNSPOOL processor can support up to three printers just as it does under ARC.

Entries may be added to the queue from a user-written DATASHARE program in two ways:

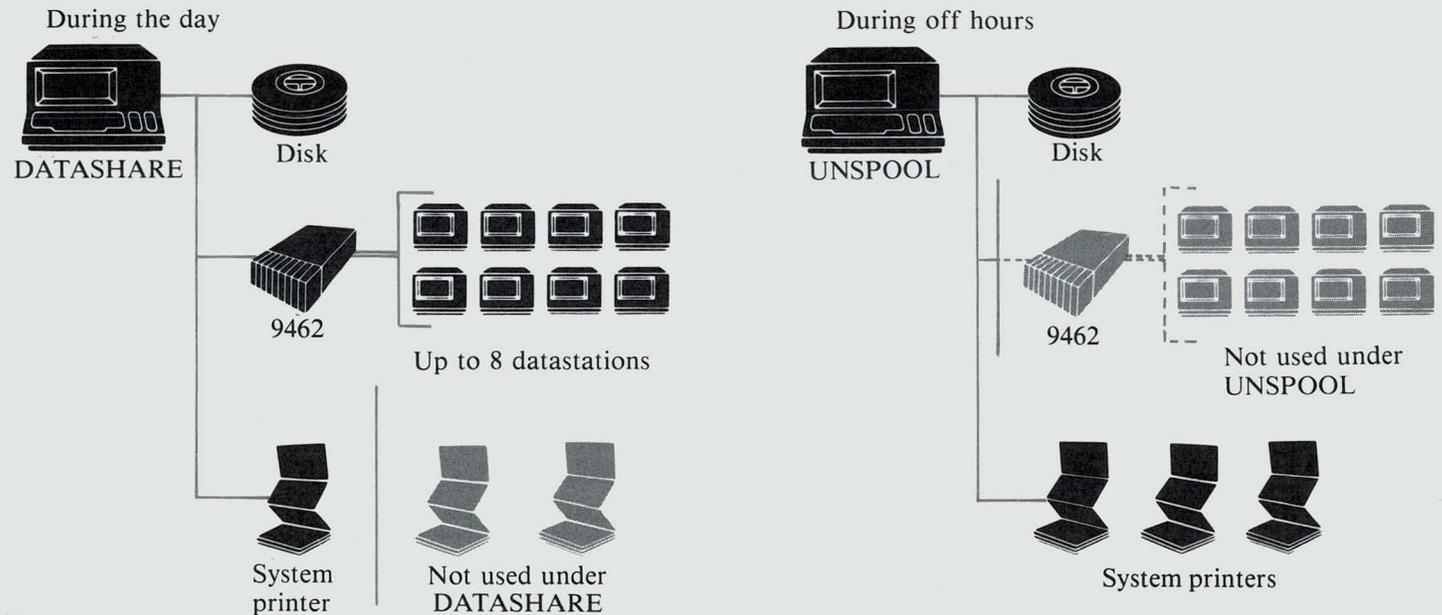
- A DATASHARE spooling subroutine included in the program
- The DATASHARE SPOOL program which may be executed directly from an active DATASHARE port

These two elements are provided in the SPOOL software.

SPOOL — User's Guide — Document No. 50434  
1 Cassette - Model Code 20586, \$15.00

UNSPPOOL — User's Guide - Document No. 50462  
1 Cassette — Model Code 20637, \$15.00

### Spooling with a DATASHARE stand-alone system - Typical configuration



## More "Humanizing"

The following is reprinted with permission from INFOSYSTEMS, Reader Feedback, July 1979.

This isn't a late entry in your contest for the most clever computer name (Publisher's Memo, November, 1978), but I thought you might be interested in how far computer humanizing has gone in our organization. Early last year, we took delivery of a Datapoint 1500. The equipment hadn't been uncrated before I overheard one of our accounting clerks remark that the box contained "Gladys," our department's newest employee. Why "Gladys" I don't know, but since the 1500 had been dubbed "Guppy" in Datapoint's R&D department, I had a plate made for the computer room door with the name "Gladys Guppy."

Just how well the name stuck became apparent several months later, when two of our long-time employees were having lunch with a recently hired secretary from the marketing department. During a conversation about office procedures, the new employee turned to the other two and said, "By the way, has Gladys been on vacation? I've been here almost a month, and I still haven't met her."

Gladys is raising a family now, consisting of programs with girls' names and files with boys' names. We find that the names are easy to remember, but they can cause some consternation among the uninitiated. Imagine the look on the face of one of our outside auditors when someone dashed out of the computer room hollering, "Frances aborted!" The reply, "Irving must be full," made plenty of sense to those of us who knew that Frances is a program that writes to a file named Irving, but it apparently didn't offer much consolation to the auditor. He hasn't been seen since.

Gladys would win an office popularity contest hands down. Rumor has it that she's even become a confidant of our president, who was heard to inquire solicitously, "Is Gladys ill?" apparently after encountering the Datapoint repairman in the hallway.

Where all of this will lead, I don't know. It does seem appropriate, however, that a society which has given its people numbers should now elect to give its computers names.

# Communications - an understanding of Modems

**MOD.U.LA.TOR/n:** a device to vary the amplitude, frequency, or phase of a carrier wave or signal in telephony, telegraphy, radio, or television.

**DÉ.MOD.U.LA.TOR/n:** a device to extract the intelligence from a modulated radio, laser, or computer signal.

**MOD.EM/n:** a contraction of modulator/demodulator: a device containing both a modulator and a demodulator.

Contrary to common beliefs, a modem is not necessarily a "little black box" connected between a computer and a telephone line. Modems are available in other colors as well as "basic black." What is this "little black box?" What does it do? Why do you need one?

First, a little history of data communications. Back in the old telegraph days, information (data) was passed along a pair of wires from town to town by interrupting a voltage on these wires according to a certain sequence of dots and dashes. This code (Morse) was converted back to a readable form (the Telegram) by the operator at the receiving end.

Later, this form of communications was improved through the use of machines (Teletypewriters) and greater speeds were obtained. Along with these machines came new methods of coding the data for transmission: the Baudot Code (5 information bits) and the ASCII Code (8 information bits). The speed of transmission was still limited due to several factors involving the wires used; an information pulse transmitted at one end of the wire pair didn't always look the same after several miles.

Voice transmission at this time was quite advanced. Instead of using one pair of wires for a conversation, carrier systems were used to impress several conversations on the same pair. This created problems for people trying to use these systems for data. A person could not be sure that a voltage impressed on one end of a circuit would appear at the other end. Therefore, a system had to be devised to make these data impulses look like a voice transmission and then be converted back to data at the other end. Thus, the modulator/demodulator (modem) was born.

At first, these modems were primitive and their speed was limited to about 300 bits of information per second. This method of transmission, known as asynchronous, converted the data bits to audio tones as they appeared at the modem. Noise on the line was the limiting factor in this type of transmission.

Later, improved methods of transmission, known as synchronous, were developed allowing greater speeds — up to 4800 bits per second — over a voice-grade line. Synchronous transmission required the modems at both ends to be "synchronized" with each other so they could dif-

ferentiate data from noise. All of these modems, however, had to be controlled by the data terminal. Several signals pass back and forth between the modem and the terminal and are categorized as follows:

- A. Ground or common return signals
- B. Data signals
- C. Control signals
- D. Timing signals

In order to make everything compatible, certain standards were developed by the Electronic Industries Association (EIA) known as RS-232. The RS-232 specification defines the voltage levels required and the exact locations of the signals on a 25-pin connector. They are as follows:

<i>Pin number</i>	<i>Circuit</i>	<i>Description</i>
<i>(Group A)</i>		
1	AA	Protective Ground
7	AB	Signal Ground (SG)
<i>(Group B)</i>		
2	BA	Transmitted Data (TD)
3	BB	Received Data (RD)
14	SBA	Secondary Transmitted Data (STD)
16	SBB	Secondary Received Data (SRD)
<i>(Group C)</i>		
4	CA	Request to Send (RTS)
5	CB	Clear to Send (CTS)
6	CC	Data Set Ready (DSR)
20	CD	Data Terminal Ready (DTR)
22	CE	Ring Indicator (RI)
8	CF	Received Line Signal Detector (CD)
21	CG	Signal Quality Detector (SQ)
23	CH/CI	Data Signal Rate Selector
19	SCA	Secondary Request to Send (SRTS)
13	SCB	Secondary Clear to Send (SCTS)
12	SCF	Secondary Received Line Sig. Detect (SCD)
<i>(Group D)</i>		
24	DA	Transmitter Signal Element Timing
15	DB	Transmission Signal Element Timing
17	DD	Receiver Signal Element Timing
9	—	(Reserved for Data Set Testing)
10	—	(Reserved for Data Set Testing)
11	—	Unassigned
18	—	Unassigned
25	—	Unassigned

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The first group of signals, Grounds & Common Returns, is used for grounding the equipment, providing a common reference point for the modem and the terminal, and providing return paths for the other signals.

The second group of signals, Data Circuits, are the lines between the modem and terminal carrying actual data. Transmit refers to data going from the terminal to the communications line and receive is the data from the remote end.

Some modems can "talk" and "listen" at the same time. These are called full-duplex modems. They have two channels of data usually referred to as "Main" and "Reverse." Reverse is sometimes called the secondary channel.

Other modems do not have the ability to talk and listen simultaneously and are called half-duplex modems. Half-duplex presents another problem of the communications line. When the modem stops transmitting, it must allow enough time for the communications line to "settle down." This is akin to shouting in a canyon and hearing your echo. If the modem starts receiving too quickly, it will hear the last part of its own transmission. This switching from transmit to receive is called "line turn-around." The echo problem can be eliminated by introducing a delay between the Request to Send (RTS) command to the modem and its reply, Clear to Send (CTS), to the terminal. This delay is usually about 8.5 milliseconds (.0085 seconds), but in some cases can be as long as 150 milliseconds.

The third group of signals, Control Signals, controls the modem. Data cannot be transmitted or received unless the modem is prepared to do so. The first event to occur is to tell the modem to turn on its carrier for transmission of data. This is done with the RTS line. The modem will then acknowledge this control by sending back on the CTS line. When the modem returns the CTS signal, it is saying "I have the carrier on and all is well."

A similar event occurs when receiving data. Because of extraneous noise of the communications line, random "data" may be received on the receive data line. How does the terminal know if this is valid data? The terminal monitors the Receive Line Signal Detect which the modem provides. If this line is active, that means the modem on the other end has turned on its carrier and is sending valid data, as opposed to noise impulses, on the line.

Another important signal to the modem is the Data Terminal Ready (DTR). Some modems are capable of automatically answering the telephone line. If this signal is not present, the modem will ignore the ringing telephone. Once the line has been answered by the modem (provided DTR is on), it will send a signal to the terminal indicating it has the line and communications may proceed. This signal is Data Set Ready (DSR). The modem also provides an indication that the phone is ringing, Ring Indicator.

The fourth group of signals, Timing, apply to the synchronous modems. These signals synchronize (lock) the modem with the terminal. Either the terminal or the modem may provide the master timing signals.

Another feature of the modem is called dynamic conditioning. On long distance communications, the characteristics of the line will vary considerably. The modem is capable of equalizing itself to these varying conditions "on the fly" or continuously during the data transmission. A modem may not need this feature if the communications line is fixed and its characteristics do not change. These modems are called limited-distance or short-haul modems and are usually less expensive because of the lack of the conditioning circuitry.

So the "little black box" really does a lot in conditioning and transmitting the data and controlling the communications line. Without them, data would probably still be limited to Morse Code.

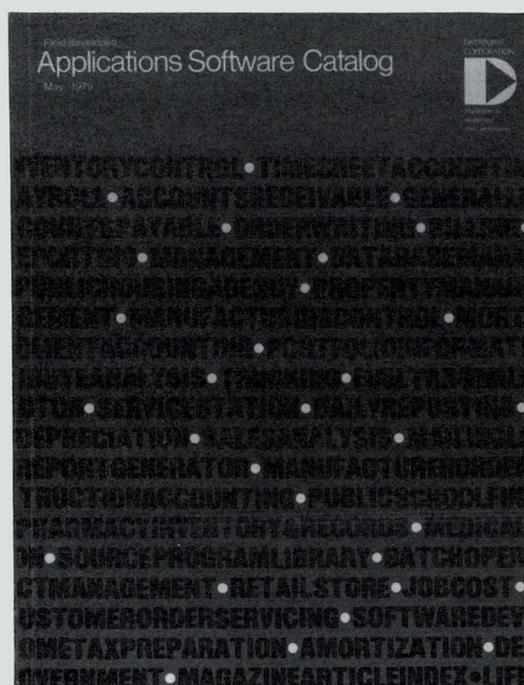
## New Field-Developed Applications Software Catalog

The latest version of this catalog (September 1979) is currently available. It lists and describes 165 software programs submitted by Datapoint's Domestic Sales Representatives. Entries are cross-referenced and page numbers have been added to aid in locating software listings applicable to your needs.

For further information about listing software in the next edition of the catalog, contact:

**DATAPOINT CORPORATION**  
Attn: Marketing Programs  
9725 Datapoint Drive  
San Antonio, TX 78284

*Field Developed Applications Software Catalog* - Document No. 60306, \$3.50



# Datapoint's new Data Access Arrangement Devices

Data Access Arrangement (DAA) is telephone company terminology for a device used to connect "foreign" equipment to a telephone line. After July 1, 1979, all customer-owned equipment attached to the public telephone network must be FCC-registered equipment or connected via an FCC-registered DAA device. Datapoint is now offering two such FCC-registered DAA devices:

**Model 9445 DAA (Bell-type 1000A-CDT)** — for use in applications which do not require automatic dialing or answering by Datapoint equipment.

**Model 9446 DAA (Bell-type 1001F-CBS)** — to be used when Datapoint equipment automatically dials or answers the phone.

Both models are compatible with new Datapoint communications adapters which require a DAA (such as 9401, 9402, 9408, 9409).

### Telephone company ordering information

Some equipment for use with the DAAs must be ordered through the telephone company. This equipment includes a data jack, and a telephone handset and jack (optional for model 9446). Your local Datapoint sales office can explain telephone company ordering procedures, as well as answer questions about the equipment or the DAAs.

For customers familiar with phone company ordering procedures, here is the technical information needed to order equipment to connect Model 9445 and Model 9446 DAAs to the phone network:

	9445	9446
FCC Reg. #	AK396F-70014-PC-R	AK396F-62376-PC-N
Ringer		
Equivalence	0	0.4B
Telephone Jack code	RJ45S	RJ45S

A telephone set is required for the Model 9445 (CDT) manual DAA, and is optional for the Model 9446 (CBS) automatic DAA. If a telephone set is needed, a model 502 (rotary dial) or a model 2502 (Touch-Tone\*) exclusion key telephone (RTC) should be obtained, with an RJ36X telephone jack. The RTC should be ordered with the following options:

Code	Option
A1	Telephone set controls line (for Model 9445) } OR
A2	DAA controls line (for Model 9446) }
B3	Aural monitoring — not provided
C5	Touch-Tone } OR
C6	Rotary dial }
D7	Switch-hook indication only — provided

### DAA price information

Model	Lease 1yr	Lease 2yr	Rent 3yr	Purchase	Maintenance	Installation	
9445	\$ 7	\$ 6	\$ 5	\$ 8	\$175	\$2	\$60**
9446	\$10	\$ 9	\$ 8	\$11	\$250	\$3	\$60**

\*\*If the DAA is installed with a system (ie, processor with communications), the installation charge does not apply.

\*Registered Trademark A.T. & T.



9445

9446

# MULTILINK™ for Datapoint's 1500 Dispersed Processor

MULTILINK is an extension of DATABUS™, Datapoint's business programming language. It allows communication between a user's DATABUS programs and a variety of other computer systems via telecommunication facilities. Now with DBML15, the benefits of MULTILINK have been extended to users of Datapoint's 1500 Dispersed Processor:

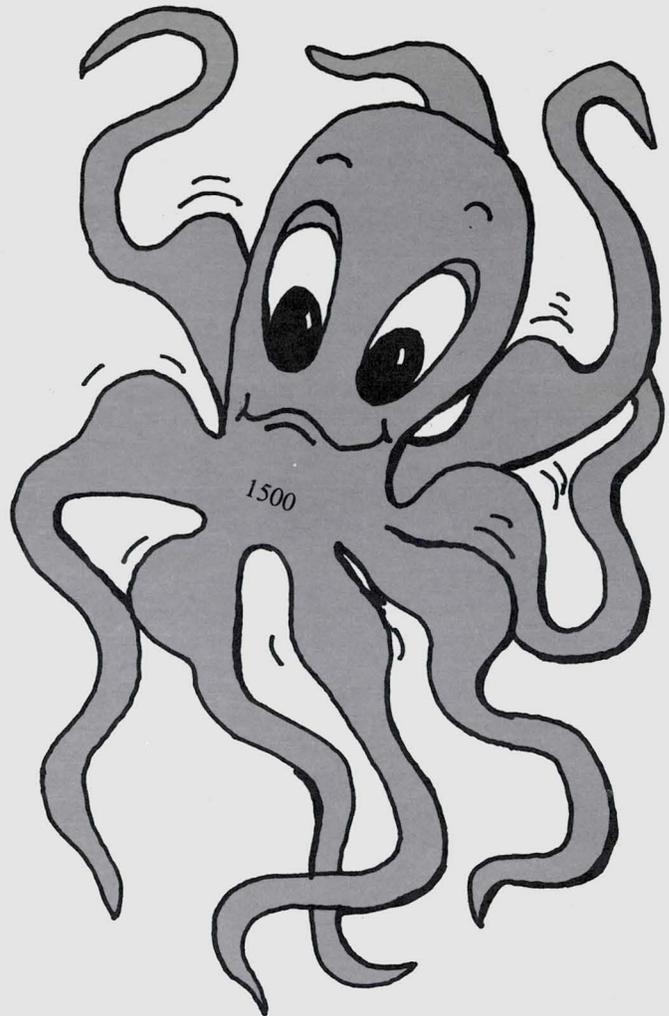
- Intelligent control of telecommunications by a high-level language program
- Reducing the communications line load by reducing the frequency and size of mainframe inquiries
- Decreasing the mainframe load (or minimizing an increased load) by performing work independently of the mainframe

MULTILINK consists of two parts:

1. The interpreter which supports the MULTILINK extensions
2. Individual communications programs called line drivers

A user's DATABUS programs communicate through the line driver via simple MULTILINK commands (SEND, RECV, COMTST, COMWAIT, and others). Each line driver is specifically designed for communications with a particular type of computer system. 1500 DATABUS programs using MULTILINK extensions are compiled using the new fast DBCMP15. These programs can be specially written telecommunications programs or existing user programs adapted for telecommunications by means of MULTILINK.

## 1500 MULTILINK



### A sample MULTILINK program

*continued next page*

```
MESSAGE  COMLST      3
EXROUTE  INIT        "E02"
VAR1     INIT        "HI HARRY!"
VAR2     DIM         50
      .
      .
      .
      KEYIN          *P1:12,"ENTER MESSAGE:",VAR2
TRANSMIT  COMCLR     MESSAGE
          SEND       MESSAGE,EXROUTE;VAR1,VAR2
          COMWAIT
          COMTST     MESSAGE
          GOTO       TRANSMIT IF OVER
      .
      .
      .
NXTINSTR
```

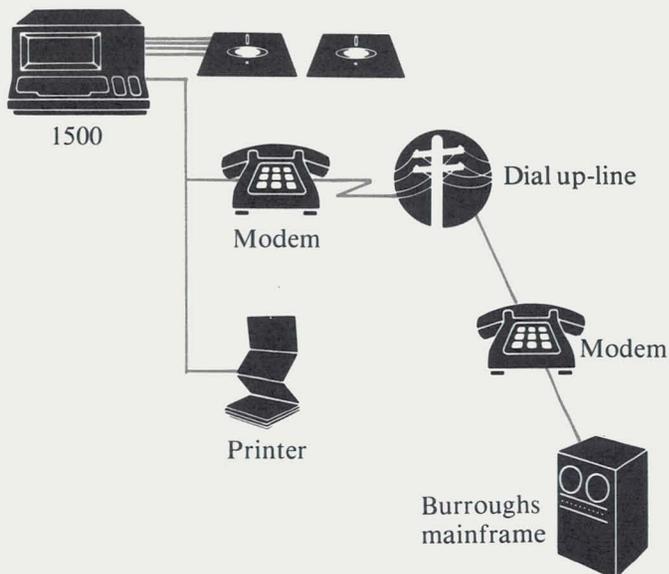
### DBML15 — Interpreter

DBML15 is the DATABUS interpreter which supports MULTILINK on the 1500 processor. With DBML15, the 1500 has access not only to its own local diskettes, but also to a host computer's data files. This interpreter offers the same capabilities as the DATABUS interpreter DB15, except that concurrent job execution is not supported under DBML15. In addition, DBML15 provides support for the MULTILINK features. Only MULTILINK line drivers written for use on the 1500 are supported by DBML15.

### ML15TC35 — Line Driver

ML15TC35 is the first of a series of MULTILINK line drivers for the 1500. It offers a flexible means of communicating with a Burroughs mainframe for either interactive or batch transfer applications. ML15TC35 is configurable for either synchronous or asynchronous operation at speeds up to 4800 baud, and implements Burroughs standard poll/select protocol for multipoint operation.

### 1500 MULTILINK - ML15TC35



### ML15TTY — Line Driver

ML15TTY is a DBML15 line driver module for use with USACII teletypewriter protocol. It may be used for communications with teletypewriters or most USACII asynchronous serial RS-232 peripherals such as card readers, badge readers, printers, etc.

### Model codes

*DML15* - User's Guide - Document No. 50460  
1 Diskette - Model Code 20633, \$15.00

*ML15TC35* - User's Guide - Document No. 50461  
1 Diskette - Model Code 20634, \$15.00

*ML15TTY* - User's Guide - Document No. 50467  
1 Diskette - Model Code 20660, \$15.00

*DBCMP15* - User's Guide - Document No. 50302  
1 Diskette - Model Code 40273, \$15.00

## DATASHARE V Version 2

These are the model codes and media charges only for DATASHARE V Version 2, described in the last issue of SOURCE DATA. DATASHARE is released on 2 cassettes (\$30.00). In addition, it is released on 2 diskettes or 1 double density diskette.

*User's Guide* - Document No. 50450, \$4.00

\*See page 2 for information about ordering 9800 series software. License fees for DATASHARE V are established according to the new software fee program. Current DATASHARE users may upgrade to Version 2 before January 31, 1980, and pay only the media charge.

This is the software needed to configure and support DATASHARE V Version 2. It is included on the new DATASHARE system packs.

Description	Model code	Media charge*
CHAINPLS 2.1	20531	1 Cassette*
	20532	1 Diskette*
	40352	1 Double Density Diskette*
LINK 2.2	20293	1 Cassette
	20366	1 Diskette
	40308	1 Double Density Diskette
LIBSYS 1.3	20391	1 Cassette
	20392	1 Diskette
	40329	1 Double Density Diskette
DOSEPT/REL 2.1	20308	1 Cassette
		Diskette versions will be available soon.
FIXREL 1.3	20441	1 Cassette
	20442	1 Diskette
	40336	1 Double Density Diskette

FIXREL is highly recommended but is not mandatory since it is needed for maintenance only.

\* Media Charge - 1 Cassette, \$15.00  
1 Diskette, \$15.00  
1 Double Density Diskette, \$15.00

### Correction

In Issue 2, part of a sentence was inadvertently omitted from "The Ten Commandments of DATASHARE." In the section entitled 5. LOOPS, the sentence should have read:

"A quick way to recognize a page boundary is that the middle digit of the instruction address will change from 3 to 4 or 7 to 0."

# MTE55 - Datapoint's Multiple Terminal Emulator

MTE55 is a versatile data communications package which consists of an MTE command module and individual modules which emulate a variety of synchronous batch terminals. The MTE55 system currently supports emulation of the following Remote Job Entry (RJE) terminals:

- IBM 2770 (using MTEIBM)
- IBM 3770 (MTEIBM)
- IBM 2780 (MTEIBM)
- IBM 3780 (MTEIBM)
- IBM 360/20 HASP (MTEHASP)
- IBM RES (MTEHASP)
- CDC UT2000 (MTECDC)
- Honeywell G-115 (MTEGRTS)
- Datapoint Remote User Program (MTERUP)

MTE55 combines the similar codes found in most emulator programs into a single common system. This provides a common operator interface and simple procedure regardless of which emulator is used, thereby reducing training and speeding operations.

## MTE55 requirements and performance

The MTE55 command module is designed to operate on processors running the 5500 instruction set:

- 6600 (DOS.D and DOS.E)
- 6000 (DOS.D under ARC)
- 5500 (DOS.D and DOS.E)
- 3800 (DOS.D under ARC)
- 1800 (DOS. G; DOS.D under ARC)
- 1170 (DOS.C)
- 1150 (DOS.C)

Communications with the MTE 55 emulators occur over dial-up or leased telephone lines at speeds of up to 9600 baud using the 9481 Communications Adapter (up to 4800 baud with the 9404 adapter). The 1800 processor with its internal communications adapter, and the 3800, will run MTE55 at up to 4800 baud. The Datapoint emulators are not restricted to the speeds supported by the emulated terminals, and in addition, provide for automatic dial and automatic answer.

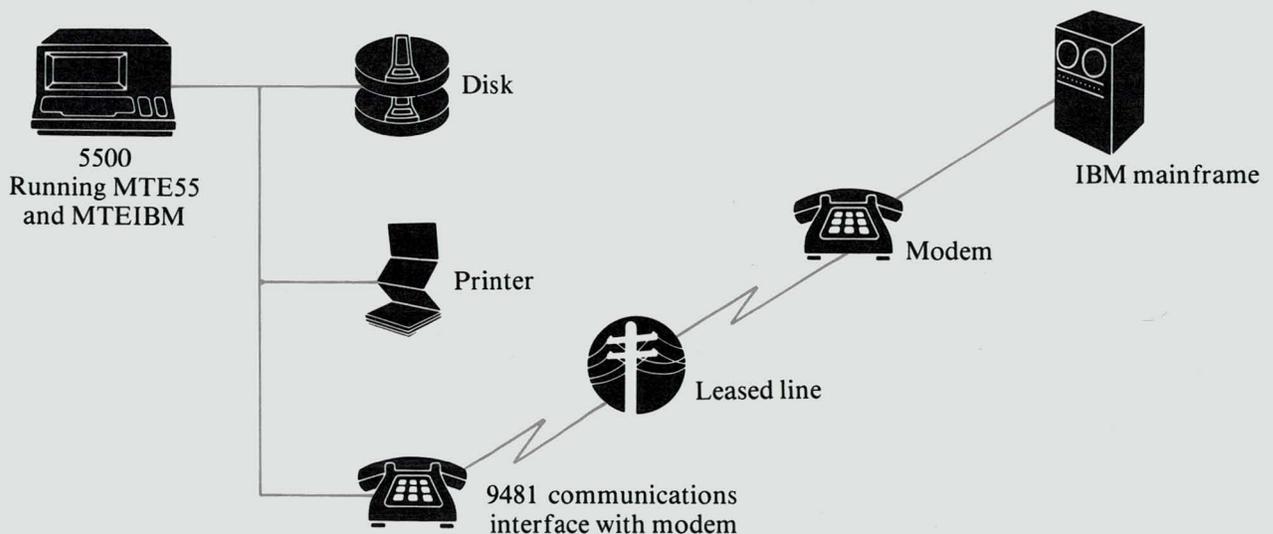
## MTE55 Peripheral Support

The basic MTE55 module provides the command and interface functions which allow the individual emulators to control a wide variety of peripheral devices. The following Datapoint peripherals are supported:

- Disk or diskette storage
- Local and servo printer
- Card reader
- Magnetic tape (7- or 9-track)
- Cassette tape
- Keyboard
- Display

The Datapoint emulators will support three logical devices — a card reader, a printer, and a punch. However, any input device available on the Datapoint system may be configured as the "reader." Any output device available on the system may be configured as the "printer" or "punch." The system communicating with the emulator will be unaware of any substitution.

## MTE55 - Typical configuration



*continued next page*

## Emulator selection screen format

```

DATAPOINT'S MULTI-TERMINAL EMULATOR  RELEASE 1.2 OCT 15, 79
SELECT EMULATOR FOR:

A = IBM 2780      F = IBM 3770
B = IBM 3780      G = CDC UT200
C = IBM HASP     H = CDC UT200A
D = IBM RES      I = RUP
E = IBM 2770     J = GRTS G-115
    
```

### The MTE 55 emulator modules

#### MTEIBM

This package provides emulation for four different IBM terminal types — 2770, 3770, 2780, and 3780. The emulators can communicate with any system with which the standard IBM terminals can communicate.

**IBM 2770** - The IBM 2770 data communications system is a general purpose terminal system that can be used for low or medium speed batch operations, for interactive file inquiry, and for off-line media conversion.

**IBM 3770** - The IBM 3770 system is a group of medium to high speed batch communications terminals which combine keyboard, printer, and punched card peripherals with diskettes. Communications occur via dial-up or leased lines.

**IBM 2780** - The IBM 2780 data communications terminal is a remote input/output device which can communicate with a mainframe over telephone lines at rates of up to 4800 baud.

**IBM 3780** - The IBM 3780 is a remote input/output device which can be connected to a mainframe via dial-up or leased lines. The 3780 communicates at speeds of up to 7200 baud.

#### MTEHASP

This package provides for the emulation of HASP and RES workstations for IBM communications. These workstations can transmit jobs from card readers to the central site, receive output from the central site to printer or punch, and transmit or receive messages between the remote and central consoles. Both HASP and RES use the simultaneous communication technique called "multileaving." To the user, the processor appears to transmit and receive reader, printer, punch, and console data simultaneously.

#### MTECDC

MTECDC is designed to communicate with any system with which a standard UT200 can communicate. The UT200 is a remote batch communications terminal which is used for job submission to and data retrieval from a CDC computer.

#### MTEGRTS

This package provides emulation of the Honeywell (GE) G-115 workstation for communicating with a Honeywell mainframe using the General Remote Terminal System (GRTS) package. The workstation is used for batch job submission and data retrieval from a Honeywell Series

## Emulator execution screen format

```

MTE55  MODE=HASP STATE=T/R TX STS=TEXT RDR=000101 DATASND/TXT
      1.2      1.2      RX STS=TEXT PRT=000019 USER0001/TXT
      ERRORS=0000 PUN=000000

+RDR DATASND
+TX
    
```

6000 Information Processing System. Teleprinter output can be directed to the console device.

#### MTERUP

The MTERUP emulator serves as an intelligent remote workstation for Datapoint's Attached Support Processor (DASP) software package communicating with an IBM 360/370. MTERUP provides support for the various peripheral devices used for transmitting or receiving data. Although an MTERUP processor is used primarily to communicate with DASP central, it can be used to communicate with another processor also running MTERUP.

Description	Model code	Media charge*
MTE55 1.2	50356	User's Guide - \$2.00
	20491	3 Cassettes*
	20492	2 Diskettes*
	40322	1 DDD*
MTEIBM 1.2	50357	User's Guide - \$2.50
	20493	1 Cassette
	20494	1 Diskette
	40323	1 DDD
MTEHASP 1.2	50375	User's Guide - \$2.00
	20511	1 Cassette
	20512	1 Diskette
	40343	1 DDD
MTECDC 1.2	50358	User's Guide - \$1.50
	20495	1 Cassette
	20496	1 Diskette
	40324	1 DDD
MTEGRTS 1.2	50359	User's Guide - \$2.00
	20497	1 Cassette
	20498	1 Diskette
	40325	1 DDD
MTERUP 1.2	50435	User's Guide - \$2.00
	20589	1 Cassette
	20590	1 Diskette

#### \*Media charges:

1 Cassette -- \$15.00    1 Diskette -- \$15.00  
 1 DDD - Double Density Diskette -- \$15.00

# Telecommunications glossary

**CBS** — USOC (Uniform Service Order Code) designation for Automatic Data Coupler with a voltage interface equivalent to Bell 1001A or 1001F.

**CBT** — USOC designation for Automatic Data Coupler with dry contact interface equivalent to Bell 1001B or 1001D.

**CDT** — USOC designation for Manual Data Coupler equivalent to Bell 1000A.

**CPE** — Customer provided equipment.

**Coupler** — Device to connect foreign equipment to telephone line (DAA, RPC, and others).

**DAA** — Data Access Arrangement (telephone company terminology for coupler).

**DCE** — Data Communications Equipment.

**DTE** — Data Terminal Equipment.

**Equivalence** — see Ringer Equivalence.

**Exclusion Key** — White button on telephone which allows transfer between voice and data modes.

**FCC** — Federal Communications Commission.

**Foreign** — Not owned or supplied by the telephone company.

**Multipurpose Telephone** — Model 502 or 2502 telephone which has an exclusion key.

**Part 68** — Part 68 of the FCC Rules and Regulations which covers attachment of foreign devices to the telephone network

**Programmable RPC** — Telephone company determines the loss on the line between customer and central office and indicates this loss with a programming resistor installed in the RJ45S jack. The programmable RPC senses the value of this resistor and determines the maximum allowable amplitude of the data signal. This is the most versatile type of RPC.

**Ringer Equivalence** — A normal telephone is used as a standard of one bell. Any device attached to the phone line must be listed as to its proportionate loading of the line, i.e., if it loads the line like one-half of a telephone, its ringer equivalence would be 0.5B.

**RJ36X** — USOC designation for 6-pin telephone jack.

**RJ45S** — USOC designator for 8-Pin jack from phone line.

**RPC** — Registered Protective Circuitry (FCC terminology for coupler).

**RTC** — Exclusion key telephone.

**Telco** — Telephone Company.

**USOC** — Uniform Service Order Code (telephone company ordering information).

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## Enhanced 1500 DATABUS Compiler

A new version of DBCMP15, based on the DATABUS compiler DBCMPLUS, is now available for Datapoint's 1500 Dispersed Processor. DBCMP15 Version 2 is much faster and requires far less diskette space than previous versions of this compiler.

### Faster compiling

The new DBCMP15 will configure itself for the 32K or 60K memory capacities, or for a 60K system running a concurrent job. The new version compiles more rapidly than the old compiler:

- The 32K system running DBCMP15, with no concurrent job operating, will compile up to five times faster with Version 2.
- The 60K system running DBCMP15 Version 2, with no concurrent job, will operate up to 30 times faster than the old version.
- The 60K system running a job concurrently with DBCMP15 will operate between five and 30 times faster using the new version. The compile time is dependent on the task being run concurrently.

Consideration should still be given to placement of files on the diskettes to achieve maximum compilation speed from the new version.

### Other important features

- DBCMP15 Version 2 requires less than half the diskette space used by previous versions.
- The compiler will not require work files on a 60K system except for very large programs (in excess of 855 labels).
- The 32K system has space for about 165 labels in memory. More than this will probably cause a work file to be created on the diskette, thus lengthening compile time.

**DBCMP15 Version 2.1 - User's Guide** — Document No. 50302

1 Diskette — Model Code 40273, \$15.00

# System releases

<i>Name release date</i>	<i>Description</i>	<i>Purpose</i>	<i>Release items</i>	
			<i>Model</i>	<i>Media cost</i>
COBOL001-005 1.4 <i>Released 20 Apr 79</i>	ANSICOBOL consists of the following Datapoint released programs:  DOS           Appropriate Disk Operating System  COBOL 2.2   ANSI COBOL Compiler LIBSYS 1.3   System Library Maintenance Util.  LIB 3.1       Library Maint. Utility LINK 2.2      Linkage Editor for Relocatable Modules  /RFM          Appropriate Release Form Print Files	Corrects problems cancels COBOL 1.3	9802	*** 1 2.5MB Disk 1 10MB Disk 1 25MB Disk 1 60MB Disk 3 Double Density Diskettes
RPGPLUS1-5 1.2 <i>Released 9 Jul 79</i>	RPGPLUS is a version of RPGII tailored to use the features of the 5500- type processor. Programs using this system will compile and execute significantly faster than those produced by RPG II. Version 1.2 includes DOS and RPGPLUS 1.5, and consists of the following Datapoint released programs: RPGPLUS   RPGPLUS Compiler 1.5 DOS           Appropriate Disk Operating System  LIBSYS 1.3   System Library Maintenance Utility  LINK 2.2      Linkage Editor for Relocatable Modules  RPGPREP     RPG Preparation Program 2.6 /RFM          Appropriate Release Form Print Files	Corrects problems cancels RPGPLUS 1.1	9803	**** 1 2.5MB Disk 1 10MB Disk 1 25MB Disk 1 60MB Disk 3 Double Density Diskettes

*Media Charges -- 1 Cassette - \$15.00*

*1 Diskette - \$15.00*

*1 Double Diskette - \$15.00*

\*\*\* See page 2 for media charges   *Monthly maintenance - \$20 (mandatory)*

\*\*\*\* See page 2 for media charges   *Monthly maintenance - \$15 (mandatory)*

## Program releases

<i>Name release date</i>	<i>Description</i>	<i>Purpose</i>	<i>Release items</i>	
			<i>Model</i>	<i>Media cost</i>
ARCOPY 1.2 <i>Released 6 Jun 79</i>	ARCOPY is a bidirectional file transfer utility for use between ARC and a local (off-line) DOS. ARCOPY gives the user the option to selectively update an existing file or create a new file. It cannot transfer ISAM files (files with an ISI extension).	Adds new features	50396** 20553	User's Guide \$1.00 1 Cassette
MLTC3500 1.3 <i>Released 25 Jun 79</i>	This is a MULTILINK line driver for communicating interactively with a Burroughs mainframe. MLTC3500 configurable for either synchronous or asynchronous operation.	Corrects problems cancels MLTC3500 1.2	50281** 20400 20402	User's Guide \$1.50 1 Cassette 1 Diskette
DCIOV1 2.1 <i>Released 11 Jul 79</i>	The Direct Channel Interface Option is a Channel Adapter software product which provides IBM 360/370 users with high-speed access to Datapoint disk files under mainframe applications program control.	Adds new features cancels DCIOV1 1.1	50379 9806	User's Guide \$1.75 1 Cassette ***
CHAINPLS 2.1 <i>Released 7 Jul 79</i>	This program chaining utility allows jobs to be queued and program questions automatically answered which normally would require constant console attention and manual command entering. CHAINPLS is compatible with CHAIN but provides greatly extended compilation and execution capabilities.	Corrects problems cancels CHAINPLS 1.1	50386 20531 20532 40352	User's Guide \$4.75 1 Cassette 1 Diskette 1 DDD
RPGPLUS 1.5 <i>Released 12 Jun 79</i>	The RPGPLUS compiler is tailored especially for 5500 and 6600 processors. Programs run under this system will compile and execute significantly faster than those produced by RPGII.	Corrects problems cancels RPGPLUS 1.4	50325** 9803	User's Guide \$18.50 **** 1 2.5MB Disk 1 10MB Disk 1 25MB Disk 1 60MB Disk 2 Double Density Diskette
DBCPLUS 2.1 <i>Released 10 Jul 79</i>	DBCPLUS is a very rapid DATABUS compiler which will run on any Datapoint processor with the 5500 instruction set and at least 24K bytes of user memory.	Adds new features cancels DBCPLUS 1.1	50321 20458 20459 40331	User's Guide \$15.00 1 Cassette 1 Diskette 1 DDD
DCTAPE 2.1 <i>Released 12 Jun 79</i>	DCTAPE magnetic tape utility is used for data exchange between tape and disk, or for storage of on-line data.	Corrects problems cancels DCTAPE 1.1	50293 20419 20420 40344	User's Guide \$2.25 2 Cassettes 1 Diskette 1 DDD

*Media Charges -- 1 Cassette - \$15.00*

*1 Diskette - \$15.00*

*1 Double Diskette - \$15.00*

\*\* *Previously released*

\*\*\* *See page 2 for media charges Monthly maintenance - \$20 (mandatory)*

\*\*\*\* *See page 2 for media charges Monthly maintenance - \$15 (mandatory)*

*continued next page*

<i>Name release date</i>	<i>Description</i>	<i>Purpose</i>	<i>Release items</i>	
			<i>Model</i>	<i>Media cost</i>
HASP20 4.1 <i>Released 27 Jun 79</i>	This emulator for the HASP20 workstation is compatible with the HASP multi-leaving communications technique used to transfer data between a HASP central site and a remote intelligent terminal.	Corrects problems cancels HASP20 3.3	50064  20105	User's Guide \$3.75 1 Cassette
ML3780 2.2 <i>Released 1 May 79</i>	ML3780 is a line driver for MULTILINK which emulates an IBM3780 communications interface.	Corrects problems cancels ML3780 2.1	50338**  20469 20470	User's Guide \$3.00 1 Cassette 1 Diskette
LIBSYS15 1.3 <i>Released 3 Jun 79</i>	1500 System Library Maintenance Utility is a multifunction librarian for use in maintenance of library type files.	Corrects problems cancels LIBSYS15 1.2	50303**  40274	User's Guide \$3.00 1 Diskette
COBOL 2.2 <i>Released 20 Apr 79</i>	Datapoint's ANSI COBOL compiler for 1800, 3800, 5500, and 6600 processors.	Corrects problems cancels COBOL 2.1 2.1.1, 2.1.2, 1.6	50233**  9802	User's Guide \$20.00 ***
DPSMTS 3.2 <i>Released 12 Jun 79</i>	DPSMTS is a slave station for magnetic tape systems in the synchronous DATAPOLL communication series. DPSMTS can be used to communicate with cassette, magnetic tape, or disk master programs. DPSMTS can also receive data and route it directly to an on-line printer, or the master station can instruct DPSMTS to print the received data off-line.	Corrects problems	50322**  50203**  20454 20455	User's Guide \$ .25 System's Guide \$4.00 1 Cassette 1 Diskette
DPMSP 2.2 <i>Released 12 Jun 79</i>	The DATAPOLL manual spooling program is a stand-alone program which can be used for spooling from magnetic tape to cassette or from cassette to magnetic tape.	Corrects problems cancels DPMSP 2.1	50195**  50196**  20274	User's Guide \$2.00 Systems Guide \$2.50 1 Cassette
DPDSP55 3.1 <i>Released 13 Jul 79</i>	DPDSP55 is a slave station for disk systems in the DATAPOLL asynchronous communications series. It operates automatically in an unattended mode and can be used to communicate with cassette, magnetic tape, or disk master programs. Data can be received to an on-line printer or the master station can instruct DPDSP55 to print the received data off-line.	New software package cancels DPDSP18 3.1	50453  50196**  20618 20619 40406	User's Guide \$1.00 Systems Guide \$2.50 1 Cassette 1 Diskette 1 DDD
DPSDSP55 3.1 <i>Released 13 Jul 79</i>	DPSDSP55 is the same as DPDSP55 (above) but is for systems using synchronous communications.	New software package cancels DPSDSP18 3.1	50452  50203**  20611 20612 40405	User's Guide \$1.00 System's Guide \$4.00 1 Cassette 1 Diskette 1 DDD

*Media Charges -- 1 Cassette - \$15.00*

*1 Diskette - \$15.00*

*1 Double Diskette - \$15.00*

*\*\*Previously released*

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<i>Name release date</i>	<i>Description</i>	<i>Purpose</i>	<i>Release items</i>	
			<i>Model</i>	<i>Media cost</i>
DPDMP55 3.1 <i>Released 12 Jul 79</i>	DPDMP55 is a master station for disk systems in the DATAPOLL asynchronous communications series. DPDMP55 can be used to collect and distribute data to slave stations equipped with cassettes or disk.	New software package cancels DPDMP18 3.1	50456 50196** 20622 20623 40408	User's Guide \$1.50 System's Guide \$2.50 1 Cassette 1 Diskette 1 DDD
DPSDMP55 3.1 <i>Released 12 Jul 79</i>	This is the same as DPDMP55 (above) but is for systems using synchronous communications.	New software package cancels DPSDMP18 3.1	50451 50203** 20609 20610 40404	User's Guide \$1.50 System's Guide \$4.00 1 Cassette 1 Diskette 1 DDD
CHARLD82 1.1 <i>Released 30 Jul 79</i>	International character set generator for the 8200 terminal. The DATABUS program to down-line load the generated character set is DATASHARE 4 2200-compatible.	New software package	50457 20626 20627 40409	User's Guide \$1.00 1 Cassette 1 Diskette 1 DDD
LIBSYS 2.1 <i>Released 9 Aug 79</i>	LIBSYS is a multifunction librarian used in creation and maintenance of DOS system libraries.	Adds new features cancels LIBSYS 1.3	50273 20391 20392 40329	User's Guide \$1.75 1 Cassette 1 Diskette 1 DDD
MTE 2.1 <i>Released 8 Jun 79</i>	This is the multiple terminal emulator command handler for use on the 1130 & 2200 processors. It will support the following emulators: MTEIBM2           2.1 MTECDC2           2.1 MTEHASP2          2.1	Corrects problems cancels MTE 1.2	50257 20369 20370	User's Guide \$4.50 3 Cassettes 2 Diskettes
MTEIBM2 2.1 <i>Released 8 Jun 79</i>	This is the emulator package for IBM 2780, 3780, 2770 and 3770 terminals to be used with MTE 2.1.	New software package	50436 20591 20592	User's Guide \$2.50 1 Cassette 1 Diskette
MTECDC2 2.1 <i>Released 8 Jun 79</i>	This is the CDC UI200 terminal emulator for use with MTE 2.1.	New software package	50437 20593 20594	User's Guide \$2.00 1 Cassette 1 Diskette
MTEHASP2 2.1 <i>Released 8 Jun 79</i>	This is the HASP & RES workstation emulator for use with MTE 2.1.	New software package	50443 20597 20598	User's Guide \$2.50 1 Cassette 1 Diskette
DS5 2.1.1 <i>Released 13 Aug 79</i>	This maintenance release for DATASHARE V Version 2 updates files DS5/TXT and DS5/RFM. All existing DS5 V2 interpreters must be re-linked using DS5/TXT.	Corrects problems no software cancelled	20630 20631 40410	1 Cassette 1 Diskette 1 DDD

*Media Charges -- 1 Cassette - \$15.00      1 Diskette - \$15.00      1 Double Diskette - \$15.00*

*\*\*Previously released*

## Diagnostic program releases

<i>Name release date</i>	<i>Description</i>	<i>Purpose</i>	<i>Release items</i>	
			<i>Model</i>	<i>Media cost</i>
UNITAP 1.2 <i>Released 29 May 79</i>	Magnetic tape diagnostic.	Corrects problems cancels UNITAP 1.1	50381 ** 20525 20561	User's Guide \$3.00 1 Cassette 1 Diskette
KDTEST 1.2 <i>Released 5 Jul 79</i>	Keyboard and display test.	Adds new features cancels KDTEST 1.1	50422 20575 20606	User's Guide \$1.00 1 Cassette 1 Diskette
DIAG1500 1.2 <i>Released 28 May 79</i>	1500 diagnostic test.	Corrects problems cancels DIAG1500 1.1	50374 20510	User's Guide \$1.50 Diskette
COM202 1.1 <i>Released 16 Feb 79</i>	9402 modem communications test.	New software package	50408 20564 20565	User's Guide \$1.25 1 Cassette 1 Diskette
COM103 1.1 <i>Released 30 Mar 79</i>	Communications diagnostic for 9401 modem, or for Bell 103 modem (or equivalent) interfaced through a 9400 asynchronous communications adaptor.	New software package	50409 20566 20567	User's Guide \$1.25 1 Cassette 1 Diskette
ARCSTAT 2.1 <i>Released 18 May 79</i>	ARC system statistical package. (See detailed description in Issue 2.)	Adds new features cancels ARCSTAT 1.1	50383 20527	User's Guide \$2.00 1 Cassette
LPTEST 1.1 <i>Released 1 Apr 79</i>	Belt and drum printer diagnostic.	New software package	50425 20578 20579 40392	User's Guide \$1.50 1 Cassette 1 Diskette 1 DDD
EXTP1800 1.1 <i>Released 28 May 79</i>	1800/3800 magnetic tape exerciser.	New software package	50421 20573 40389	User's Guide \$2.50 1 Cassette 1 DDD
DISK1800 1.2 <i>Released 20 Mar 79</i>	Diagnostic for the 1800 diskette.	Corrects problems cancels DISK1800 1.1	50390 20536 40356	User's Guide \$1.50 1 Cassette 1 DDD

*Media Charges -- 1 Cassette - \$15.00*

*1 Diskette - \$15.00*

*1 Double Diskette - \$15.00*

*\*\*Previously released*

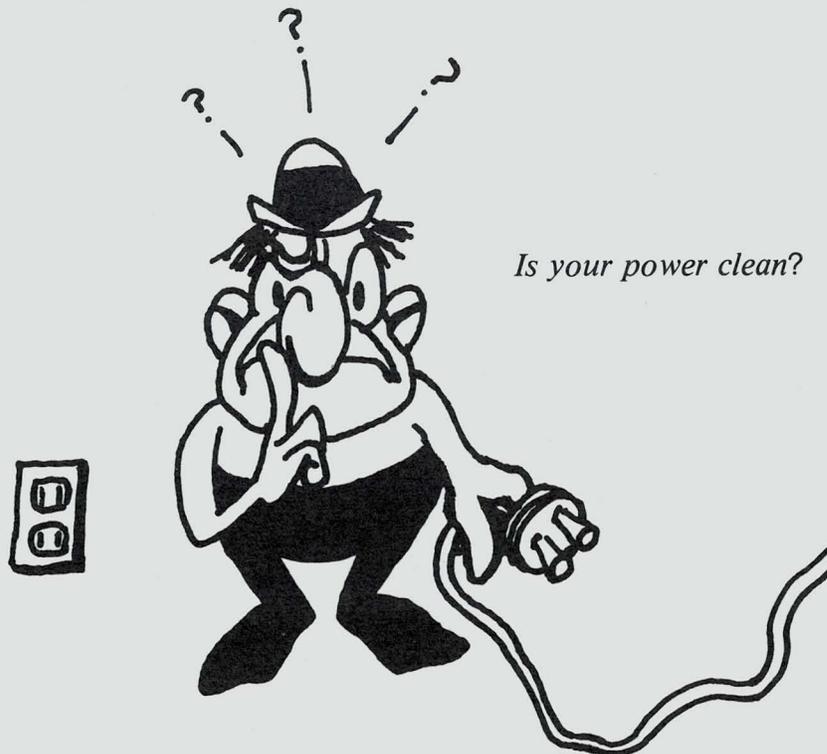
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<i>Name release date</i>	<i>Description</i>	<i>Purpose</i>	<i>Release items</i>	
			<i>Model</i>	<i>Media cost</i>
TST6600D 1.1 <i>Released 10 Jul 79</i>	6600 processor diagnostic which will test the processor's instruction set and memory.	New software package	50427 20580	User's Guide \$ .50 1 Cassette
FPTST 2.1 <i>Released 19 Jul 79</i>	Freedom Printer and 160 CPS Matrix Printer diagnostic.	Adds new features cancels FPTST 1.1	50254 20358 20588 40400	User's Guide \$1.00 1 Cassette 1 Diskette 1 DDD
TSTSP 1.2 <i>Released 24 May 79</i>	Servo Printer diagnostic.	Corrects problems cancels TSTSP 1.1	50112-01 20143 20191 40407	User's Guide \$2.00 1 Cassette 1 Diskette 1 DDD

*Media Charges -- 1 Cassette - \$15.00*

*1 Diskette - \$15.00*

*1 Double Diskette - \$15.00*



DATAPOINT CORPORATION



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