HEWLETT-PACKARD SOFTWARE CENTER

PROGRAM CATALOG

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HP 5950-9226

HP Computer Museum
www.hpmuseum.net

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CONTENTS

INTRODUCTION

The Hewlett-Packard Software Center maintains an inventory of software for HP computer users. Source and binary tapes, listing and documentation for these programs can be ordered using this catalog.

The catalog has 3 parts:

I The software abstracts
II The option and price list
III The cross-reference index

The abstracts are grouped into general classifications; an index to these classifications appears at the beginning of the abstracts.

The option and price list gives ordering numbers and price for each of the several options which may be ordered for each program. Ordering information and an explanation of the option codes appear below.

The cross-reference index is an alphabetic list of words or phrases related to computer software. Each program in the catalog is listed under all words or phrases that apply to it.

The option and price list contains the prices of each option available for the software products described in the catalog. The entries are arranged by product number, the five-digit number following the three-digit classification code used to group the abstracts. The option codes consist of a letter followed by two digits. The letter indicates the form of the option and the digits indicate the medium.

Form

-A- total binary, source and listing
-B- total binary
-D- documentation (descriptive material, operating procedures, etc.)
-S- total source
-L- total listing
-K- total source and documentation (contributed software)

Medium

-00- printed material
-01- perforated paper tape
-02- perforated metal mylar tape
-11- punched mark sense cards
-20- 7 track magnetic tape
-21- 9 track magnetic tape

For example the following entry in the option list:

D00 - $ 2

would indicate printed documentation available for a cost of two dollars. Documentation is made available separately so that the user may examine it to see if the program fits his needs before he orders software.

The option code:

A02 - $ 20

would indicate total binary and source software on perforated metal mylar tape together with a listing available at a cost of twenty dollars.

When ordering the various options, the product number (the five-digit number) as well as the option code and price should be given. If the following entry appeared in the price and option list:

```
20548A
      FORTRAN COMPILER
      B01  $  25
      B02     45
      S01    240
      S02    390
      L00     30
      A01    295
      A02    465
      D00      2.50
```

and it was desired to order the binary programs on paper tape plus the listing, the following information should appear in the order:

```
20548A   B01   $25
20548A   L00   $30
```

Purchase orders should be sent to your local Hewlett-Packard office. Shipments will normally be made by Air Parcel Post.

Note RTF = Real Time Exec
DOS = Disc plus Sys
SIO = System ? Input Output

SECTION I
THE SOFTWARE ABSTRACTS

The following abstracts are arranged by the three-digit classification numbers that precede the five-digit product numbers. Each abstract contains a brief description of the program and describes the hardware and any other software required. If a more complete description of the program is desired, full documentation can be ordered (option D00 in the price list). The source language of the software is listed at the end of each abstract. On the contributed programs the source language is followed by two numbers in parenthesis. The first is the decimal number of words of core stroage used by the program; the second number gives total storage used by the program, together with all supporting software.

A002-20017B

BCS TTY DRIVER D.00

This driver processes requests for input from or output to the teleprinter under interrupt control. It is used with 2114-15-16. The 12531B Interface Kit and the HP2752A or 2754A/B Teleprinter are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A002-20322A

4K SIO TTY DRIVER

This driver processes requests for input from or output to teleprinter. It is used with 2114-15-16 of memory size 4K. It requires 12531B Interface Kit and HP2752A (ASR-33) or HP2754A/B (ASR-35) teleprinter.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A002-20323A

8K SIO TTY DRIVER

This driver processes requests for input from or output to the teleprinter. It is used with the 2114-15-16 of memory size 8K. It requires the 12531B Interface Kit and the HP2752A (ASR-33) or the HP2754A/B (ASR-35) teleprinter.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A002-20329A

12K SIO TTY DRIVER

This driver processes requests for input from or output to the teleprinter. It is used with the 2114-15-16 of memory size 12K. It requires the 12531B Interface Kit and the HP2752A (ASR-33) or the HP2754A/B (ASR-35) teleprinter.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A002-20330B

16K SIO TTY DRIVER

This driver processes requests for input from or output to teleprinter. It requires the 12531B Interface Kit and the HP2752A (ASR-33) or the HP2754A/B (ASR-35) teleprinter.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A002-20741B

RTE TELEPRINTER DRIVER (DVR00)

This RTE driver processes requests for teleprinter input or output. It requires the 12531B Interface Kit and the HP2752A or HP2754A/B teleprinter.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A002-20985A

DOS TELEPRINTER DRIVER (DVR00)

This DOS driver processes requests for teleprinter input or output. It requires the 12531B Interface Kit and the HP2752A or HP2754A/B teleprinter.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A002-24123A

4K SIO TELEPRINTER DRIVER (LP-COMPAT)

This SIO driver processes requests for input from or output to the teleprinter. It is for systems with 4K of core storage and it requires the 12531B Interface Kit and the HP2752A or the HP2754A/B teleprinter. It may be used with the line printer driver and still allow teleprinter keyboard input.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A002-24125A

8K SIO TELEPRINTER DRIVER (LP-COMPAT)

This SIO driver processes requests for input from or output to the teleprinter. It is for systems with 8K of storage and it requires the 12531B Interface Kit and the HP2752A or the HP2754A/B teleprinter. It may be used with the line printer driver and still allow teleprinter keyboard input.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A002-24127A

16K SIO TELEPRINTER DRIVER (LP-COMPAT)

This SIO driver processes requests for input from or output to the teleprinter. It is for systems with 16K of core storage and it requires the 12531B Interface Kit and the HP2752A or the HP2754A/B teleprinter. It may be used with the line printer driver and still allow teleprinter keyboard input.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A003-22002A

TIME-OF-DAY CLOCK

Subroutine entry points are provided to: initialize time of day, read current time of day in hours, minutes and seconds, set and read an elapsed timer. Time Base Generator HP12539A is required. FORTRAN-callable.

ASSEMBLY LANGUAGE (203) (1560)

CONTRIBUTED

A003-22170A

SYNCHRONOUS HIGH SPEED DATA ACQUISITION PROGRAM

This program demonstrates throughput rates of up to 137K words per second using an HP 2116 computer with DMA and any synchronous input device. Output is to an HP 2770A Disc.

ASSEMBLY LANGUAGE (116) (116)

CONTRIBUTED
Vittorio Baldini
HP, Italy/Milan

A006-20008B

BCS 8-4-2-1 DSI DRIVER D.40

This driver processes requests for input from measuring equipment which interfaces with 562A or 5050B printer. Used with 2114-15-16; not under interrupt control. 12604A Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20009B

BCS DVM PROGRAM DRIVER D.41

This driver processes write requests for the digital voltmeter; not under interrupt control. Used with 2114-15-16. Operates with the following interface kits and peripheral devices:

INTERFACE KIT	DEVICE
12533A	HP2401C Integrating Digital Voltmeter
12534A	HP3460A Digital Voltmeter
12567A	HP2402A Integrating Digital
12535A	Voltmeter plus HP2911 Guarded Crossbar Scanner

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20010C

BCS 8-4-2-1 SCNR CONTROL DRIVER

This driver processes write requests for programming the 2911A Crossbar Scanner; not under interrupt control. Used with 2114-15-16. Requires 12535A Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20011B

BCS (4221/8421) DSI DRIVER D.40A

This BCS driver processes requests for input from measuring equipment such as the 2401C, 2402A DVM. Will accept 8421 or 4221 BCD coded information. Used with 2114A/B, 2115A, 2116A/B under interrupt control. 12604B Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20012C

BCS (8421/4221) SCNR CONTROL DRIVER D.42A

This BCS driver processes output requests to program the 2911B Guarded Crossbar Scanner control. Can operate with 8421 or 4221 BCD coded information. It is used with the 2114A/b, 2115A, 2116A/B, 12535 I/O Kit

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20024A

BCS DVM PROGRAM DRIVER D.41B

This driver programs the 2402A (option 1) DVM through the 12576B (option 11) I/O card. It will accept write or clear requests only. Not under interrupt control, it uses 2114A/B, 2115A, 2116A/B, 12576B.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20025A

BCS 2912 SCANNER CONTROL DRIVER D.42B

This drives the 2912 scanner via the 12576 interface which includes flag circuitry. This is a non-interrupt BCS driver which waits for the flag before exiting.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20028A

BCS 2323A SUBSYSTEM DRVR ANALOG SCAN SCN-12, D.77

This is for use with the 2323A Subsystem (2912A Scanner, 2402A Digital Voltmeter). This is an external driver with entry points SCNR (random scan), SCNBL (block scan), SCNCL (clear), and D.77 (initiator). For maximum system efficiency, the driver has one interrupt entry for each I/O card in the subsystem. 2114A/B, 2115, 2116A/B.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20094A

MULTI/MINIVERTER SCAN ROUTINE SCNMV, D.76

D.76 is an external BCS driver for use with the 2310A/B/C Subsystems. This is the high speed equivalent of D.77 and will operate only one subsystem within a specific environment. Entry points are MVRAN (random channels scanned), MVBLK (consecutive scan), and MVMON (single channel monitor).

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20098B

BCS 40-BIT OUTPUT REGISTER DRIVER D.54

This driver processes requests for outputs to peripheral devices controlled by the 12556B 40-Bit Register. Accepts either binary or formatted calls from FORTRAN or ALGOL. Uses 12556B I/O kit. Useful with 5050A/B printer or 2759A Synthesizer programmer.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20235A

RTE 2323A SUBSYSTEM DRIVER DVR77

DVR77 interfaces the 2323A Subsystem (2402 DVM 2912/ Reed Scanner) to the 2005A RTE. A single request programs one channel on the scanner and the DVM, and returns the voltmeter reading in two-word BCD format.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20236A

RTE 2320A/2322A SUBSYSTEM DRIVER DVR76

This driver interfaces the 2320A (2402A/2911A) and/or the 2322A (2401C/2911A) Subsystems to RTE 2005A. Calls from FORTRAN or Assembly: (1) program the subsystem, (2) take one 32-bit reading, (3) return reading in BCD form (use 20288A to convert to floating point).

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20295A

RTE 12604B DSI DRIVER DVR40

DVR40 interfaces one or more 12604B Data Source Interface Cards to RTE 2005A. A simple READ (binary) call from FORTRAN or Assembly Language encodes one DSI and takes one 32-bit reading.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20501D

SCN: ANALOG SCAN ROUTINE (8421)

This is an external driver designed to simplify data acquisition under interrupt control. The driver has entry point D.77 and contains block scan, random scan, and clear routines. For use with 8421 coded instruments. Individual instrument drivers not required. Used with 2320A, 2322A Subsystem.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20517B

SCN: ANALOG SCAN ROUTINE (4221)

This is an external driver designed to simplify data acquisition under interrupt control. The driver has entry point D.77 and contains block scan, random scan, and clear routines. For use with 4221 coded instruments. Individual instrument drivers are not required. (2911A/B and 2401C only).

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-20532A

2321 SUBSYSTEM (3450/2911) SCAN ROUTINE SCN34

Designed to simplify data acquisition operations under interrupt control. Has entry point D.77 and contains routines for block scan, random scan, and clear. The individual instrument drivers are not required when this program is used. Uses 2114A/B, 2115A, 2116A/B, 2321A.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A006-22001A

HP2911A/B CROSSBAR SCANNER DRIVER - FTN-CALL

This relocatable subroutine converts the specified channel number from integer to BCD, programs the scanner for the desired channel, delay and function, and then returns to the calling program. If a calling parameter is incorrect, the driver returns with an error indication. Requires HP2911A/B Crossbar Scanner and HP12535A Scanner Programming Interface Kit.

ASSEMBLY LANGUAGE (58) (90)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22003A

HP2402A DIGITAL VOLTMETER DRIVER - FTN-CALL

This relocatable subroutine outputs a control word that programs the DVM for the desired range, function and mode; then it waits about five milliseconds for the DVM to respond. After that it sends an encode command to begin a measurement and waits until the measurement is complete. The driver then inputs the BCD reading, converts it to floating point, and returns it to the calling program. If an overload occurs or a measurement is not completed within ten seconds, the driver returns with an error indication. Requires HP2402A DVM, HP12567A DVM Programming Interface Kit, and HP12604B or HP12541A Data Source Interface Kit.

ASSEMBLY LANGUAGE (170) (540)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22004A

COUNTER DATA SOURCE INTERFACE DRIVER - FTN-CALL

This relocatable subroutine removes the holdoff from the counter and waits until it completes the measurement. The driver then inputs the BCD reading, converts it to floating point and returns it to the calling program. If the measurement is not completed within fifteen seconds, the driver returns with an error indication. Requires HP5-8 Digit Electronic Counter, HP12604B, HP12544A, HP12545A, HP12546A or HP12547A Data Source Interface Kit.

ASSEMBLY LANGUAGE (96) (393)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22005A

HP2401C DIGITAL VOLTMETER DRIVER - FTN-CALL

This relocatable subroutine outputs a control word that programs the DVM for the desired range, function and sample period; then it removes the holdoff and waits until the measurement is completed. The driver then inputs the BCD reading, converts it to floating point, and returns it to the calling program. If a measurement is not completed within ten seconds or if an overload occurs, the driver returns with an error indication. Requires the HP2401C DVM HP12533A DVM Programming Interface Kit, and HP12604B or HP12541A Data Source Interface Kit.

ASSEMBLY LANGUAGE (156) (526)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22006A

HP2401C DATA SOURCE INTERFACE DRIVER - FTN-CALL

This relocatable subroutine removes the holdoff from the DVM and waits until the measurement is completed. The driver then inputs the BCD reading, converts it to floating point and returns it, and the function code (integer value) to the calling program. If the DVM is overloaded or the measurement is not completed within ten seconds, the driver returns with an error indication. Requires HP2401C Digital Voltmeter and HP12541A Data Source Interface Kit.

ASSEMBLY LANGUAGE (149) (519)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22007A

HP3440A DATA SOURCE INTERFACE DRIVER - FTN-CALL

This relocatable subroutine removes the holdoff from the DVM and waits until the measurement is completed. The driver then inputs the BCD reading, converts it to floating point and returns it and the function code (integer value) to the calling program. If the DVM is overloaded or a measurement is not completed within ten seconds, the driver returns with an error indication. Requires HP3440A DVM, and HP12604B or HP12541A Data Source Interface Kit.

ASSEMBLY LANGUAGE (136) (406)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22008A

HP3460A DIGITAL VOLTMETER DRIVER - FTN-CALL

This relocatable subroutine outputs a control word to program the DVM for the desired range, function and gate time; then it removes the holdoff, sends an encode command and waits until the measurement is completed. Then the driver inputs the BCD reading, converts it to floating point and returns it to the calling program. If an overload occurs or a measurement is not completed within ten seconds, the driver returns with an error indication. Requires HP3460A DVM, HP12534A DVM Programming Interface Kit, and HP12604B or HP12541A Data Source Interface Kit.

ASSEMBLY LANGUAGE (157) (527)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22048A

HP2402A DATA SOURCE INTERFACE DRIVER - FTN-CALL

This relocatable subroutine sends an encode command to the DVM and waits until the measurement is completed. The driver then inputs the BCD reading, converts it to floating point, and returns it with the function code (integer) to the calling program. If an overload occurs or a measurement is not completed within ten seconds, the driver returns with an error indication. Requires HP2402A DVM, and HP12604B or HP12541A Data Source Interface Kit.

ASSEMBLY LANGUAGE (152) (522)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22053A

HP3450A DATA SOURCE INTERFACE DRIVER - FTN-CALL

This relocatable subroutine sends an encode command to the DVM and waits until the measurement is completed. The driver inputs the BCD reading, converts it to floating point, and returns it with the function code (integer) to the calling program. If an overload occurs or the measurement is not completed within ten seconds, the driver returns with an error indication. Requires HP3450A Multifunction Meter and HP12604B Data Source Interface Kit.

ASSEMBLY LANGUAGE (153) (524)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22055A

HP3460A/B DATA SOURCE INTERFACE DRIVER - FTN-CALL

This relocatable subroutine removes the holdoff from the DVM and waits until the measurement is completed. Then the driver inputs the BCD reading, converts it to floating point, and returns it with the function code (integer) to the calling program. If an overload occurs or the measurement is not completed within ten seconds, the driver returns with an error indication. Requires HP3460A/B DVM and HP12604B or HP12541A Data Source Interface Kit.

ASSEMBLY LANGUAGE (150) (520)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22057A

HP2801A DATA SOURCE INTERFACE DRIVER

This relocatable subroutine removes the holdoff from the DVM and waits until the measurement is completed. Then the driver inputs the BCD reading, converts it to floating point, and returns it with the measuring mode (integer) to the calling program. If the measurement is not completed within fifteen seconds, the driver returns with an error indication. Requires HP2801A Quartz Thermometer and HP12604B or HP12544A Data Source Interface Kit.

ASSEMBLY LANGUAGE (117) (487)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22059A

HP2912A REED SCANNER DRIVER - FTN-CALL

This routine converts an integer channel parameter to BCD and programs the scanner for channel and delay. Error indication is provided. Requires HP12576B Program Card.

ASSEMBLY LANGUAGE (77) (109)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22066A

HP6130B DIGITAL VOLTAGE SOURCE DRIVER - FTN-CALL

This routine converts the voltage from a floating point to a binary number and selects the specified power supply and current limit. Error indications are provided. Requires HP12661A DVS Interface Kit and HP14593A Interconnecting Cable.

ASSEMBLY LANGUAGE (121) (458)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22067A

HP6130B DIGITAL VOLTAGE SOURCE DRIVER - BASIC-CALL

This driver converts the Voltage Source number and current limit, supplied by the calling program, from floating point to integer, then converts the voltage word from floating point to binary. After checking validity, the driver passes the data to the Voltage Source. If the Voltage Source responds within .3 seconds and all parameters have been specified correctly, the driver returns to the calling program with Voltage Source status. If the response is delayed beyond this time limit or if any error occurs, the driver returns with the error indication. This driver can also determine status of the Voltage Source without calling for a voltage.

ASSEMBLY LANGUAGE (166) (166)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22068A

HP3450A DIGITAL VOLTMETER DRIVER - FTN-CALL

This routine uses the information in the program control word to program the digital voltmeter to the proper range, function, and mode. The measurement is returned as a floating point number. Error indication is provided for the improper parameters, failure to respond or overload. Requires HP12554A-22 Duplex Register Interface Kit and HP12604B Data Source Interface Kit.

ASSEMBLY LANGUAGE

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22069A

HP2323A LOW SPEED ANALOG-TO-DIGITAL SUBSYSTEM DVR

This FORTRAN-callable routine converts the channel number to BCD and activates the scanner. It then programs the digital voltmeter with the converted range, function and mode parameters; the reading is returned as a floating point number. Error indication is provided.

ASSEMBLY LANGUAGE (222) (518)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22071A

HP12539A TIME BASE GENERATOR DRIVER - FTN-CALL

This routine allows the programmer to set a time-of-day clock in hours, minutes and seconds. The routine will set the time base generator to interrupt processing and perform a clock updating routine at regular real-time intervals. Other calls allow the clock to be read and provide for the setting and reading of an independent interval timer.

ASSEMBLY LANGUAGE (101) (133)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22075A

HP5100B FREQUENCY SYNTHESIZER DRIVER - FTN-CALL

This routine takes floating point parameters and provides the Synthesizer Programmer with BCD range and frequency numbers. Error indication is provided if the synthesizer fails to respond or the parameter is out of range. Requires HP2759B Synthesizer Programmer, HP5110B Synthesizer Driver and HP12556B 40-Bit Output Interface Card.

ASSEMBLY LANGUAGE (118) (508)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22076A

HP5105A FREQUENCY SYNTHESIZER DRIVER - FTN-CALL

This driver takes floating point parameters and provides the Synthesizer Programmer with BCD range and frequency numbers. Error indication is provided if the synthesizer fails to respond or if the parameter is out of range. Requires HP2759B Synthesizer Programmer, HP5110B Synthesizer Driver and HP12556B 40-Bit Output Interface Card.

ASSEMBLY LANGUAGE (123) (513)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22101A

HP2911A/B CROSSBAR SCANNER DRIVER - BASIC-CALL

This absolute overlay for the HP24000A BASIC Interpreter converts the channel number from floating point to BCD, programs the scanner for the desired channel, function and delay, and then returns to the calling program. If a calling parameter is incorrectly specified, the driver returns with an error indication. Requires HP2911A/B Crossbar Scanner and HP12535A Scanner Programming Interface Kit.

ASSEMBLY LANGUAGE (102) (102)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22102A

HP3460A/B DATA SOURCE INTERFACE DRIVER - BSC-CALL

This absolute overlay for the HP24000A BASIC Interpreter removes the holdoff from the DVM and waits until the measurement is completed. Then the driver inputs the BCD reading, converts it and the function code into floating point, and returns them to the calling program. If an overload occurs or the measurement is not completed within ten seconds, the driver returns with an error indication. Requires HP3460A/B DVM and HP12604B or HP12541A Data Source Interface Kit.

ASSEMBLY LANGUAGE (175) (175)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22103A

HP2401C DATA SOURCE INTERFACE DRIVER - BASIC-CALL

This absolute overlay for the HP24000A BASIC Interpreter removes the holdoff from the DVM and waits until measurement is completed. The driver then inputs the BCD reading, converts it to floating point and returns it with the function code (integer) to the calling program. If an overload occurs or a measurement is not completed within ten seconds, the driver returns with an error indication. Requires HP2401C DVM and HP12604B or HP12541A Data Source Interface Kit.

ASSEMBLY LANGUAGE (174) (174)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22104A

HP2402A DATA SOURCE INTERFACE DRIVER - BASIC-CALL

This absolute overlay for the HP24000A BASIC Interpreter sends an encode command to the DVM and waits until the measurement is completed. Then the driver inputs the BCD reading, converts it and the function code to floating point and returns them to the calling program. If an overload occurs or the measurement is not completed within ten seconds, the driver returns with an error indication. Requires HP2402A DVM and HP12604B or HP12541A Data Source Interface Kit.

ASSEMBLY LANGUAGE (174) (174)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22106A

COUNTER DATA SOURCE INTERFACE DRIVER-BASIC-CALLABLE

This routine removes the hold-off to permit a measurement and returns the result as a floating point number. Error return is provided if the counter fails to respond. Requires the HP24000A Basic Compiler and HP12604B Data Source Interface Kit.

ASSEMBLY LANGUAGE (104) (104)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22107A

HP2912A REED SCANNER DRIVER - BASIC-CALL

This absolute overlay for the HP24000A BASIC Interpreter converts the specified channel number from floating point to BCD, programs the scanner for the channel and delay, and then returns to the calling program. If the scanner does not respond in two seconds or a calling parameter is incorrect, the driver returns with an error indication. Requires HP2912A Reed Scanner and HP12576B Scanner Programming Interface Kit.

ASSEMBLY LANGUAGE (109) (109)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22108A

HP3450A DATA SOURCE INTERFACE DRIVER - BASIC-CALL

This absolute overlay for the HP24000A BASIC Interpreter sends an encode command to the DVM and waits until the measurement is completed. Then the driver inputs the BCD reading, converts it and the function code into floating point and returns them to the calling program. If an overload occurs or a measurement is not completed in ten seconds, the driver returns with an error indication. Requires HP3450A Multifunction Meter and HP12504B Data Source Interface Kit.

ASSEMBLY LANGUAGE (177) (177)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22109A

HP3440A DATA SOURCE INTERFACE DRIVER - BASIC-CALL

This absolute overlay for the HP24000A BASIC Interpreter removes the holdoff from the DVM and waits until the measurement is completed. The driver then inputs the BCD reading, converts it and the function code into floating point, and returns them to the calling program. If an overload occurs or the measurement is not completed within ten seconds, the driver returns with an error indication. Requires HP3440A Digital Voltmeter and HP12604B Data Source Interface Kit.

ASSEMBLY LANGUAGE (162) (162)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A006-22112A

HP12539A TIME BASE GENERATOR DRIVER - BASIC-CALL

This routine allows the programmer to set a time-of-day clock in hours, minutes,and seconds. The routine will set the time base generator to interrupt processing and perform a clock updating at regular real-time intervals. Other calls allow the clock to be read and provide for the setting and reading of an independent interval timer.

ASSEMBLY LANGUAGE (149) (149)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A007-20000A

INPUT/OUTPUT CONTROL

This is a module of the 2114-15-16 BCS; it interprets an I/O request and directs the request to the proper driver. It services drivers operating in an interrupt mode to allow overlapped I/O and program execution.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A007-20015B

INPUT/OUTPUT CONTROL (BUFF.)

This provides the standard features of the 2114-15-16 IOC and in addition: (a) Queues requests in memory and services them on a first in and first out basis. (b) Allows priority requests to be processed immediately. It differs from the standard IOC in that each device is required to have its own driver. It is primarily used with Data Acquisition Systems. It cannot be used with 2020 Magnetic Tape Unit unless DMA is provided.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A007-20597A

DISC OPERATING SYSTEM (2770 SERIES DISC/DRUM)

The Disc Operating System requires 8,192 words of core memory, a disc or drum unit, a system teleprinter, and a batch I/O device to provide batch processing of user jobs that combine editing, compilation, and execution of FORTRAN, ALGOL, and Assembly Language programs. It provides device-independent I/O programming, mass storage of data files, program segmentation, time reports, program suspension, and program completion. The DOS Teleprinter Driver and the DOS Disc/Drum Driver are required for minimum configuration.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A008-20021B

PREPARE CONTROL SYSTEM

this program prepares the 2114-15-16 Basic Control System (BCS) from the BCS loader and IOC subroutine. (The loader subroutine loads and links the relocatable programs, creates indirect addressing when necessary, selects and loads library routines; the IOC subroutine processes I/O requests.) The Prepare Control System also establishes the relationship among the I/O channel numbers, drivers, driver interrupt entry points and unit reference numbers.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A008-20301B

4K SIO SYSTEM DUMP

This dump is used to adapt SIO drivers to a particular 2114-15-16, 4K hardware configuration. The SIO dump prepares an absolute binary tape containing SIO drivers and, optionally, a Standard 4K Software System.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A008-20313B

8K SIO SYSTEM DUMP

This dump is used to adapt SIO drivers to a particular 2114-15-16, 8K hardware configuration. The SIO dump prepares an absolute binary tape containing SIO drivers and, optionally, a Standard 8K Software System.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A008-20335A

16K SIO SYSTEM DUMP

This dump is used to adapt SIO drivers to a particular 2114-15-16, 16K hardware configuration. The SIO dump prepares an absolute binary tape containing SIO drivers and, optionally, a Standard 16K Software System.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A008-20594A

8K MAGNETIC TAPE SYSTEM

This system consists of:
MTS Bootstrap: This program is loaded with S.SIO, SIO magnetic tape driver and SIO dump to produce a configured bootstrap. It contains the core resident portion of .IPL. The configured bootstrap tape is loaded to initiate system operation. MTS Inter Pass Loader (.IPL.): This program is loaded into core memory for program execution and requests directives from tape reader, card reader, or teleprinter. MTS Utility Tape: This consists of routines which give options to delete all list and/or punch output for a given program execution, and an option to force all device input through the teleprinter keyboard.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A008-20595A

16K MAGNETIC TAPE SYSTEM

This system consists of:
MTS Bootstrap: This program is loaded with S.SIO, SIO magnetic tape driver and SIO dump to produce a configured bootstrap. It contains the core resident portion of .IPL. The configured bootstrap tape is loaded to initiate system operation. MTS Inter Pass Loader (.IPL.): This program is loaded into core memory for program execution and requests directives from tape reader, card reader or teleprinter. MTS Utility Tape: This consists of routines which give options to delete all list and/or punch output for a given program execution, and an option to force all device input through the teleprinter keyboard.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A008-20802C

SYSTEM DUMP

System Dump, SDUMP, is an independent utility program used to create back-up copies of disc based systems on punched tape or magnetic tape. The copy can later be reloaded on the disc by SDUMP. System Dump is intended for use with the RTE and DOS systems and requires SIO Drivers for paper tape and magnetic tape devices.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A008-22009B

BOOTSTRAP LOADER GENERATOR

This program provides a simple method of preparing a "bootstrap loader" for any machine configuration in the HP 16-bit family, including the Basic Binary Disc Loader. In addition to the tape, a set of operating instructions for the bootstrapping operation is produced.

ASSEMBLY LANGUAGE (1257) (1257)

CONTRIBUTED

A008-220421C

AN HP2116-FAMILY SIMULATOR FOR THE IBM 360

Simulates operation of HP2114-15-16 computer including I/O functions of teleprinter, high speed punch, tape reader, 7 and 9 track magnetic tape on IBM System 360. When the appropriate HP software is loaded, programs written for the 2114-15-16 can be assembled or compiled, debugged and executed. Allows use of the 360 punched card input and line printer output. Simulation of a 4K HP computer requires a 360-30 or larger with 32K bytes. Simulation of a 16K HP computer requires a 131K byte 360.

System 360 Bal Assembly Language

CONTRIBUTED

A008-24016A

PREPARE TAPE SYSTEM

This program produces a configured library for the Magnetic Tape System. Optionally used to store relocatable object programs for system generation of DOS and RTE. Can utilize any one of: HP2020, HP3030, Disc/Drum SIO Drivers.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20005A

BCS TAPE READER DRIVER D.01

This driver processes requests for input from tape reader under interrupt control. It is used by the 2114-15-16, and requires the 12532A Interface Kit and the HP2737A Punch Tape Reader.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20006A

BCS TAPE PUNCH DRIVER D.02

This driver processes requests for output to the tape punch under interrupt control. It is used by 2114-15-16, and requires the 12597-03 Interface Kit and the HP2753A Tape Punch.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20016A

BCS TAPE PUNCH DRIVER D.02A (IBM 8 LEVEL)

This driver processes requests for output to the tape punch under interrupt control. It is used by the 2114-15-16 and requires the 12597-03 Interface Kit and the HP2753A Tape Punch.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20303A

4K SIO TAPE READER DRIVER

This driver processes requests for input from tape reader. It is unbuffered, non-interrupt, and is used by 2114-15-16 Standard 4K Software Systems. The 12532A Interface Kit and the HP2737A Punch Tape Reader are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20304A

4K SIO TAPE PUNCH DRIVER

This driver processes requests for output to the tape punch. It is unbuffered, non-interrupt, and is used by the 2114-15-16 Standard 4K Software Systems. The 12597-03 or the 12536A Interface Kit and the HP2753A Tape Punch are required. (Note: 12536A Interface Kit is obsolete)

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20306A

8K SIO TAPE READER DRIVER

This driver processes requests for input from tape reader. It is unbuffered, non-interrupt, and is used by 2114-15-16 Standard 8K Software Systems. The 12532A Interface Kit and the HP2737A Punch Tape Reader are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20307A

8K SIO TAPE PUNCH DRIVER

This driver processes requests for output to the tape punch. It is unbuffered, non-interrupt, and is used by the 2114-15-16 Standard 8K Software Systems. The 12597-03 or the 12536A Interface Kit and the HP2753A Tape Punch are required. (Note: 12536A Interface Kit is obsolete)

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20316A

8K SIO TAPE PUNCH DRIVER (IBM 8 LEVEL)

This driver processes requests for output to the tape punch. It is unbuffered and non-interrupt. It is used by the 2114-15-16 with 8K of memory. It punches in IBM 8-level code. 12597-03 Interface Kit and HP2753A Tape Punch are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20317A

4K SIO TAPE PUNCH DRIVER (IBM 8 LEVEL)

This driver processes requests for output to the tape punch. It is unbuffered and non-interrupt. It is used by the 2114-15-16 with 4K of memory. It punches in IBM 8-level code. 12597-03 Interface Kit and HP2753A Tape Punch are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20319A

16K SIO TAPE READER DRIVER

This driver processes requests for input from tape reader. It is unbuffered, non-interrupt, and is used by 2114-15-16 Standard 16K Software Systems. The 12532A Interface Kit and the HP2737A Punch Tape Reader are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20320A

16K SIO TAPE PUNCH DRIVER

This driver processes requests for output to the tape punch. It is unbuffered and non-interrupt. It is used by the 2114-15-16 Standard 16K Software Systems. The 12597-03 or the 12536A Interface Kit and the HP2753A Tape Punch are required. (Note: 12536A Interface Kit is obsolete)

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20327A

12K SIO TAPE READER DRIVER

This driver processes requests for input from tape reader. It is unbuffered, non-interrupt, and is used by 2114-15-16 Standard 12K Software Systems. The 12532A Interface Kit and the HP2737A Punch Tape Reader are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20328A

12K SIO TAPE PUNCH DRIVER

This driver processes requests for output to the tape punch. It is unbuffered, non-interrupt, and is used by the 2114-15-16 Standard 12K Software Systems. The 12597-03 or the 12536A Interface Kit and the HP2753A Tape Punch are required. (Note: 12536A Interface Kit is obsolete.)

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20743B

RTE PUNCH TAPE READER DRIVER (DVR01)

This driver processes requests for input from tape reader under interrupt control. It is used by the 2114-15-16 and requires the 12532A Interface Kit and the HP2737A Punch Tape Reader.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20745B

RTE HIGH SPEED PUNCH DRIVER (DVR02)

This driver processes requests for output to the tape punch under RTE control. It requires the 12597-03 Interface Kit and the HP2753A Tape Punch.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20987A

DOS PUNCH TAPE READER DRIVER (DVR01)

This driver processes requests for input from tape reader under interrupt control. It is used by the 2114-15-16 and requires the 12532A Interface Kit and the HP2737A Punch Tape Reader.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-20989A

DOS HIGH SPEED PUNCH DRIVER (DVR02)

This driver processes requests for output to the tape punch under DOS control. It requires the 12597-03 Interface Kit and the HP2753A Tape Punch.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A009-22044A

RUN-TIME DATA INPUT FOR BASIC

The SCANR Subroutine allows a BASIC programmer to input free-field data to a running BASIC program through the photoreader or teleprinter using the regular BASIC I/O drivers. Any number of data items may be transferred into an array specified by the user program. SCANR, which is an Assembly Language modification of the BASIC Interpreter, HP20883B, changes the routine that is normally used to scan a Data Statement so that it returns values read from the teleprinter or photoreader instead. After the values are passed to the user program, SCANR restores the BASIC Interpreter to its original status. BASIC-callable.

ASSEMBLY LANGUAGE (85) (85)

CONTRIBUTED
David R. McClellan
HP, Southern Sales Region

A009-22078A

HIGH SPEED PUNCH BASIC DRIVER

This driver allows paper tape output from a running BASIC program for logging data or storing intermediate results. It requires HP2753A Paper Tape Punch and Interface Kit, and HP20883B BASIC Interpreter.

ASSEMBLY LANGUAGE

CONTRIBUTED
David R. McClellan
HP, Southern Sales Region

A009-22082A

BASIC PHOTOREADER DATA INPUT

This subroutine allows the user to enter data to a running BASIC program by means of the high speed photoreader. The user requests input data with an INPUT statement. If the photoreader is ready when the INPUT statement is executed, data is read into the program from paper tape by the photoreader. If the photoreader is not ready (i.e. no tape or gate down), a question mark is printed on the teletype, and the data is entered in the normal manner from the keyboard. An Absolute modification to the Basic Interpreter, HP20883B.

ASSEMBLY LANGUAGE (57) (57)

CONTRIBUTED
Stephen M. Curry
Stanford University, Department of Physics

A010-20019C

BCS CARD READER DRIVER D.11

This BCS driver processes requests for input from the 2779A SOROBAN card reader under interrupt control. Used with 2114-15-16, 12558A Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A010-20324B

8K SIO CARD READER DRIVER

Processes requests for input from the 2779A SOROBAN card reader. Unbuffered, non-interrupt. This routine starts the card reader, reads the card one column at a time, converts from Hollerith to ASCII, and packs the characters into the user's buffer. Used by 2114-15-16 standard software systems. Memory size 8K 12558A Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A010-20332A

16K SIO CARD READER DRIVER

This SIO driver processes requests for input from the 2779A SOROBAN card reader. Unbuffered, non-interrupt. Used by 2114-15-16 standard software systems. Memory size 16K. 12558A Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A010-20520C

4K SIO MARK SENSE CARD READER DRIVER

This driver processes requests for input from the Optical Mark Reader. It is unbuffered, non-interrupt, and is used by 2114-15-16, 4K. The 12602A Interface Kit and the HP2761A-07 Optical Mark Rpader are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A010-20521C

8K SIO MARK SENSE CARD READER DRIVER

This driver processes requests for input from the Optical Mark Reader. It is unbuffered, non-interrupt, and is used by 2114-15-16, systems with 8K of storage. The 12602A Interface Kit and the HP2761A-07 Optical Mark Reader are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A010-20522C

16K SIO MARK SENSE CARD READER DRIVER

This driver processes requests for input from the Optical Mark Reader. It is unbuffered, non-interrupt, and is used by 2114-15-16 systems with 16K of storage. The 12602A Interface Kit and the HP2761A-07 Optical Mark Reader are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A010-20817A

BCS MARK SENSE DVR. (D.15) KIT 12602A

This BCS driver processes requests for input from the Optical Mark Reader under Basic Control System (BCS). It uses the 12602A Interface Kit and the HP2761A-07 Optical Mark Sense Card Reader.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A010-20819A

BCS MARK SENSE DVR. (D.15) KIT 12602B

This BCS driver processes requests for input from the Optical Mark Reader under Basic Control System (BCS). It uses the 12602B Interface Kit and the HP2761A-70 Optical Mark Sense Card Reader.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A010-20993A

DOS MARK SENSE CARD READER DRIVER (DVR15)

This driver processes requests for input from the Optical Mark Reader. It is used with the 2114-15-16. The 12602A or 12599A Interface Kit and the HP2761A-07 Optical Mark Reader are required. (Note: 12599A is obsolete.)

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A011-20029A

BCS HP2778A LINE PRINTER DRIVER (D.12)

This driver processes requests for output to HP2778A (120 characters/line) and HP2778A-01 (132 characters /line) line printers under interrupt control. Interface Kit 12617A is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A011-20527B

4K SIO HP2778A LINE PRINTER DRVR.

This driver processes requests for output to HP2778A (120 characters/line) and HP2778A-01 (132 characters/ line) line printers under interrupt control. The Interface Kit 12617A is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A011-20528A

8K SIO HP2778A LINE PRINTER DRVR.

This driver processes requests for output to HP2778A (120 characters/line) and HP2778A-01 (132 characters/ line) line printers under interrupt control. Interface Kit 12617A is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A011-20529A

16K SIO HP2778A LINE PRINTER DRVR.

This eriver processes requests for output to HP2778A (120 characters/line) and HP2778A-01 (132 characters/ line) line printers under interrupt control. Interface Kit 12617A is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A011-20800B

RTE HP2778A LINE PRINTER DRIVER (DVR12)

This driver processes requests for output to HP2778A (120 characters/line) and HP2778A-01 (132 characters/ line) line printers under interrupt control. Interface Kit 12617A is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A011-20991A

DOS HP2778A LINE PRINTER DRIVER (DVR12)

This driver processes requests for output to HP2778A (120 characters/line) and HP2778A-01 (132 characters/ line) line printers under interrupt control. Interface Kit 12617A is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A011-22092A

OLIVETTI SIO DRIVER

This program overlays the list output part of the teleprinter driver with the list output instructions for the Olivetti SV40. The Olivetti SIO driver must be loaded immediately after the system teleprinter driver. External specifications conform to all system input/output drivers.

ASSEMBLY LANGUAGE (104) (104)

CONTRIBUTED
Bernd Palmer
HP, Germany/Boblingen

A011-22095A

BASIC HP2778A LINE PRINTER DRIVER

This program overlays a certain part of the Basic Compiler, HP24000A, causing the data to be listed on the line printer, or teleprinter depending on user switch options.

ASSEMBLY LANGUAGE (200) (200)

CONTRIBUTED
Matthew Simon
HP, Eastern Sales Region

A012-20072B

VERIFICATION: DACE AXEPT

This verification program contains a working example of DACE (Data Acquisition and Control Executive) tasks which will operate any of these subsystems: 2310A/B/C, 2320A, 2322A, 2323A.

FORTRAN II

SUPPORTED AMD

A012-20209C

DACE LIBRARY

This is a complete, general purpose software package for scheduling data acquisition and control activities. Requires minimum of 8K memory and 12539A I/O Kit. (Time Base Generator).

ASSEMBLY LANGUAGE

SUPPORTED AMD

A013-20073A

BCS 5610 A-TO-D DRIVER D.56 (NON-DMA)

This non-DMA driver for the 2311A Subsystem operates to provide a maximum reading rate of up to 60 KHZ (2116) or up to 48 KHZ (2114 or 2115) with the interrupt system disabled during data taking. Operates in two modes: single channel monitor or sequential scan through up to 16 channels. The DMA version is 20093A.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A013-20093A

BCS 5610A A-TO-D DMA DRIVER D.56A

This driver for the 2311A Subsystem operates the 5610A in sequential mode with DMA to provide a maximum reading rate of up to 100 KHZ. The non-DMA, slower version of this driver is 20073A.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A013-20396A

RTE 10-BIT A-TO-D CARD 12564A DVR57

DVR57 interfaces the 12564A analog-to-digital converter card to RTE 2005A. It includes a utility routine DATIN to simplify FORTRAN calls. It takes one reading per call and returns a floating point result. Uses 12564A I/O kit.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A013-22061A

HP2320 LOW SPD A-TO-D SUBSYS DVR - FTN-CALL

This relocatable subroutine converts the specified channel number from integer to BCD, programs the scanner for the desired channel, delay and function, and programs the desired range, function and mode. After the delay, the scanner sends an encode command to the DVM; the driver waits until the measurement is completed. Then the driver inputs the BCD reading, converts it to floating point, and returns it to the calling program. If an overload occurs, a calling parameter is incorrect, or the measurement is not completed in ten seconds, the driver returns with an error indication. Requires HP2402A DVM, HP2911A/B Crossbar Scanner, HP12604B Data Source Interface Kit, HP12567A DVM Program Interface Kit, and HP12535A Scanner Programming Interface Kit.

ASSEMBLY LANGUAGE (224) (595)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A013-22062A

HP2322A LOW SPD A-TO-D SUBSYS DVR - FTN-CALL

This relocatable subroutine converts the specified channel number from integer to BCD, programs the scanner for the desired channel, delay and function, and programs the DVM for the desired range, function, and sample period. It removes the holdoff from the DVM, and after the delay, the scanner sends an encode command to the DVM. The driver waits until the measurement is completed, then inputs the BCD reading, converts it to floating point, and returns it to the calling program. If an overload occurs, a calling parameter is incorrect, or the measurement is not completed in ten seconds, the driver returns with an error indication. Requires HP2322A Analog-to-Digital Subsystem consisting of HP2401C DVM, HP2911A/B Crossbar Scanner, HP12604B Data Source Interface Kit, HP12533A DVM Programming Interface, and HP12535A Scanner Programming Interface Kit.

ASSEMBLY LANGUAGE (226) (596)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A013-22098A

HP2323A LOW SPD A-TO-D SBSYS DRVR BASIC-CALL

This driver converts the scanner channel number supplied by the calling program from floating point to BCD, then passes the converted channel number to the scanner. After the scanner responds, the driver converts the program control word from floating point to octal and sets the voltmeter for range, function and mode. When the voltmeter acknowledges, the driver initiates the measurement, then converts the BCD data received from the voltmeter to floating point. If the measurement was made successfully, the driver returns to the calling program with the converted data. If the measurement was not completed, the driver returns with the error condition.

ASSEMBLY LANGUAGE (277) (277)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A014-20014A

BCS PLOTTER DRIVER D.10

This driver processes requests for output to the digital incremental plotter under interrupt control. It is used with 2114-15-16. The 12560A Interface Kit and the Calcomp model 565 plotter are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A014-20581A

DOS PLOTTER DRIVER (DVR10)

This driver processes requests for output to the digital incremental plotter under interrupt control. It is used with 2114-15-16. The 12560A Interface Kit and the Calcomp model 565 plotter are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A014-20808B

RTE PLOTTER DRIVER (DVR10)

This driver processes requests for output to the digital incremental plotter under interrupt control. It is used with 2114-15-16. The 12560A Interface Kit and the Calcomp model 565 plotter are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A014-22077A

CALCOMP PLOTTER BASIC DRIVER

Calcomp Plotter Basic Driver is a subroutine which allows the user to plot points on a Calcomp 565 digital plotter using the HP BASIC Language.

ASSEMBLY LANGUAGE (280) (280)

CONTRIBUTED
David R. McClellan
HP, Southern Sales Region

A014-22080A

HP2331A X-Y DISPLAY SUBSYSTEM DRIVER - FTN-CALL

This routine sets up a plot buffer, displays points entered into the buffer, displays the X-Y axes, and clears the plot buffer upon request. An interrupt service routine is called each time an interrupt occurs from the D/A converter (about every twenty milliseconds).

ASSEMBLY LANGUAGE (167) (199)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A015-20079A

8K SIO DISC/DRUM DRIVER

The 8K SIO Disc/Drum Driver operates in a non-interrupt environment for disc/drum operation, identically simulating magnetic tape unit operation. This driver overlays the same core locations as the magnetic tape SIO drivers (8K) and is not used with magnetic tape operation. This driver uses the HP2770A/1A Disc with the 12606A Interface Kit or the HP2773A/4A/5A Drum with the 12610B Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A015-20081A

16K SIO DISC/DRUM DRIVER

The 16K SIO Disc/Drum Driver operates in a non-interrupt environment for disc/drum operation, identically simulating magnetic tape unit operation. This driver overlays the same core locations as the magnetic tape SIO drivers (16K) and is not used with magnetic tape operation. This driver uses the HP2770A/1A Disc with the 12606A Interface Kit or the HP2773A/4A/5A Drum with the 12610B Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A015-20747C

RTE DISC/DRUM DRIVER (DVR30)

The RTE Disc/Drum Driver (DVR30) processes input/output requests (both system and user) for the RTE system. This driver is required in the minimum RTE system and is used with the 2770A/1A Disc and 12606A Interface Kit or the 2773A/4A/5A Drum and 12610A Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A015-20995A

DOS DISC/DRUM DRIVER (DVR30)

The DOS Disc/Drum Driver processes input/output requests (both system and user) for the DOS system. This driver is required in the minimum DOS system and is used with the 2770A/1A Disc and 12606A Interface Kit or the 2773A/4A/5A Drum and the 12610B Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A015-22063A

HP2770A/2771A DISC MEMORY DRIVER

This routine facilitates the handling of binary records by accepting separate floating point track and sector addresses and assembling control words. Error indication is provided for read, write or parameter errors. Requires HP2772A Disc Power Supply, HP12606A/B Disc Memory Interface Kit, and HP12578A DMA.

ASSEMBLY LANGUAGE (149) (181)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A015-22070A

HP2773A/74A/75A DRUM MEMORY DRIVER - FTN-CALL

This routine facilitates the handling of binary records by accepting separate floating point track and sector addresses and assembling control words. Error indication is provided for read, write, or parameter errors. Requires HP2776A/77A Drum Power Supply,HP12578A DMA and HP12610A Drum Memory Interface Kit.

ASSEMBLY LANGUAGE (139) (171)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A015-22110A

HP2773A/75A/74A DRUM MEMORY DRIVER - BASIC-CALL

This routine facilitates the handling of binary records by accepting separate floating point track and sector addresses and assembling control words. Error indication is provided for read, write and parameter errors. Requires HP2776A/77A Drum Power Supply, HP12610A Drum Memory Interface Kit, HP12578A DMA, and HP24000A Basic Interpreter.

ASSEMBLY LANGUAGE (186) (186)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A015-22111A

HP2770A/2771A DISC MEMORY DRIVER - BASIC-CALLABLE

This program facilitates the handling of binary records by processing track and sector addresses for DMA and programming the discs for the track and sector addresses before DMA transfer. Error indication is provided for read, write or parameter errors. The Disc Memory Driver requires HP24000A Basic Compiler, HP2770A/2771A Disc Memory, HP2772A Disc Power Supply, HP12606A/B Disc Memory Interface Kit and HP12578A DMA.

ASSEMBLY LANGUAGE (183) (183)

CONTRIBUTED
Steven A. Stark
HP, Eastern Sales Region

A016-20007A

BCS INCREMENTAL MAG TAPE DRIVER D.20

This driver processes requests for output to incremental magnetic tape transport under interrupt control. Used with 12537A Interface Kit and KENNEDY 1406 or 1506 (write only) Incremental Magnetic Tape Transport.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A016-20013E

BCS HP2020 MT DRIVER D.21

This consists of the BCS Driver for the HP2020 Mag Tape System. The BCS Driver processes requests for input from or output to tape under interrupt control. The 12538B Interface Kit and the HP H27-2020A/B Magnetic Tape Unit are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A016-20022E

BCS HP3030 MT DRIVER D.22

This is the BCS Driver for the HP3030 Mag Tape System. It is used on the 2115-16 equipped with DMA. The BCS driver processes requests for input from or output to tape under interrupt control. The 12559A Interface Kit, DMA and the HP H01-3030G Magnetic Tape Unit are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A016-20314D

8K SIO HP2020 MT DRIVER

This SIO driver is for the 2114-15-16 with 8K of memory. It is non-interrupt, unbuffered and requires 12538B Interface Kit and the HP H27-2020A/B Magnetic Tape Unit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A016-20315C

4K SIO HP2020 MT DRIVER

This SIO driver is for 2114-15-16 computers with 4K of storage. It is non-interrupt, unbuffered and requires the 12538B Interface Kit and the HP H27-2020A/B Magnetic Tape Unit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A016-20321C

16K SIO HP2020 MT DRIVER

This SIO driver is for the 2114-15-16 computers with 16K of storage. It is non-interrupt, unbuffered and it requires the 12538B Interface Kit and the HP H27-2020 Magnetic Tape Unit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A016-20331C

8K SIO HP3030 MT DRIVER

This SIO driver is for the HP3030 Mag Tape System. It is used on HP2115-16 equipped with DMA and a core size of 8K. The driver is non-interrupt, unbuffered, and uses the 12559A Interface Kit, DMA and the HP3030 Mag Tape Unit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A016-20334C

16K SIO HP3030 MT DRIVER

This SIO driver is for the HP3030 Mag Tape System. It is used on the HP2115-16 with DMA and a core size of 16K. The driver is non-interrupt, unbuffered, and uses the 12559A Interface Kit, DMA and the HP3030 Mag Tape Unit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A016-20336B

4K SIO HP3030 MT DRIVER

This SIO driver is for the HP3030 Mag Tape System. It is used on HP2115-16 equipped with DMA and a core size of 4K. The driver is non-interrupt, unbuffered, and uses the 12559A Interface Kit, DMA and the HP3030 Mag Tape Unit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A016-20806C

RTE HP3030 MT DRVR (DVR22)

This is the RTE Driver for the HP3030 Mag Tape System. It is used on the 2115-16 equipped with DMA. The RTE driver processes requests for input from or output to tape under interrupt control. The 12559A Interface Kit, DMA and the HP H01-3030G Magnetic Tape Unit are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A016-20997B

DOS HP3030 MT DRVR (DVR22)

This is the DOS Driver for the HP3030 Mag Tape System. It is used on the 2115-16 equipped with DMA. The driver processes requests for input from or output to tape under interrupt control. The 12559A Interface Kit, DMA and the HP H01-3030G Magnetic Tape Unit are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A016-22100A

AL-MAG

"AL-MAG" is an absolute program that allows the ALGOL Compiler to use Magnetic Tape File Three rather than the paper tape reader as its source. This program, is useful for editing programs. Since it overlays part of the photoreader driver, the program requires no additional storage.

ASSEMBLY LANGUAGE

CONTRIBUTED
James D. Reed
Hughes Aircraft Co., Tucson, Arizona

A017-20001B

4K RELOCATING LOADER

This is a module of the 2114-15-16 BCS which provides the capability of loading, linking, and initiating execution of relocatable programs. This module will not load ALGOL programs, or relocatable programs from magnetic tape.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A017-20018E

BCS RELOCATING LOADER

This is a module of the 2114-15-16 BCS which provides the capability of loading, linking, and initiating execution of relocatable programs. This module is used with memory size of 8K or greater.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A017-20792C

RTE RELOCATING LOADER

This is a module of the RTE which provides the capacity of loading, linking, and initiating execution of relocatable programs on the 2116.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A017-20925A

DOS RELOCATING LOADER

This is a module of the DOS which provides the capability of loading, linking, and initiating execution of relocatable programs on the 2116.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A018-20115C

MARKED CARD BASIC SYSTEM

This program is a composite binary tape for the 2114-15-16 containing teleprinter, photoreader, and punch input/output drivers as well as the driver for the marked card reader. Minimum equipment is 8K of memory and the 2761A-07 Optical Mark Reader. The Basic Compiler may also be included on the binary tape.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A018-20392A

BASIC SYSTEM

These programs will prepare the BASIC System and allow execution of programs from the teleprinter keyboard using HP BASIC commands. The system can operate under MTS, and requires 8K of storage. Prepare BASIC System prepares a composite binary tape containing teleprinter, photo reader, and punch input/output drivers. If the basic compiler is loaded at the same time, it will be included on the binary tape. It has been changed to generate binary compatible with MTS.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A018-20548A

FORTRAN COMPILER

This compiler translates FORTRAN II instructions into a binary relocatable program which can be executed under BCS control on the 2114-15-16. It requires two separate passes. Pass 1 results in an intermediate binary tape, and if desired, a source listing. Pass 2 results in the relocatable object tape and, if desired, a program listing in assembly language can be printed. If only a teleprinter is provided, an additional pass is required to produce the listing.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A018-20549A

4K FORTRAN COMPILER

This compiler translates FORTRAN II instructions into a relocatable binary program which can be executed under BCS control on the 2114-15-16, with 4K of storage. It requires the 4K teleprinter driver.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A018-20598A

DOS ASSEMBLER

This assembler translates assembly language instructions into binary instructions for execution under DOS on the 2116.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A018-20599A

DOS FORTRAN

This compiler translates FORTRAN II instructions into relocatable binary code for execution on the 2116 under DOS control.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A018-20874C

RTE ASSEMBLER

This assembler translates assembly language instructions into binary instructions for execution under RTE on the 2116.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A018-20875C

RTE FORTRAN COMPILER

This compiler translates FORTRAN II instructions into relocatable binary code for execution on the 2116 under RTE control.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A018-22013A

INVERSE ASSEMBLER

The program accepts an absolute binary tape and recreates a pseudo-assembler source listing from it. It operates with the interrupt system enabled, under BCS, but with the normal photoreader input routine replaced by an equivalent of the basic binary loader. EAU required.

ASSEMBLY LANGUAGE (1022) (1022)

CONTRIBUTED
J. D. Sankey
Canadian National Research Council

A018-22065A

FORTRAN TRANSLATOR - 1800 TO HP

This relocatable FORTRAN Translator assists in modifying FORTRAN IV programs to HP FORTRAN by producing a line-by-line translation of IBM 1800 FORTRAN. The program expects paper tape input and paper tape output, but only minor revisions are required for magnetic tape or card output.

ASSEMBLY LANGUAGE (876) (941)

CONTRIBUTED
Jim Fearnside
HP, Medical Electronics Division

A018-24031A

EXTENDED ASSEMBLER NON EAU

This assembler translates from assembly language into binary object program in either absolute or relocatable form. It is for use on the 2114-15-16 when the extended arithmetic unit is not provided. The language is extended to provide for literals, conditional or repeated inclusion of source statements and listing of control commands. 8K of memory and an 8K teleprinter driver are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A018-24032A

EXTENDED ASSEMBLER EAU

This assembler translates from assembly language into binary object program in either absolute or relocatable form. It is for use on the 2114-15-16 when the extended arithmetic unit is provided. The language is extended to provide for literals, conditional or repeated inclusion of source statements and listing of control commands. 8K of memory and teleprinter driver are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A018-24038A

4K ASSEMBLER NON EAU

This assembler translates assembly language instructions into binary object program in either absolute or relocatable form. It is for use on the 2114-15-16 when the extended arithmetic unit is not provided. Two passes are required: the first creates a symbol table from the source statements, checks for error conditions, and generates diagnostic messages if required. The second combines the source program with the symbol table to produce the binary object tape and, if desired, the assembly language program listing. If only a teleprinter is provided, an additional pass is required to produce the listing. A teleprinter driver is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A018-24039A

4K ASSEMBLER EAU

This assembler translates assembly language instructions into binary object program in either absolute or relocatable form. It is for use on the 2114-15-16 when the extended arithmetic unit is provided. Two passes are required: the first creates a symbol table from the source statements, checks for error conditions, and generates diagnostic messages if required. The second combines the source program with the symbol table to produce the binary object tape and, if desired, the assembly language program listing. If only a teleprinter is provided, an additional pass is required to produce the listing. A teleprinter driver is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A018-24044A

ALGOL COMPILER

Translates HP ALGOL instructions into a binary relocatable object program which can be executed under BCS control. Requires one pass; additional pass to produce listing in teleprinter only configuration. 8K memory required. Must use appropriate teleprinter driver.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A020-20688C

REAL TIME EXECUTIVE

The Real-Time Executive (RTE) uses multiprogramming and priorities to schedule both real-time and background programs that can be core- or disc-resident. RTE controls all input/output and interrupt processing, except for special privileged interrupts, which can circumvent RTE for extra-quick response. The RTE Teleprinter Driver and the RTE Disc/Drum Driver are required for minimum configuration.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A101-20100B

SYMBOLIC EDITOR

This is a 2114-15-16 program which edits and updates symbolic programs or files. The input is a file to be edited and a file of editing information. The output is an altered symbolic file. The edit file may be entered from the keyboard or from the standard input unit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A101-20805B

RTE EDITOR

This is a 2116 program which edits and updates symbolic programs or files under RTE. The input is a file to be edited and a file of editing information. The output is an altered symbolic file. The edit file may be entered from the keyboard or from the standard input unit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A101-22114A

REPRODUCE/EDIT PAPER TAPE

This program will reproduce and edit paper tape in any format. It can be used to convert H.P.BASIC to the proper format for other timeshare systems.

ASSEMBLY LANGUAGE

CONTRIBUTED
Barry S. Todd
Naval Weapons Center, Corona, California

A101-22171A

FORTRAN UNIT REFERENCE NUMBER EDITOR

This program allows the user to change the unit reference number of an input/output statement in a program written in HP FORTRAN.

FORTRAN II (629) (2118)

CONTRIBUTED
Roland E. Jahn
HP, Medical Electronics Division

A104-22081A

BIT OPERATIONS (SET, CLEAR, TEST)

These FORTRAN-callable subroutines set or clear any bit of any specified word. In addition, a FORTRAN function is provided to allow testing the status of any bit with a FORTRAN "IF" statement.

ASSEMBLY LANGUAGE (42) (75)

CONTRIBUTED
Allan P. Sherman
HP, Medical-Electronics Division

A105-20096A

DATA CONVERSION ROUTINE (READING TO MILLIVOLTS) MCONV

This routine converts a left-justified reading of up to 14 bits from an analog-to-digital converter to an integral number of millivolts. Primarily to be used with the 2310A/B/C Subsystems.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A105-20210A

CONVERSION ROUTINE BCD TO FLOATING POINT ICONV

This routine translates 8-4-2-1 BCD code obtained from a 2401C or 2402A Digital Voltmeter to a floating point value. Also, ICONV complements the resulting value to agree with the DVM's data sign. Used with 2320A, 2322A Subsystems.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A105-20288A

RTE CONVERSION ROUTINE BCD-FLOATING POINT CONV.

This utility routine (RTE Type 7) converts BCD to floating point from the two words of BCD data returned from a 2401C or 2402A DVM. Does not call Formatter; uses EAU; normally used with DVR76 or DVR77.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A105-20533A

CONVERSION ROUTINE FOR 2321 SUBSYS (BCD-FLOAT PNT)

This is used to translate the 8421 BCD received from a 3450A Voltmeter to a floating point number. Will also complement negative DC or DC-RATIO readings to agree with data sign of voltmeter.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A105-22086A

EBCDIC TO ASCII TRANSLATOR

This program translates 80-column card images from EBCDIC (IBM) nine-track magnetic tape (read from HP 3030 MT unit) to ASCII coding output as a listing or on paper tape.

ASSEMBLY LANGUAGE (394) (394)

CONTRIBUTED
Allan P. Sherman
HP, Medical Electronics Divison

A105-22093A

ASCII/IBM-360 CONVERSION ROUTINE

This subroutine converts ASCII buffers to IBM magnetic tape code and conversely, IBM code to ASCII buffers. Thus, IBM code can be used for reading and writing with BCS/RTE/DOS. The conversion time is approximately the length of the array in words (LEN) multiplied by 100 microseconds. FORTRAN-callable.

ASSEMBLY LANGUAGE (178) (215)

CONTRIBUTED
Charles Chernack
HP, Eastern Sales Region

A106-20297A

RTE 2310/2311 SUBSYSTEM DRIVER DVR56

DVR56 interfaces the 2310A/B/C and/or the 2311A Subsystems to RTE 2005A (these subsystems include an Analog-to-Digital Converter, the HP5610A or the Raytheon Multi/Miniverter). A call from FORTRAN or Assembly language programs the subsystem and take a specified number of readings. There are several modes of operation, including sequential and free-run. Uses DMA.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A106-20312A

PUNCH/VERIFY ROUTINE

This routine reproduces and verifies copy of any paper tape punched in ASCII code. It may be used on 2114-15-16 computers.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A106-22079B

ALPHABETIC STRING SORTING PROGRAM

This program is useful for preparing alphabetized records from data entered in random order via a teleprinter or card reader. The program sorts the records and prints them out in alphabetic order.

FORTRAN II (1459) (3640)

CONTRIBUTED
Robert Richardson
HP, Eastern Sales Region

A106-22113A

MTS PAPER TAPE DUPLICATOR

The MTS Paper Tape Duplicator copies and verifies either binary or source paper tape using File 3 of the Magnetic Tape Unit. This program operates under control of the Magnetic Tape System software.

ASSEMBLY LANGUAGE (469) (469)

CONTRIBUTED
Bill Swanson
HP, Southern Sales Region

A106-22116A

ORDERING A FLOATING POINT ARRAY

This subroutine puts a single-dimensioned floating point array in either ascending or descending order. (STAT-PACK)

FORTRAN II (182) (558)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A106-22167A

ORDERING A FIXED POINT ARRAY

This subroutine puts a single-dimensioned fixed point array in either ascending or descending order. (STAT-PACK)

FORTRAN II (157) (433)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A106-22168A

RANKING A FLOATING POINT ARRAY

This subroutine ranks the values of a single-dimensioned array in either ascending order (from smallest to largest) or descending order.
(STAT-PACK)

FORTRAN II (545) (921)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A106-22169A

ORDERING OF A FLOATING POINT ARRAY

This subroutine orders a single-dimensioned floating point array in ascending order.
(STAT-PACK)

FORTRAN II (100) (495)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A112-22172A

IOC - FORTRAN-CALLABLE

This routine allows the user to perform direct calls to .IOC. from a FORTRAN program, permitting direct transfer of data rather than going through the formatter. Eliminating the formatter also eliminates the ASCII-binary-ASCII code conversion feature. All data is stored in its input form.

ASSEMBLY LANGUAGE (35) (319)

CONTRIBUTED
Fritz Joern
HP, Italy/Milan

A202-20337B

DIAGNOSTIC: 12604B DSI

This test is used to check the 12604B Data Source Interface for correct operation and to aid in trouble-shooting. Uses 2114A/B, 2115A, 2116A/B 12604B, DVM, teleprinter.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A202-20338B

TEST: 2310C SUBSYSTEM

This test verifies correct operation of the 2310C subsystem as a part of a computer system. Uses 2114A/B, 2115A, 2116A/B, 2310C, teleprinter.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A202-20339B

TEST: 2310A/B SUBSYSTEM

This test verifies correct operation of the 2310A/B as a part of a computer system. Uses 2114A/B, 2115A, 2116A/B, 2310A/B, teletype.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A202-20341B

TEST: 2912 SCANNER/DVM

This test verifies correct operation of the 2323A as part of a computer system. Uses 2114A/B, 2115A, 2116A/B, 2323A, and teleprinter. Can also be used on a stand-alone 2912A or 2402A.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A202-20348B

DIAGNOSTIC: 40-BIT OUTPUT REGISTER (12556B)

2114-15-16 program to test proper operation of 12556B 40-bit output register interface kit (for 12556A, use 20431B).

ASSEMBLY LANGUAGE

SUPPORTED AMD

A202-20349C

VERIFY: 2911 SCNR/DVM TEST

Tests operation of 2911A crossbar scanner, 2401C and/or 2402A digital voltmeters and associated 12535A, 12604A, 12533A and/or 12567A interface kits.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A202-20429B

DIAGNOSTIC: 2912A PROGRAMMER CARD

Tests proper operation of 2912A Reed Scanner and 12567A interface kit.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A202-20430A

DIAGNOSTIC: 2402A PROG/DATA INTERFACE

Tests operation of 2402A Digital Voltmeter, 12567A and 12604A interface kits.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A202-20431B

DIAGNOSTIC: 40-BIT OUTPUT REGISTER (12556A)

2114-15-16 program to test proper operation of 12556A 40-bit output register interface kit.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A202-20435A

DMI DIAGNOSTIC

This program tests the operation of the 12582A Direct Memory Increment Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A202-20436A

DIAGNOSTIC: DVS PROGRAM CARD 12661A

Tests operation of 12661A interface card and associated 6200/6800 series of programmable power supplies.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A202-20530B

VERIFY: 2321A SUBSYSTEM (3450/2911) VER34

Verifies correct operation of the 2321A Subsystem as a part of a computer system. May be used in maintenance and/or trouble isolation. Uses 2114A/B, 2115A, 2116A/B, 2321A, and teleprinter.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A202-20583A

CALIBRATION: 2311 (TTY)

A calibration program enabling the user to calibrate the 5610A A/D converter using only the computer, teleprinter, and a known input voltage standard.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A202-24142A

PROCESSOR INTERCONNECT CABLE DIAGNOSTIC

This diagnostic tests the cable contained in the 12875A Processor Interconnect Kit for hardware errors.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A203-20340C

VRC DRUM DIAGNOSTIC

This diagnostic is a 2114-15-16 program to test VRC Drum System. It uses the 12610B Interface Kit, and the 2773A, 2774A, or 2775A VRC Drum.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A203-20346C

DDC DISC DIAGNOSTIC

This diagnostic is a 2114-15-16 program to test DDC Disc System. It uses the 12606A Interface and the 2770A or 2771A DDC Disc.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A203-20585B

CARTRIDGE DISC MEMORY DIAGNOSTIC

This diagnostic for the Cartridge Disc Memory confirms proper output, input and control functions for the cartridge disc memory. Rapid checkout of the controller is provided in addition to exhaustive testing of the drive. The test operator may choose to run under the default mode or define his own tests with teletype and switch register options. Provision is made for checkout of up to four drives serially. Interaction between drives may also be tested. This diagnostic does not provide for checkout of more than one controller. It uses the 2116/15/14 with DMA, 8K core, HP2870A Disc Drive, HP2871A Controller, and HP12557A Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A204-20411B

TEST: KENNEDY INCREMENTAL MAG TAPE

2114-15-16 program to test incremental magnetic tape system. 12537A interface kit and KENNEDY 1406 or 1506 incremental magnetic tape transport.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A204-20433E

HP3030 MT DIAGNOSTIC

This is the diagnostic for the HP3030 Magnetic Tape unit. The 12559A Interface Kit is used.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A204-20516B

HP2020 MT TEST

This is the diagnostic for the HP2020 Magnetic Tape Unit. It runs on 2114-15-16 computers of 4K, 8K or 16K and requires the 12538B Interface Kit and the HP H27-2020A/B Magnetic Tape Unit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A207-22083A

ABSOLUTE CORE DUMP ROUTINE

This routine provides the capability of dumping a modified relocatable program from core onto paper tape in absolute form for subsequent reloading with the Basic Binary Loader. The routine can be loaded with BCS and other relocatable user programs.

ASSEMBLY LANGUAGE (222) (293)

CONTRIBUTED
David R. McClellan
HP, Southern Sales Region

A207-22166A

MAG TAPE TO PRINT UTILITY

The Tape-to-Print Utility routine dumps alphanumeric information in ASCII or EBCDIC tape format onto a line printer. The program can accommodate a variety of record formats; a file count and a record count are maintained, and pages are numbered.

ASSEMBLY LANGUAGE (700) (3089)

CONTRIBUTED
David R. McClellan
HP, Southern Sales Region

A208-20345A

MEMORY PARITY CHECK DIAGNOSTIC (2114 AND 2115)

This is a 2114-15 program to test the Memory Parity Check option. It uses Interface Kits 12598A (2114A), 12569A (2116A).

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A208-20403A

LOW MEMORY ADDRESS TEST

This is a 2114-15-16 program to verify accessibility of all memory addresses below the test block.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A208-20404A

HIGH MEMORY ADDRESS TEST

This is a 2114-15-16 program to verify accessibility of all memory addresses above the test block.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A208-20405A

2116A LOW MEMORY CHECKERBOARD TEST

This is a 2116A program to check "worst case" data storage, to verify the accessibility of all memory addresses below the test block, and to check the transfer of data to and from the "T" register of the 2116A.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A208-20406A

2116A HIGH MEMORY CHECKERBOARD TEST

This is a 2116A program to check "worst case" data storage, verify accessibility of all memory addresses above the test block, and check transfer of data to and from "T" register.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A208-20426A

2116B HIGH MEMORY CHECKERBOARD TEST

This is a 2116B program to check "worst case" data storage, verify accessibility of all memory addresses above the test block and check transfer of data to and from "T" register.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A208-20427A

2116B LOW MEMORY CHECKERBOARD TEST

This is a 2116B program to check "worst case" data storage, verify accessibility of all memory addresses below the test block and check transfer of data to and from "T" register.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A208-20512A

2115A/14A HIGH MEMORY CHECKERBOARD TEST

This is a 2115A/14A program to check "worst case" data storage, verify accessibility of all memory addresses above the test block and check transfer of data to and from "T" register.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A208-20513A

2115A/14A LOW MEMORY CHECKERBOARD TEST

Program to check "worst case" data storage, verify accessibility of all memory addresses below the test block and check the transfer of data to and from "T" register.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A209-20400A

ALTER-SKIP INSTRUCTION TEST

This is a 2114-15-16 program to test the alter-skip group of instructions.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A209-20401B

MEMORY REFERENCE INSTRUCTION TEST

This is a 2114-15-16 program to test the Memory Reference Group of instructions.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A209-20402D

SHIFT-ROTATE INSTRUCTION TEST

This is a 2114-15-16 program to test the Shift-Rotate group of instructions.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A209-20415A

INTERRUPT DIAGNOSTIC

This is a 2114-15-16 program to verify proper operation of the interrupt logic.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A211-20002B

BCS DEBUG ROUTINE

This is a relocatable program used under 2114-15-16 BCS to aid in program testing. Control statements will (a) print selected portions of memory, (b) trace the execution of individual instructions in a selected area of the program, (c) modify the contents of selected locations or registers, (d) halt the program at specified breakpoints, (e) allow execution of program to begin at a desired location, and (f) list the absolute origin in memory of the user's program.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A211-22088A

OCTAL UTILITY SYSTEM (HOCUS)

This program is a self-contained system primarily designed for the absolute (stand-alone) environment, meaning normally, but not exclusively, HP BASIC. The functions it may perform are: load, punch, compare, octal examine (modify), dump, search, fill, jump, and reproduce.

ASSEMBLY LANGUAGE (513) (513)

CONTRIBUTED
George V. Woodley
HP, Automatic Measurement Division

A211-22090A

KEYBOARD TAPE GENERATOR

This program accepts octal data and ASCII commands from the keyboard and generates an absolute tape suitable for loading by the Basic Binary Loader or for use as a bootstrap loader.

ASSEMBLY LANGUAGE (277) (277)

CONTRIBUTED
Stroud S. Custer
HP, Eastern Sales Region

A211-24109A

CROSS-REFERENCE SYMBOL TABLE GENERATOR

This program processes an assembler source program and prints a cross-reference list of all symbols appearing in the program in alphabetical order. Each is followed by the sequence number of the statement in which the symbol was defined and the sequence numbers of all statements referring to the symbol. Assembly language. Must be used with SIO Teleprinter Driver (LP-Compat.)

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A212-20074A

L5610 FORTRAN/ALGOL INTERFACE ROUTINE

This routine provides the interface between 5610 Analog-to Digital Converter drivers D.56 and D.56A and FORTRAN/ALGOL compiled programs. The routine effectively allows the correct transfer of parameters to the driver. Hardware: 2114A/B, 2115A, 2116A/B, 5610A, 12566 opt.-2 I/O Kit.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A212-22014A

BINARY TAPE EDITOR

This program is intended to allow manipulation of absolute machine code data blocks. When used in conjunction with the Inverse Assembler (A018-22013) and the Assembler (A018-20111), it will increase the effectiveness of any efforts to make a valid inverse assembly. The binary tape editor will: (1) list the starting addresses and lengths of selected data blocks of an absolute binary tape, and (2) edit the binary tape by inserting or deleting selected data blocks.

ASSEMBLY LANGUAGE (256) (256)

CONTRIBUTED
J. D. Sankey
Canadian National Research Council

A212-22015B

BASIC LINE RESEQUENCER

The BASIC Line Resequencer program provides a means of changing the line numbers of a BASIC program and any statement within the program which references them, thus preserving the original sequence of execution of the program.

ASSEMBLY LANGUAGE (835) (835)

CONTRIBUTED
T. D. MacCoun
Quindar Electronics

A212-22016B

SYMBOLIC ALPHANUMERIC GENERATOR

This program may be configured to any buffered punch or teleprinter to generate block lettering leader or trailer on the standard one-inch paper tape. This allows labeling of a program or subroutine.

ASSEMBLY LANGUAGE (320) (320)

CONTRIBUTED
Charles Chernack
HP, Eastern Sales Region

A212-22064A

AUTOMATIC TABBING PROGRAM

This absolute program interacts with a person who is typing an Assembly Language source program on the teleprinter keyboard. It automatically spaces to the correct columns for opcode, operand, and comments and thus aligns the source program into neat and professional-looking columns. This allows a non-programmer to punch source tapes with increased efficiency.

ASSEMBLY LANGUAGE (148) (148)

CONTRIBUTED
Jim Fearnside
HP, Medical Electronics Division

A212-22089A

TELEPRINTER OCTAL INPUT PROGRAM

This program allows immediate on-line execution of machine language code by enabling the user to input instructions to the computer from the teleprinter by accepting octal codes typed on-line at the keyboard. The program can also be used to test the toggle switches.

ASSEMBLY LANGUAGE (109) (109)

CONTRIBUTED
Robert Richardson
HP, Eastern Sales Region

A212-22096A

SCOPE SYMBOLIC LISTER

This program displays a Symbolic Editor type listing of a program from the paper tape reader to the 1300 X-Y Plotter (or other oscilloscope) under switch register control. The Scope Symbolic Lister requires a BCS 1300 Scope Driver and the Scope Display Library.

ASSEMBLY LANGUAGE (8442) (10682)

CONTRIBUTED
M.H. Kendall, III
Redstone Arsenal

A212-22105A

COMMENT INSERTER FOR ASSEMBLER PROGRAMS

The Comment Inserter reads paper source tape via the photoreader and prints the source program on the teleprinter. After the user types comments on the teleprinter, the program punches a new paper source tape with comments.

ALGOL (296) (1675)

CONTRIBUTED
J. Evan Deardorff
HP, Medical Electronics Division

A212-22165A

CARD TO MAG TAPE UTILITY

The Card to Mag Tape Utility program allows creation of magnetic tape files from mark sense and/or punched card with a variety of tape formats. Labeled or unlabeled tapes can be produced.

ASSEMBLY LANGUAGE (988) (3377)

CONTRIBUTED
David R. McClellan
HP, Southern Sales Region

A212-22173A

I/O INSTRUCTION CONFIGURATOR

"CONFI" configures any I/O Assembly Language instruction with the proper select code by overlaying bits 0-5. The user's calling sequence supplies the addresses of instructions to be configured. This routine is used largely to configure drivers.

ASSEMBLY LANGUAGE (18) (269)

CONTRIBUTED
Fritz Joern
HP, Italy/Milan

A213-20407A

2116A/B SERIAL TTY TEST

This is a 2116 program to check operation of print, punch and read functions of the teleprinter. 12531A Interface Kit (obsolete). The program now is used as a test for the HP20083A BCS Dataphone Driver D.04

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A213-20408C

TAPE READER TEST

This is a 2114-15-16 program to test tape reader. 12532A Interface Kit and HP2737A Punch Tape Reader are required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A213-20409C

TAPE PUNCH TEST

This is a 2114-15-16 program to test tape punch. It uses 12536A or 12597-03 Interface Kit and HP2753A Tape Punch.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A214-20347B

MARK SENSE CARD READER DIAGNOSTIC

This is a 2114-15-16 program to test the operation of the HP 2761A-07 Optical Mark Reader. It uses 12602A Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A215-20895B

HP2778A LINE PRINTER DIAGNOSTIC

The Line Printer Diagnostic tests the HP2778A (120 characters/line) and the HP2778A-01 (132 characters/line) line printers for hardware errors. The program requires a standard carriage control format tape (supplied with Interface Kit No.12617A) for proper operation of all functions.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A216-20075A

VERIFICATION: 2311A SUBSYSTEM

This operates the 2311A Subsystem in its various modes, taking readings of known voltage signals. Results indicate proper or improper operation. Uses a teleprinter.

FORTRAN II

SUPPORTED AMD

A216-20344A

DIAGNOSTIC: 10-BIT A-TO-D CARD 12564A

This performs a complete test of the 12564A 10 BIT A/D I/O card circuitry for correct operation. Uses 12564A I/O Kit.

ASSEMBLY LANGUAGE

SUPPORTED AMD

A217-20290A

12589A AUTO CALLING UNIT DIAG.

The Automatic Calling Unit (ACU) Diagnostic tests the HP12589A ACU interface for hardware errors. The program requires the 12589-60005 test connector in order to isolate the interface from the data set.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A217-20343A

TTY OFFLINE TEST

This is a tape that checks the basic mechanical operation of the HP2749A, 2752A, and 2754A/B teleprinters. It checks horizontal and vertical alignment, line length, and feed and character spacing.

SUPPORTED CUPERTINO

A217-20393A

SEND (ONLY) INTERFACE

This diagnostic tests the HP12622A interface for hardware errors. The program requires the 12622-60005 test connector in order to isolate the interface from the data set.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A217-20417C

2116A/B TTY TEST

This is a 2116 program to test proper operation of the Teleprinter Driver. The 12531B Interface Kit is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A217-20420B

2115/14 TTY TEST

This is a 2115A/14A program to test the proper operation of the teleprinter. The 12531B Interface Kit is used.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A217-20535A

SEND/RECEIVE INTERFACE (HP12587A) TEST

This program tests the 12587A interface for hardware errors. The program requires the 12587-60005 test connector in order to isolate the interface from the data set.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A217-20538A

RECEIVE (ONLY) INTERFACE (12621) TEST

This program tests the 12621 interface for hardware errors. The program requires the 12621-60005 test connector in order to isolate the interface from the data set.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A218-20412B

2116 TIME BASE GENERATOR TEST

This is a 2116A/B program to test the Time Base Generator. The 12539A Interface Kit is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A218-20416C

16 BIT DUPLEX REGISTER TEST

This is a 2114-15-16 program to verify the proper transfer of data via the 12554A 16 Bit Duplex Register Interface Card, 12566A Micro Circuit Duplex Register Interface Card, or 12597A 8 Bit Duplex Register Interface Card.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A218-20418D

MEMORY PROTECT DIAGNOSTIC

This a 2116 program to verify proper operation of memory protect logic. The 12581A Interface Kit is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A218-20419C

DMA DIAGNOSTIC

This is a 2115-16 program to test proper operation of Direct Memory Access option (DMA).

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A218-20421A

2115/14 TIME BASE GENERATOR TEST

This is a 2114A/15A program to test the Time Base Generator. 12539A Interface Kit is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A218-20422B

EXTENDED ARITHMETIC UNIT DIAGNOSTIC

This is a 2115-16 program to verify proper operation of Extended Arithmetic Unit (EAU). 12579A Interface Kit is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A218-20423A

RELAY REGISTER DIAGNOSTIC

This is a 2114-15-16 program to test the relay register. The 12551B Interface Kit is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A218-20428A

POWER FAIL WITH AUTO RESTART TEST

This is a 2114-15-16 program to verify orderly shut down of computer on power failure when equipped with 12588A Power Fail Interrupt Option.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A218-20434B

2116 POWER FAIL INTERRUPT TEST

This is a 2116 program to verify correct operation of the power fail interrupt upon power failure.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A218-20439A

I/O MULTIPLEXOR DIAGNOSTIC

This is a 2114-15-16 diagnostic to verify operation of the teleprinter multiplexor and the 12584A Interface Kit.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A218-20524A

2114B DMA GENERAL DIAGNOSTIC

The 2114B DMA General Diagnostic tests the DMA card for hardware errors. Optimal use of the program would require (as additional hardware) a teleprinter and a micro-circuit register (12566A-M1 or M2) or 16 bit Duplex (12554A or 12554A-M1).

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A218-20525A

2114B DMA RATE AND TRANSFER DIAGNOSTIC

The 2114B DMA Rate and Transfer Diagnostic tests the ability of the DMA to steal every cycle and to transfer data to all of memory. The program requires certain hardware modifications to be made to the DMA card prior to execution.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A218-20546A

2114B HIGH SPEED I/O CHANNEL RATE TEST

This is a 2114 program to test the 12616A High Speed I/O Channel.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A301-22084A

INTEGRATED MATH CALCULATOR PROGRAM

This program causes the HP computer and a teleprinter to operate similarly to many desk-top calculators. The teleprinter keyboard is used to command up to 54 different arithmetic operations and functions, as well as to enter integer and floating point decimal variables.

ASSEMBLY LANGUAGE (1089) (2770)

CONTRIBUTED
Andre F. Peterlunger
Sandoz - Chemicals, Switzerland

A302-22085A

EXTENDED PRECISION CALCULATOR

This program causes the HP computer and a teleprinter to operate similarly to many desk-top calculators. The teleprinter keyboard is used to command up to 48 different arithmetic functions and operations, as well as to enter integer or floating point decimal variables. This program requires the Extended Precision Library.

ASSEMBLY LANGUAGE (1024) (3218)

CONTRIBUTED
Andre F. Peterlunger
Sandoz - Chemicals, Switzerland

A302-22097A

DOUBLE PRECISION INTEGER LIBRARY

This library allows the four operations -- addition, subtraction, multiplication, division -- to be used with double precision integers, as well as the input and output of double precision integers to 2,147,483,648. Any overflow halts the computer.

FORTRAN II (531) (2220)

CONTRIBUTED
Enrico Mariani
HP, Italy/Milan

A306-22017A

GAMMA FUNCTION

Subroutine GAMMA computes the gamma function for a given argument. Method: the recursion relation and polynomial approximation. FORTRAN-callable.

FORTRAN II (231) (775)

CONTRIBUTED

A306-22018A

K BESSEL FUNCTION

Subroutine BESK computes the K Bessel function for a given argument and order. Method: computes zero order and first order Bessel functions using series approximations and then computes Nth order function using recurrence relation. The accuracy of this routine is about five places. FORTRAN-callable.

FORTRAN II (772) (1547)

CONTRIBUTED

A306-22019A

I BESSEL FUNCTION

Subroutine BESI computes the I Bessel function for a given argument and order. Method: uses series or asymptotic approximation depending on range of arguments. The accuracy of the routine is about five places. FORTRAN-callable.

FORTRAN II (366) (1181)

CONTRIBUTED

A306-22020A

Y BESSEL FUNCTION

Subroutine BESY computes the Y Bessel function for a given argument and order. Method: recurrence relation and polynomial approximation technique. The accuracy of this subroutine is usually five places. FORTRAN-callable.

FORTRAN II (833) (1709)

CONTRIBUTED

A306-22021A

LOCATE MAXIMUM-MINIMUM INTEGER

A subroutine to determine the maximum and minimum values and their positions within an integer array. FORTRAN-Callable.

ASSEMBLY LANGUAGE (54) (54)

CONTRIBUTED
Allan P. Sherman
HP, Medical Electronics Division

A306-22117A

TRANSFORMATIONS

This program performs twenty-five transformations on one or two input variables. The transformations include square root, log, exponential, and combination trig and square root functions, as well as various linear functions. (STAT-PACK)

FORTRAN II (3728) (6005)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A309-22022A

SOLUTION OF LINEAR LEAST SQUARES PROBLEMS

Subroutine LLSQ solves the linear least squares problems. LLSQ minimizes the Euclidean norm of B-AxX, where A is an M by N matrix with M not less than N. In the special case when M = N, systems of linear equations may be solved. Householder transformations are used to transform matrix A to upper triangular form. After having applied the same transformation to the right hand side matrix B, an approximate solution of the problem is computed by back substitution.

FORTRAN II (938) (1581)

CONTRIBUTED

A310-22023A

TRAPEZOIDAL INTEGRATION

Subroutine QTFG computes the vector of integral values for a given general table of argument and function values. Beginning with Z(1)=0, evaluation of vector Z is done by means of trapezoidal rule (second order formula). FORTRAN-callable.

FORTRAN II (112) (478)

CONTRIBUTED

A310-22024A

TRAPEZOIDAL INTEGRATION, EQUAL INTERVAL ARGUMENT

Subroutine QTFE computes the vector of integral values for a given equidistant table of function values. Beginning with Z(1)=0, evaluation of vector Z is done by means of trapezoidal rule (second order formula). FORTRAN-callable.

FORTRAN II (98) (464)

CONTRIBUTED

A310-22025A

SIMPSONS AND NEWTONS 3/8 INTEGRATION EQU. INT. ARG.

Subroutine QSF computes the vector of integral values for a given equidistant table of function values. Input vector Y is not less than 3. Beginning with Z(1)=0, evaluation of vector Z is done by means of Simpsons Rule combined with Newtons 3/8 Rule. Truncation error is of order H to the 5th (i.e., fourth order method). Only in case NDIM=3 truncation error of Z(2) is of order H to the 4th. FORTRAN-callable.

FORTRAN II (727) (1108)

CONTRIBUTED

A310-22026A

HERMITIAN FOURTH ORDER INTEGRATION

Subroutine QHFG computes the vector of integral values for a given general table of argument, function and derivative values. FORTRAN-callable.

FORTRAN II (143) (455)

CONTRIBUTED

A310-22027A

HERMITIAN FOURTH ORDER INTEGRATION EQU. INT. ARG.

Subroutine QHFE computes the vector of integral values for a given equidistant table of function and derivative values. FORTRAN-callable.

FORTRAN II (133) (499)

CONTRIBUTED

A310-22028A

HERMITIAN SIXTH ORDER INTEGRATION

Subroutine QHSG computes the vector of integral values for a given general table of function, argument, first derivative, and second derivative values. FORTRAN-callable.

FORTRAN II (187) (553)

CONTRIBUTED

A310-22029A

HERMITIAN SIXTH ORDER INTEGRATION EQU. INT. ARG.

Subroutine QHSE computes the vector of integral value for a given equidistant table of function, first derivative, and second derivative values. FORTRAN-callable.

FORTRAN II (168) (534)

CONTRIBUTED

A310-22144A

INTEGRATION

This subroutine evaluates the definite integral for a function with values of equidistant discrete points. The integral is computed by Simpson's method and gives the exact value of the integral if the function is a polynomial of degree not greater than 3. There must be an odd number of data points,N. FORTRAN-callable.
(STAT-PACK)

FORTRAN II (672) (1227)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A311-22030A

COMPLEX ROOTS OF A REAL POLYNOMIAL

Subroutine PRQD calculates all real and complex roots of a given polynomial with coefficients. The roots of the polynomial are calculated by means of the quotient-difference algorithm with displacement. FORTRAN-callable.

FORTRAN II (1888) (2582)

CONTRIBUTED

A312-22031A

ADD ROWS OF MATRICES

This subroutine adds corresponding elements of a row of one matrix to a row of another matrix. The output matrix must not be stored in the same location as the input matrix unless the input matrix is general. FORTRAN-callable.

FORTRAN II (67) (404)

CONTRIBUTED

A312-22032A

RANK AND BASIS

Subroutine MFGR will for a given M by N matrix: determine rank and basis, factorize a submatrix of maximal rank, express non-basic rows in terms of basic rows, and express basic variables in terms of free ones. FORTRAN-callable.

FORTRAN II (708) (1221)

CONTRIBUTED

A312-22118A

MATRIX INVERSION SUBROUTINES

There are five subroutines in this package:
a) Symmetric Matrix Inversion
b) Maximum Pivotal Element Matrix Inversion
c) Short, Quick Matrix Inversion
d) Matrix Inversion with Check for Significance
e) Matrix Inversion, Simultaneous Equation Solver (STAT-PACK)

FORTRAN II (1932) (2541)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A312-22119A

MATRIX ARITHMETIC SUBROUTINE

This subprogram will add, subtract, or multiply two two-dimensioned matrices which are conformable. This subprogram is designed to handle matrices of a maximum order 20 x 20.
(STAT-PACK)

FORTRAN II (224) (696)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A312-22120A

MATRIX ARITHMETIC

This program will add, subtract, or multiply two two-dimensioned matrices which are conformable. This program is designed to handle matrices of a maximum order 20 x 20.
(STAT-PACK)

FORTRAN II (3172) (4773)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A312-22121A

CROSS-TABULATION

This program performs a cross-tabulation of two single-dimensioned fixed point arrays using an X-axis, Y-axis scheme. It is designed to handle a maximum of 9999 values for each cell of the cross-tabulation array.
(STAT-PACK)

FORTRAN II (3620) (5023)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A314-22033A

SOLUTION OF SIMULTANEOUS LINEAR EQUATIONS

Subroutine GELG solves a general system of simultaneous linear equations. The solutions are obtained by means of Gauss-elimination with complete pivoting. FORTRAN-callable.

FORTRAN II (610) (1154)

CONTRIBUTED

A314-22034A

SOLUTION OF SIMULTANEOUS LINEAR EQUATIONS, BAND-MATRIX

Subroutine GELB solves a system of simultaneous linear equations with a coefficient matrix of band structures. The solution is obtained by means of the Gauss-elimination with column pivoting only, in order to preserve the band structure of the remaining coefficient matrices. FORTRAN-callable.

FORTRAN II (877) (1384)

CONTRIBUTED

A314-22035A

SOLUTION OF SIMULTANEOUS LINEAR EQU., SYMMETRIC MATRIX

Subroutine GELS solves a system of simultaneous linear equations with a symmetric coefficient matrix whose upper triangular part is assumed to be stored columnwise. The solution is obtained in the main diagonal, in order to preserve the symmetry in the remaining coefficient matrices. FORTRAN-callable.

FORTRAN II (605) (1149)

CONTRIBUTED

A314-22122A

SIMULTANEOUS EQUATION SOLVER

This program will solve up to 22 equations simultaneously using the Guassian elimination method. A check for matrix singularity is not performed.
(STAT-PACK)

FORTRAN II (388) (997)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A314-22123A

SIMULTANEOUS EQUATION SOLVER ROUTINE

This subprogram solves up to 22 equations simultaneously using the Guassian elimination method. A check for matrix singularity is not performed. FORTRAN-callable.
(STAT-PACK)

FORTRAN II (710) (2440)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A316-22036A

REAL FOURIER TRANSFORM

Subroutine RHARM finds the Fourier coefficients of a one dimensional real array, Cooley-Tukey. Requires A316-22037A (Subroutine HARM). FORTRAN-callable.

FORTRAN II (637) (3873)

CONTRIBUTED

A316-22037A

COMPLEX FOURIER TRANSFORM

Subroutine HARM performs discrete complex Fourier transforms on a complex three dimensional array where each dimension is a power of 2. FORTRAN-callable.

FORTRAN II (2493) (3368)

CONTRIBUTED

A318-22038A

SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS

Subroutine HPCG solves a system of first order ordinary differential equations using Hammings Modified Predictor-Corrector Method. Runge-Kutta is used to obtain starting points. Two user-supplied routines compute function value of system, and provide user defined output format. RTE or DOS. FORTRAN-callable.

FORTRAN II (2572) (2688)

CONTRIBUTED

A402-22124A

AUTOCORRELATION AND SPECTRAL DENSITY

This program calculates the autocorrelation coefficients and power spectral density for a given set of data points and a maximum lag (i.e., harmonic). The input data may be normalized if desired by specifying the input parameter NORM. This program will handle a maximum of 300 data points.
(STAT-PACK)

FORTRAN II (4188) (6164)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A402-22125A

MOVING AVERAGES

This program computes a set of moving averages of order N from a time series of M elements. The time series may have a maximum of 2000 elements. M - N + 1 moving averages will be computed and tabulated. The time series may have a maximum of 2000 elements and the order of the moving average must be less than the number of elements in the time series.
(STAT-PACK)

FORTRAN II (4506) (6138)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A402-22126A

CROSS-CORRELATION ANALYSIS

This program computes a set of cross-correlation coefficients for two time series. The minimum and maximum lag input determines the number of coefficients computed. This program will handle a maximum of 900 elements for each time series.
(STAT-PACK)

FORTRAN II (4345) (6265)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A403-22127A

DISCRIMINANT ANALYSIS

Given two groups of data with up to 20 variables per group, the program calculates a linear function of the variables by which the two groups can be discriminated. The linear function found is the one which maximizes the ratio of difference between the group means to the standard deviations within the species.
(STAT-PACK)

FORTRAN II (3563) (5286)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A404-22045A

REGRESSION/CORRELATION

This program performs simple regression and correlation analysis on a series of values of two variables. It computes the correlation coefficient between the variables and estimates up to four regression equations using the method of least squares.

BASIC (1688) (1688)

CONTRIBUTED
W. D. Nichols
Woods Hole Oceanographic Institute

A404-22128A

LEAST SQUARES REGRESSION

This program performs the calculations for least-square polynomial regression up to degree three. The user has the option of (a) specifying the degree of fit - linear, quadratic or cubic, or (b) specifying a fit through all three degrees. An analysis of variance is performed for each polynomial fit as well as an analysis of individual terms. If specified, the predicted values are also included in the analysis. This program will handle a maximum of 400 (X,Y) data pairs.
(STAT-PACK)

FORTRAN II (3966) (5806)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A404-22129A

LINEAR REGRESSION INTERVAL ESTIMATES

This program computes the linear regression function of one independent variable and the confidence prediction intervals for predicted values of the dependent variable, given a 0.90, 0.95 or 0.99 confidence level. The regression function is evaluated by the method of least squares. An analysis of variance is included. This program will handle a maximum of 750 (X,Y) data pairs.
(STAT-PACK)

FORTRAN II (4312) (6558)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A404-22130A

POLYNOMIAL REGRESSION

This program generates an approximating polynomial up to the 15th degree by the method of least square. The degree of the regression is determined by an iterative technique, the iterative process being terminated by either (a) when the computer standard error of the dependent variable for the ith iteration (degree i) is less than or equal to the maximum allowable error specified by the user, or (b) the program has fitted the experimental data through 15th degree polynomial. This program will handle a maximum of 350(X,Y) data pairs.
(STAT-PACK)

FORTRAN II (4019) (6110)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A404-22131A

POLYNOMIAL REGRESSION CONFIDENCE INTERVALS

This program will generate confidence interval estimates for a specified confidence level for each predicted point of an ith degree approximating polynomial, (i=1,6). The user may select confidence level of 0.90, 0.95, or 0.99. Estimates of the covariance-regression matrix is also included within the analysis. The program will handle a maximum of 400 (X,Y) data pairs.
(STAT-PACK)

FORTRAN II (3565) (5938)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A404-22132A

STEPWISE REGRESSION

Multiple regression is used to obtain the best fit to a set of observations consisting of one dependent variable and multiple independent variables. In the stepwise regression, a number of intermediate regression equations are obtained as well as the complete regression equation. These intermediate equations are obtained by adding one variable at a time. The variable added is that which makes the greatest improvement in the goodness of fit (in the sense of least squares). The insignificant variables are removed from the regression equation before the addition of a new variable.
(STAT-PACK)

FORTRAN II (3038) (6376)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A404-22133A

BIOASSAY

This program computes predicted X values for given Y values and the linear regression data for Y on X. If the regression data is not immediatedly available, the program will accept X and Y values, compute the predicted X values from the given Y values. For each predicted X, the output consists of the number Y input for the point, the average of these Y values, the predicted X value itself and the upper and lower bounds of the 95 percent confidence interval for the predicted X values. This program is designed to handle a maximum of 600 (X,Y) data pairs.
(STAT-PACK)

FORTRAN II (4441) (6354)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A404-22134A

ORTHOGONAL POLYNOMIAL REGRESSION

This program will generate a regression polynomial in one independent variable up to the fifth degree by means of orthogonal polynomials. A "general statistics" analysis is provided (including the mean, variance, etc.) and confidence limits are generated for the sample mean at the 0.90, 0.95, and 0.99 confidence levels. The regression analysis is then computed yielding uncorrelated estimators. The polynomial is re-written in terms of the original variable X and an analysis of variance is performed term by term. Back solutions are also included in the analysis. This program is designed to handle a maximum of 26 data points at equally spaced distances along the ordinate. The maximum polynomial generated is of degree 5.
(STAT-PACK)

FORTRAN II (2982) (5867)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A404-22135A

LINEAR REGRESSION WITH REPLICATION

This program computes a linear regression and analysis of variance on data with equal or unequal number of replications (i.e., multiple Y values for a given X value). This program will handle a maximum of 150 unweighted (X,Y) data pairs.
(STAT-PACK)

FORTRAN II (4339) (6223)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A404-22136A

NON-LINEAR REGRESSION

This program performs non-linear regression calculations to fit a set of data to a function specified by the user. Corrections to a starting value of the parameter values are computed by iteration cycles until the corrections make little or no change (within a specified tolerance) in the error sum of squares. It should be pointed out that even the final error sum of squares may be quite large if the data does not fit the desired model well. The program is set up to handle 10 parameters and the model used must have only one X value for each Y value. The program is dimensioned to estimate up to ten parameters from 150 pairs of X and Y values.
(STAT-PACK)

FORTRAN II (3135) (5169)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A406-22137A

CUMULATIVE DISTRIBUTION

This program generates a frequency distribution for a single data set consisting of 1500 points or less. The mean, median, standard deviation and interquartiles are also included within the analysis.
(STAT-PACK)

FORTRAN II (3612) (8496)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A407-22138A

KENDALL'S COEFFICIENT OF CONCORDANCE;W

This program performs the necessary calculations for Kendall's Coefficient of Concordance : W. This is a measure of the relation among several rankings of N objects or individuals. There are K sets of rankings. Ties are checked for and the degree of association, W, is adjusted accordingly. This program is designed to handle a maximum of 31 sets of rankings with up to 20 objects being ranked per set.
(STAT-PACK)

FORTRAN II (4155) (5916)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A407-22139A

KENDALL'S COEFFICIENT OF CONCORDANCE

This program performs the necessary calculations for Kendall's Coefficient of Concordance. There is no check for ties. This program is designed to handle an unlimited number of sets of rankings with a maximum of 900 objects over all sets.
(STAT-PACK)

FORTRAN II (2731) (4561)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A407-22140A

KENDALL'S TAU CORRELATION

This program will compute Kendall's tau, a rank correlation coefficient, and associated statistics for a given set of ordered (X,Y) data pairs. This program will also determine the presence or absence of ties in the set of data and adjusts tau accordingly. It will handle a maximum of 300 (X,Y) data pairs.
(STAT-PACK)

FORTRAN II (3597) (5434)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A408-22039A

MEAN, DEVIATION, AND CORRELATION COEFFICIENTS

Subroutine CORRE computes means, standard deviations, sums of cross-products of deviations, and correlation coefficients by product-moment correlation coefficients. A user supplied subroutine permits data input from external device rather than from CORRE. FORTRAN-callable.

FORTRAN II (924) (1532)

CONTRIBUTED

A408-22043A

CHEBYCHEV POLYNOMIAL CURVE FIT

This program fits least-squares polynomials to bivariate data, using an orthogonal polynomial method. Limits are 11th degree fit and a maximum of 100 data points. Program allows user to specify the lowest degree polynomial to be fit, and then fits the polynomials in order of ascending degree. At each stage, the index of determination is printed, and the user has the choice of going to the next higher degree fit, seeing either of two summaries of fit at that stage, or of stopping the program.

BASIC (16K) (16K)

CONTRIBUTED

A408-22141A

GENERAL STATISTICS

This program will characterize a particular set of data by performing elementary statistical calculations (point estimates), determining the 0.95 and 0.99 confidence intervals for the sample mean assuming the data is normally distributed, and generating a histogram of the data points. This program will handle a maximum of 900 unweighted and ungrouped data points.
(STAT-PACK)

FORTRAN II (3920) (5821)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A408-22142A

GENERAL STATISTICS FOR MULTIPLE GROUPS

This program generates point estimates (mean, variance, standard deviation, and standard errors) and confidence interval estimates for the sample mean. The analysis may be performed for a maximum of 99 sets of data during one run. The user can elect to determine confidence intervals for the sample mean at the 0.90, 0.95, or 0.99 level of confidence.
(STAT-PACK)

FORTRAN II (3303) (5304)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A408-22143A

PROBABILITY SUBPROGRAMS

There are nine probability functions in this package: Normal Cumulative Probability Function, Cumulative Binomial Function, Cumulative Poisson Function, F Cumulative Probability Function, Chi-Square Cumulative Distribution Function, Chi-Square Subroutine, Inverse F Distribution Function, Student's t Distribution Subroutine, and Normal Probability Function.
(STAT-PACK)

FORTRAN II (2702) (3875)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A408-22145A

CONFIDENCE INTERVAL FOR MEAN AND VAR. OF A NORM. DIST.

This program calculates the upper and lower confidence limits for the mean and variance of a sample assuming the data to be normally distributed. The user may specify a confidence level of 0.90, 0.95, or 0.99 for the confidence limits of the sample mean. This program will automatically generate 0.95 confidence limits for the sample variance. The program will handle a maximum of 900 data points. (STAT-PACK)

FORTRAN II (2388) (5289)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A408-22146A

SAMPLE SIZE DETERMINATION

This program utilitzes an estimate of the sample variance, s-squared based upon M degrees of freedom and a specified maximum confidence interval length to determine the sample size required to give any test level estimate of the population mean. This program uses a trial and error method with the initial sample size specified by the user. The sample size is determined for confidence levels of 0.90, 0.95, and 0.99.
(STAT-PACK)

FORTRAN II (769) (3015)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A409-22147A

MULTIPLE CORRELATION

This subroutine calculates the means and standard deviations for each variable, the raw sums of squares and cross-products matrix, the variance-covariance matrix, and the correlation matrix. This subroutine is designed to handle a maximum of 20 variables and a maximum of 999 observations per variable.
(STAT-PACK)

FORTRAN II (2454) (3215)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A410-22148A

COMPLETELY RANDOMIZED DESIGN

This program generates the necessary information to perform an analysis of variance on a completely randomized experimental design. The program is designed to handle a maximum of 400 treatments and an unequal number of observations per treatment with no restriction on this number.
(STAT-PACK)

FORTRAN II (3791) (5580)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A410-22149A

COMPLETELY RANDOMIZED DESIGN WITH SUBSAMPLING

This program performs an analysis of variance of data on a completely randomized design with subsampling. There can be either equal or unequal number of observations per treatment. For unequal observations per subsample, Satterthwaite's Approximate Test procedure is used. This program is designed to handle a maximum of 20 treatments with up to 20 samples per treatment. There is no limit to the number of determinations per sample and treatment.
(STAT-PACK)

FORTRAN II (3567) (5462)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A410-22150A

RANDOMIZED COMPLETE BLOCK DESIGN

This program generates the necessary information to perfrom an analysis of variance on a randomized complete block experimental design. This program will handle a maximum of 100 treatments and a maximum of 100 blocks.
(STAT-PACK)

FORTRAN II (2679) (4447)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A410-22151A

RANDOMIZED COMPLETE BLOCK DESIGN WITH SUBSAMPLING

This program generates the necessary information to perform an analysis of variance for a randomized complete block design with subsampling. This program is designed to handle a maximum of 30 treatments and 30 blocks.
(STAT-PACK)

FORTRAN II (2304) (5356)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A410-22152A

TWO-WAY FACTORIAL DESIGN

This program performs an analysis of variance for a two-way factorial in a randomized complete block design. The F test in this program is for a fixed model. Each replicate must be balanced (i.e., the same number of observations for each level of each factor). This program will handle a maximum of 20 levels per factor and 8 replicates per level.
(STAT-PACK)

FORTRAN II (2483) (4495)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A410-22153A

THREE-WAY FACTORIAL DESIGN

This program generates the necessary information to perform a three-factor factorial analysis of variance for a randomized complete block design with replications. The computed F statistic assumes a "fixed effect" model. It is designed to handle a maximum of 8 levels of Factor A, 8 levels of Factor B, 5 levels of Factor C and 8 replications.
(STAT-PACK)

FORTRAN II (3367) (5174)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A410-22154A

ANALYSIS OF VARIANCE INFORMATION GENERATOR

This program generates the necessary information to perform an analysis of variance on a randomized block experimental design with subsampling. There may be an equal or unequal number of subsamples per experimental unit (treatment-block combination). Computation of the noncentrality parameter is also included in the analysis. Interaction between treatments and blocks is not assumed in the analysis. This program is designed to handle a maximum of 7 treatments, 7 blocks, and a maximum of 99 subsamples per treatment-block combination. (STAT-PACK)

FORTRAN II (2528) (5449)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A412-22155A

DUNCAN'S MULTIPLE RANGE TEST

This program computes all statistics and tests involved in Duncan's Multiple Range Test with equal or unequal readings per group. The data input can either be the means and the mean square error or the observations themselves. In the latter case, an analysis of variance for a completely randomized design is performed. Significance levels of 0.05 and 0.01 are available. This program is designed to handle a maximum of 100 treatments with an equal or unequal number of observations per treatment. (STAT-PACK)

FORTRAN II (3766) (5628)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A412-22156A

PAIRED t-TEST

The Student's t-test for paired observations applies to the case of two samples in which the observations of one sample may be logically related or paired (in time or space), item by item, with the observations of the second sample. The program will calculate point estimates (mean, standard deviation, standard error of the mean) for both samples and then calculate the point estimates and value of the Student's t on the difference between samples. The value of the Student's t is computed given a specified level of confidence. The user may select a confidence level of 0.90, 0.95, or 0.99. This program will handle a maximum of 600 unweighted (X,Y) data pairs. (STAT-PACK)

FORTRAN II (4542) (6547)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A412-22157A

BARTLETT'S HOMOGENEITY OF VARIANCE TEST

This program will test the hypothesis that the estimated variance from k samples are homogeneous. A one-sided alternative at the 0.95 confidence level is used as the test statistic; that is, if the calculated chi-square value exceeds the tabular value of chi-square at the designated probability of a Type I error, 0.05, the assumption of homogeneous or constant variances over the k samples is rejected. This program is designed to handle a maximum of 10 samples.
(STAT-PACK)

FORTRAN II (2864) (5687)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A412-22158A

KOLMOGOROVE-SMIRNOV GOODNESS OF FIT TEST

This program will compute, for maximum of 999 data points, the Kolmogorove-Smirnov goodness of fit test for a specified probability distribution. The input data can be tested for fit against one of the following functions: Binomial, Chi-Square, F, Normal, Poisson, or Student's t. The user specifies one of the above as a "test PDF" via the subroutine EXPEC. See A408-22143A to obtain any of these. The user has the option of specifying the number of class intervals, letting the program generate class intervals by use of Sturges' rule, or specifying the number of intervals and upper bounds of each interval.
(STAT-PACK)

FORTRAN II (3534) (5623)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A412-22159A

CHI-SQUARE GOODNESS OF FIT TEST

This program will perform the Chi-Square goodness of fit test and compute the Chi-Square value of the test for one of the following: Binomial, Chi-Square, F, Normal, Poisson, Student's t. See A408-22143A to obtain any of these probability distribution functions. The user has the option of specifying the upper and lower bounds for a given number of intervals or reading in the endpoints of each interval.
(STAT-PACK)

FORTRAN II (3627) (5712)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A412-22160A

TESTS OF HYPOTHESIS FOR VARIANCES

This program will test one of the following conditions:
(1) whether the variance of a normal population equals a specified variance,
(2) whether variances are equal providing both come from a normal population.
Results are determined operating under a 95 percent confidence interval. This program will handle a maximum of 500 (X,Y) data pairs or 1000 data points (X).
(STAT-PACK)

FORTRAN II (3009) (6044)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A412-22161A

TESTS OF HYPOTHESIS FOR MEANS

This program will test (a) whether the mean of a normal population equals a specified value or (b) whether two means are equal providing both come from a normal population. This test will first assume that the means are not equal and then assume that they are. For both tests, results are determined operating with a user selected confidence interval of 0.90, 0.95, or 0.99.
(STAT-PACK)

FORTRAN II (4880) (6618)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A606-22087A

TOP MANAGEMENT DECISION GAME

This program simulates business conditions and the mechanics for operating a business game. Ten to sixty people, divided into teams representing fictitious companies, may participate. Team decisions on price, promotion, capacity, research, incentives, and training in a one-product market are quickly converted into results; thus, teams can make up to three sets of decisions in a two- or three-hour period.

BASIC

CONTRIBUTED
Joseph Nordstrom
Bowling Green University

A900-20201B

PLOTTER LIBRARY

This library provides FORTRAN-callable subroutines to perform the following functions: (1) scale data to fit specified graph size, (2) generate scaled X and Y axes, (3) generate line or curve graph with symbols or data points printed on graph.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A900-20202B

4K RELOCATABLE LIBRARY - NON EAU

This library contains arithmetic, I/O service, and miscellaneous routines for use on 2114-15-16 computers with 4K of storage and without EAU.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A900-20203A

EXTENDED PRECISION LIBRARY

This library is used with either the relocatable program library or the 4K program library to allow extended precision decimal constants during program execution. Each extended constant provides 16 bits greater accuracy and requires three words. It is used with the math, arithmetic, exponential or service routines.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A900-20204A

4K RELOCATABLE LIBRARY-EAU

This library consists of FORTRAN callable subroutines for the 2114-15-16 with 4K storage and EAU. It differs from the standard relocatable program library in that subroutines to allow calls from ALGOL programs are omitted.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A900-20237A

LIBRARIAN

The Librarian is an absolute routine (using SIO Drivers) that modifies library tapes of relocatable subroutines. It produces a new library tape listing the relocatable subroutines in the exact order specified by the user.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A900-20728C

RTE RELOCATABLE LIBRARY

This library contains FORTRAN callable math, I/O service, and miscellaneous routines for use under RTE control.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A900-20810A

RTE/DOS PLOTTER LIBRARY

This library provides FORTRAN-callable subroutines to perform the following functions: (1) scale data to fit specified graph size, (2) generate scaled X and Y axes, (3) generate line or curve graph with symbols or data points printed on graph.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A900-20974A

DOS RELOCATABLE LIBRARY

This library contains FORTRAN callable math, I/O service, and miscellaneous routines for use under DOS control.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A900-24018A

BCS RELOCATABLE PROGRAM LIBRARY - NON-EAU

This library consists of FORTRAN callable subroutines grouped into five categories: math routines, arithmetic and exponential routines, input/output service routines, miscellaneous routines. 8K of core memory is required. This version is used for computers without extended arithmetic unit (EAU).

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A900-24019A

BCS RELOCATABLE PROGRAM LIBRARY-EAU

This library consists of FORTRAN callable subroutines grouped into five categories: math routines, arithmetic and exponential routines, input/output service routines, miscellaneous routines. 8K of core memory is required.

ASSEMBLY LANGUAGE

SUPPORTED CUPERTINO

A901-22040A

SCOPE DISPLAY DEMO

"SCOPE DISPLAY DEMO" is a self-teaching tool for learning how to use the X-Y Scope Display Subsystem (HP2331A) or any oscilloscope used with the 12555A Interface Kit and Scope Display Library (A900-20208). It also instructs the user in positioning ASCII strings on the scope before putting them into his FORTRAN program. By means of the switch register the operator is able to use any of the calls available in the Scope Display Library. FORTRAN-callable.

FORTRAN II (3016) (6428)

CONTRIBUTED
Thomas Winker
HP, Neely Sales Region

A901-22099A

DOS DEMO

The Disc Operating System Demonstration Program exercises several major features of the operating system, including batch processing and disc file management. The demonstrator is furnished as a deck of mark sense control cards. Two source programs are supplied on paper tape, one written in HP FORTRAN and one in Assembly Language. The operator can switch modes from batch to keyboard monitor.

FORTRAN II (8K) (8K)

CONTRIBUTED
Mark Korell
HP, Cupertino Division

A902-22041B

PAPER TAPE DUPLICATOR

The Duplicator is a reliable method of copying source, absolute, or relocatable tapes. It will work from a photo-reader for input, and a buffered teleprinter or high-speed punch for output. Tapes are read into core, punched and verified from core. Since core storage is required for the tape image, the size of the tape which may be duplicated is limited by core. The program will verify checksum for absolute or relocatable tapes during input, and will also check for even parity ASCII if desired. It will convert ASCII tapes into even parity and will also dump a configured "loader-loader" on a buffered teleprinter. The program is configured in a manner similar to the standard SIO configuration technique.

ASSEMBLY LANGUAGE (373) (373)

CONTRIBUTED
Charles Chernack
HP, Eastern Sales Region

A903-22094A

GAME OF TIC-TAC-TOE (JEU DE MORPIONS)

This program is a 5-in-a-row version of "TIC-TAC-TOE", played on a grid 20 x 20 with the conversation in either French or English.

ASSEMBLY LANGUAGE (2277) (2368)

CONTRIBUTED
Paul Gavarini
HP, France/Orsay

A904-22162A

XY PLOTTER ON PRINTER

This line printer plotter will accept an X array, scale the values of X between 0 and 100 spaces, and plot the X array on the printer against either the element number of the array or another array, Y. The output may be a print plot or a bar plot. The plotter can commence at any point in the array. This routine will accept a maximum of 200 (X,Y) data pairs.
(STAT-PACK)

FORTRAN II (1000) (3726)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A904-22163A

TIME SERIES PLOTTER

This subprogram, available in function form, will plot a fixed point integer on the line printer. If the value of the fixed point ranges from 0 to 50, its position on the graph will be represented by an asterisk. If the value of the fixed point integer is greater than 50, the value of the integer will be printed on the extreme right hand side of the output.
(STAT-PACK)

FORTRAN II (282) (558)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

A904-22164A

HISTOGRAM PLOTTER

This program will sort a single dimensioned array in ascending order and (a) plot a histogram of the data points on the standard output device or (b) calculate a frequency distribution of the data points, or (c) generate a histogram and frequency distribution.
(STAT-PACK)

FORTRAN II (1997) (4760)

CONTRIBUTED
Roland Jahn
HP, Medical Electronics Division

SECTION II
PRICE LIST

20000A

INPUT/OUTPUT CONTROL

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20001B

4K RELOCATING LOADER

B01 -	$ 15
B02 -	$ 25
S01 -	$ 75
S02 -	$ 105
L00 -	$ 10
A01 -	$ 100
A02 -	$ 140

20002B

BCS DEBUG ROUTINE

B01 -	$ 10
B02 -	$ 20
S01 -	$ 40
S02 -	$ 60
L00 -	$ 5
A01 -	$ 55
A02 -	$ 85

20005A

BCS TAPE READER DRIVER D.01

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20006A

BCS TAPE PUNCH DRIVER D.02

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20007A

BCS INCREMENTAL MAG TAPE DRIVER D.20

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20008B

BCS 8-4-2-1 DSI DRIVER D.40

B01 -	$ 10
B02 -	$ 20
S01 -	$ 10
S02 -	$ 20
L00 -	$ 5
A01 -	$ 25
A02 -	$ 45

20009B

BCS DVM PROGRAM DRIVER D.41

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20010C

BCS 8-4-2-1 SCNR CONTROL DRIVER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20011B

BCS (4221/8421) DSI DRIVER D.40A

B01 -	$ 10
B02 -	$ 20
S01 -	$ 10
S02 -	$ 20
L00 -	$ 25
A01 -	$ 25
A02 -	$ 45

20012C

BCS (8421/4221) SCNR CONTROL DRIVER D.42A

B01 -	$ 10
B02 -	$ 20
S01 -	$ 10
S02 -	$ 20
L00 -	$ 5
A01 -	$ 25
A02 -	$ 45

20013E

BCS HP2020 MT DRIVER D.21

B01 -	$ 10
B02 -	$ 20
S01 -	$ 45
S02 -	$ 55
L00 -	$ 5
A01 -	$ 60
A02 -	$ 80

20014A

BCS PLOTTER DRIVER D.10

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20015B

INPUT/OUTPUT CONTROL (BUFF.)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 25
S02 -	$ 35
L00 -	$ 5
A01 -	$ 40
A02 -	$ 60

20016A

BCS TAPE PUNCH DRIVER D.02A (IBM 8 LEVEL)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20017B

BCS TTY DRIVER D.00

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20018E

BCS RELOCATING LOADER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 60
S02 -	$ 90
L00 -	$ 5
A01 -	$ 75
A02 -	$ 115

20019C

BCS CARD READER DRIVER D.11

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20021B

PREPARE CONTROL SYSTEM
B01 - $ 15
B02 - $ 25
S01 - $ 110
S02 - $ 160
L00 - $ 10
A01 - $ 135
A02 - $ 195
D00 - $ 2.50

20022E

BCS HP3030 MT DRIVER D.22
B01 - $ 10
B02 - $ 20
S01 - $ 45
S02 - $ 65
L00 - $ 5
A01 - $ 60
A02 - $ 90

20024A

BCS DVM PROGRAM DRIVER D.41B
B01 - $ 10
B02 - $ 20
S01 - $ 10
S02 - $ 20
L00 - $ 5
A01 - $ 25
A02 - $ 45

20025A

BCS 2912 SCANNER CONTROL DRIVER D.42B
B01 - $ 10
B02 - $ 20
S01 - $ 10
S02 - $ 20
L00 - $ 5
A01 - $ 25
A02 - $ 45

20028A

BCS 2323A SUBSYSTEM DRVR ANALOG SCAN SCN-12, D.77
B01 - $ 10
B02 - $ 20
S01 - $ 10
S02 - $ 20
L00 - $ 5
A01 - $ 25
A02 - $ 45

20029A

BCS HP2778A LINE PRINTER DRIVER (D.12)
B01 - $ 10
B02 - $ 20
S01 - $ 10
S02 - $ 20
L00 - $ 5
A01 - $ 25
A02 - $ 45
D00 - $ 1

20072B

VERIFICATION; DACE AXEPT

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20073A

BCS 5610 A-TO-D DRIVER D.56 (NON-DMA)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20074A

L5610 FORTRAN/ALGOL INTERFACE ROUTINE

B01 -	$ 10
B02 -	$ 20
S01 -	$ 10
S02 -	$ 20
L00 -	$ 5
A01 -	$ 25
A02 -	$ 45

20075A

VERIFICATION: 2311A SUBSYSTEM

B01 -	$ 15
B02 -	$ 25
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20079A

8K SIO DISC/DRUM DRIVER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 25
S02 -	$ 35
L00 -	$ 5
A01 -	$ 40
A02 -	$ 60
D00 -	$ 1

20081A

16K SIO DISC/DRUM DRIVER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 25
S02 -	$ 35
L00 -	$ 5
A01 -	$ 40
A02 -	$ 60
D00 -	$ 1

20093A

BCS 5610A A-TO-D DMA DRIVER D.56A

B01	$ 10
B02	$ 20
S01	$ 15
S02	$ 25
L00	$ 5
A01	$ 30
A02	$ 50

20094A

MULTI/MINIVERTER SCAN ROUTINE SCNMV, D.76

B01	$ 10
B02	$ 20
S01	$ 10
S02	$ 20
L00	$ 5
A01	$ 25
A02	$ 45

20096A

DATA CONVERSION ROUTINE (READING TO MILLIVOLTS) MCONV

B01	$ 10
B02	$ 20
S01	$ 10
S02	$ 20
L00	$ 5
A01	$ 25
A02	$ 45

20098B

BCS 40-BIT OUTPUT REGISTER DRIVER D.54

B01	$ 10
B02	$ 20
S01	$ 15
S02	$ 25
L00	$ 5
A01	$ 30
A02	$ 50

20100B

SYMBOLIC EDITOR

B01	$ 15
B02	$ 25
S01	$ 70
S02	$ 100
L00	$ 5
A01	$ 90
A02	$ 130
D00	$ 2.50

20115C

MARKED CARD BASIC SYSTEM

B01	$ 15
B02	$ 25
S01	$ 200
S02	$ 300
L00	$ 25
A01	$ 240
A02	$ 350
D00	$ 2.50

20201B

PLOTTER LIBRARY

B01	$ 20
B02	$ 30
S01	$ 85
S02	$ 145
L00	$ 10
A01	$ 115
A02	$ 185

20202B

4K RELOCATABLE LIBRARY - NON-EAU

B01	$ 20
B02	$ 30
S01	$ 125
S02	$ 185
L00	$ 10
A01	$ 155
A02	$ 225

20203A

EXTENDED PRECISION LIBRARY

B01	$ 15
B02	$ 25
S01	$ 40
S02	$ 60
L00	$ 10
A01	$ 65
A02	$ 95

20204A

4K RELOCATABLE LIBRARY-EAU

B01	$ 20
B02	$ 30
S01	$ 125
S02	$ 185
L00	$ 10
A01	$ 155
A02	$ 225

20209C

DACE LIBRARY

B01	$ 10
B02	$ 20
S01	$ 60
S02	$ 90
L00	$ 5
A01	$ 75
A02	$ 115

20210A

CONVERSION ROUTINE BCD TO FLOATING POINT ICONV

B01	$ 10
B02	$ 20
S01	$ 10
S02	$ 20
L00	$ 5
A01	$ 25
A02	$ 45

20235A

RTE 2323A SUBSYSTEM DRIVER DVR77

B01	$ 10
B02	$ 20
S01	$ 10
S02	$ 20
L00	$ 5
A01	$ 25
A02	$ 45

20236A

RTE 2320A/2322A SUBSYSTEM DRIVER DVR76

B01	$ 10
B02	$ 20
S01	$ 10
S02	$ 20
L00	$ 5
A01	$ 25
A02	$ 45

20237A

LIBRARIAN

B01	$ 5
B02	$ 15
S01	$ 15
S02	$ 25
L00	$ 5
A01	$ 25
A02	$ 45

20288A

RTE CONVERSION ROUTINE BCD-FLOATING POINT CONV.

B01	$ 10
B02	$ 20
S01	$ 10
S02	$ 20
L00	$ 5
A01	$ 25
A02	$ 45

20290A

12589A AUTO CALLING UNIT DIAG.

B01	$ 10
B02	$ 20
S01	$ 20
S02	$ 30
L00	$ 10
A01	$ 40
A02	$ 60
D00	$ 1

20295A

RTE 12604B DSI DRIVER DVR40

B01	$ 10
B02	$ 20
S01	$ 10
S02	$ 20
L00	$ 5
A01	$ 25
A02	$ 45

20297A

RTE 2310/2311 SUBSYSTEM DRIVER DVR56

B01 - $	10
B02 - $	20
S01 - $	10
S02 - $	20
L00 - $	5
A01 - $	25
A02 - $	45

20301B

4K SIO SYSTEM DUMP

B01 - $	10
B02 - $	20
S01 - $	15
S02 - $	25
L00 - $	5
A01 - $	30
A02 - $	50

20303A

4K SIO TAPE READER DRIVER

B01 - $	10
B02 - $	20
S01 - $	15
S02 - $	25
L00 - $	5
A01 - $	30
A02 - $	50

20304A

4K SIO TAPE PUNCH DRIVER

B01 - $	10
B02 - $	20
S01 - $	15
S02 - $	25
L00 - $	5
A01 - $	30
A02 - $	50

20306A

8K SIO TAPE READER DRIVER

B01 - $	10
B02 - $	20
S01 - $	15
S02 - $	25
L00 - $	5
A01 - $	30
A02 - $	50

20307A

8K SIO TAPE PUNCH DRIVER

B01 - $	10
B02 - $	20
S01 - $	15
S02 - $	25
L00 - $	5
A01 - $	30
A02 - $	50

20312A

PUNCH/VERIFY ROUTINE

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20313B

8K SIO SYSTEM DUMP

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20314D

8K SIO HP2020 MT DRIVER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20315C

4K SIO HP2020 MT DRIVER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20316A

8K SIO TAPE PUNCH DRIVER (IBM 8 LEVEL)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20317A

4K SIO TAPE PUNCH DRIVER (IBM 8 LEVEL)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20319A

16K SIO TAPE READER DRIVER

B01	- $	10
B02	- $	20
S01	- $	15
S02	- $	25
L00	- $	5
A01	- $	30
A02	- $	50

20320A

16K SIO TAPE PUNCH DRIVER

B01	- $	10
B02	- $	20
S01	- $	15
S02	- $	25
L00	- $	5
A01	- $	30
A02	- $	50

20321C

16K SIO HP2020 MT DRIVER

B01	- $	10
B02	- $	20
S01	- $	20
S02	- $	30
L00	- $	5
A01	- $	35
A02	- $	55

20322A

4K SIO TTY DRIVER

B01	- $	10
B02	- $	20
S01	- $	20
S02	- $	30
L00	- $	5
A01	- $	35
A02	- $	55

20323A

8K SIO TTY DRIVER

B01	- $	10
B02	- $	20
S01	- $	20
S02	- $	30
L00	- $	5
A01	- $	35
A02	- $	55

20324B

8K SIO CARD READER DRIVER

B01	- $	10
B02	- $	20
S01	- $	15
S02	- $	25
L00	- $	5
A01	- $	30
A02	- $	50

20327A

12K SIO TAPE READER DRIVER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20328A

12K SIO TAPE PUNCH DRIVER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 10
A01 -	$ 35
A02 -	$ 55

20329A

12K SIO TTY DRIVER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20330B

16K SIO TTY DRIVER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20331C

8K SIO HP3030 MT DRIVER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20332A

16K SIO CARD READER DRIVER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20334C

16K SIO HP3030 MT DRIVER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20335A

16K SIO SYSTEM DUMP

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20336B

4K SIO HP3030 MT DRIVER

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20337B

DIAGNOSTIC: 12604B DSI

B01 -	$ 10
B02 -	$ 20
S01 -	$ 60
S02 -	$ 100
L00 -	$ 5
A01 -	$ 75
A02 -	$ 125

20338B

TEST: 2310C SUBSYSTEM

B01 -	$ 15
B02 -	$ 25
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20339B

TEST: 2310A/B SUBSYSTEM

B01 -	$ 15
B02 -	$ 25
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20340C

VRC DRUM DIAGNOSTIC

B01 -	$ 10
B02 -	$ 20
S01 -	$ 60
S02 -	$ 90
L00 -	$ 10
A01 -	$ 80
A02 -	$ 120

20341B

TEST: 2912 SCANNER/DVM

B01 -	$ 10
B02 -	$ 20
S01 -	$ 10
S02 -	$ 20
L00 -	$ 5
A01 -	$ 25
A02 -	$ 45

20343A

TTY OFFLINE TEST

B01 -	$ 5
B02 -	$ 15
D00 -	$ 1

20344A

DIAGNOSTIC: 10-BIT A-TO-D CARD 12564A

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20345A

MEMORY PARITY CHECK DIAGNOSTIC (2114 AND 2115)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20346C

DDC DISC DIAGNOSTIC

B01 -	$ 15
B02 -	$ 25
S01 -	$ 60
S02 -	$ 90
L00 -	$ 10
A01 -	$ 85
A02 -	$ 125

20347B

MARK SENSE CARD READER DIAGNOSTIC

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20348B

DIAGNOSTIC: 40-BIT OUTPUT REGISTER (12556B)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20349C

VERIFY: 2911 SCNR/DVM TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20392A

BASIC SYSTEM

B01 -	$ 25
B02 -	$ 45
S01 -	$ 245
S02 -	$ 385
L00 -	$ 30
A01 -	$ 300
A02 -	$ 460
D00 -	$ 2.50

20393A

SEND (ONLY) INTERFACE

B01 -	$ 15
B02 -	$ 25
S01 -	$ 55
S02 -	$ 85
L00 -	$ 5
A01 -	$ 75
A02 -	$ 115

20396A

RTE 10-BIT A-TO-D CARD 12564A DVR57

B01 -	$ 15
B02 -	$ 25
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20400A

ALTER-SKIP INSTRUCTION TEST

B01	$ 15
B02	$ 25
S01	$ 155
S02	$ 235
L00	$ 10
A01	$ 180
A02	$ 270

20401B

MEMORY REFERENCE INSTRUCTION TEST

B01	$ 15
B02	$ 25
S01	$ 75
S02	$ 105
L00	$ 10
A01	$ 100
A02	$ 140

20402D

SHIFT-ROTATE INSTRUCTION TEST

B01	$ 10
B02	$ 20
S01	$ 25
S02	$ 35
L00	$ 5
A01	$ 40
A02	$ 60

20403A

LOW MEMORY ADDRESS TEST

B01	$ 10
B02	$ 20
S01	$ 15
S02	$ 25
L00	$ 5
A01	$ 30
A02	$ 50

20404A

HIGH MEMORY ADDRESS TEST

B01	$ 10
B02	$ 20
S01	$ 15
S02	$ 25
L00	$ 5
A01	$ 30
A02	$ 50

20405A

2116A LOW MEMORY CHECKERBOARD TEST

B01	$ 10
B02	$ 20
S01	$ 15
S02	$ 25
L00	$ 5
A01	$ 30
A02	$ 50

20406A

2116A HIGH MEMORY CHECKERBOARD TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20407A

2116A/B SERIAL TTY TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20408C

TAPE READER TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 50
S02 -	$ 70
L00 -	$ 10
A01 -	$ 70
A02 -	$ 100

20409C

TAPE PUNCH TEST

B01 -	$ 15
B02 -	$ 25
S01 -	$ 50
S02 -	$ 70
L00 -	$ 10
A01 -	$ 75
A02 -	$ 105

20411B

TEST: KENNEDY INCREMENTAL MAG TAPE

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20412B

2116 TIME BASE GENERATOR TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 25
S02 -	$ 35
L00 -	$ 5
A01 -	$ 40
A02 -	$ 60

20415A

INTERRUPT DIAGNOSTIC

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20416C

16 BIT DUPLEX REGISTER TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 25
S02 -	$ 35
L00 -	$ 5
A01 -	$ 40
A02 -	$ 60

20417C

2116A/B TTY TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 25
S02 -	$ 35
L00 -	$ 5
A01 -	$ 40
A02 -	$ 60

20418D

MEMORY PROTECT DIAGNOSTIC

B01 -	$ 10
B02 -	$ 20
S01 -	$ 40
S02 -	$ 60
L00 -	$ 5
A01 -	$ 55
A02 -	$ 85

20419C

DMA DIAGNOSTIC

B01 -	$ 10
B02 -	$ 20
S01 -	$ 25
S02 -	$ 35
L00 -	$ 5
A01 -	$ 40
A02 -	$ 60

20420B

2115/14 TTY TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 25
S02 -	$ 35
L00 -	$ 5
A01 -	$ 40
A02 -	$ 60

20421A

2115/14 TIME BASE GENERATOR TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 25
S02 -	$ 35
L00 -	$ 5
A01 -	$ 40
A02 -	$ 60

20422B

EXTENDED ARITHMETIC UNIT DIAGNOSTIC

B01 -	$ 10
B02 -	$ 20
S01 -	$ 40
S02 -	$ 60
L00 -	$ 5
A01 -	$ 55
A02 -	$ 85

20423A

RELAY REGISTER DIAGNOSTIC

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20426A

2116B HIGH MEMORY CHECKERBOARD TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20427A

2116B LOW MEMORY CHECKERBOARD TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20428A

POWER FAIL WITH AUTO RESTART TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20429B

DIAGNOSTIC: 2912A PROGRAMMER CARD

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20430A

DIAGNOSTIC: 2402A PROG/DATA INTERFACE

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20431B

DIAGNOSTIC: 40-BIT OUTPUT REGISTER (12556A)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20433E

HP3030 MT DIAGNOSTIC

B01 -	$ 10
B02 -	$ 20
S01 -	$ 60
S02 -	$ 90
L00 -	$ 10
A01 -	$ 80
A02 -	$ 120

20434B

2116 POWER FAIL INTERRUPT TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 30
S02 -	$ 50
L00 -	$ 5
A01 -	$ 45
A02 -	$ 75
D00 -	$ 1

20435A

DMI DIAGNOSTIC

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20436A

DIAGNOSTIC: DVS PROGRAM CARD 12661A

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20439A

I/O MULTIPLEXOR DIAGNOSTIC

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20501D

SCN: ANALOG SCAN ROUTINE (8421)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20512A

2115A/14A HIGH MEMORY CHECKERBOARD TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20513A

2115A/14A LOW MEMORY CHECKERBOARD TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20516B

HP2020 MT TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 40
S02 -	$ 60
L00 -	$ 10
A01 -	$ 60
A02 -	$ 90

20517B

SCN: ANALOG SCAN ROUTINE (4221)

B01	- $	10
B02	- $	20
S01	- $	15
S02	- $	25
L00	- $	5
A01	- $	30
A02	- $	50

20520C

4K SIO MARK SENSE CARD READER DRIVER

B01	- $	10
B02	- $	20
S01	- $	10
S02	- $	20
L00	- $	5
A01	- $	25
A02	- $	45

20521C

8K SIO MARK SENSE CARD READER DRIVER

B01	- $	10
B02	- $	20
S01	- $	10
S02	- $	20
L00	- $	5
A01	- $	25
A02	- $	45

20522C

16K SIO MARK SENSE CARD READER DRIVER

B01	- $	10
B02	- $	20
S01	- $	10
S02	- $	20
L00	- $	5
A01	- $	25
A02	- $	45

20524A

2114B DMA GENERAL DIAGNOSTIC

B01	- $	10
B02	- $	20
S01	- $	35
S02	- $	55
L00	- $	5
A01	- $	50
A02	- $	80

20525A

2114B DMA RATE AND TRANSFER DIAGNOSTIC

B01	- $	10
B02	- $	20
S01	- $	10
S02	- $	20
L00	- $	5
A01	- $	25
A02	- $	45

20527B

4K SIO HP2778A LINE PRINTER DRVR.

B01 -	$ 10
B02 -	$ 20
S01 -	$ 10
S02 -	$ 20
L00 -	$ 5
A01 -	$ 25
A02 -	$ 45
D00 -	$ 1

20528A

8K SIO HP2778A LINE PRINTER DRVR.

B01 -	$ 10
B02 -	$ 20
S01 -	$ 10
S02 -	$ 20
L00 -	$ 5
A01 -	$ 25
A02 -	$ 45
D00 -	$ 1

20529A

16K SIO HP2778A LINE PRINTER DRVR.

B01 -	$ 10
B02 -	$ 20
S01 -	$ 10
S02 -	$ 20
L00 -	$ 5
A01 -	$ 25
A02 -	$ 45
D00 -	$ 1

20530B

VERIFY: 2321A SUBSYSTEM (3450/2911) VER34

B01 -	$ 20
B02 -	$ 30
S01 -	$ 30
S02 -	$ 50
L00 -	$ 5
A01 -	$ 55
A02 -	$ 85

20532A

2321 SUBSYSTEM (3450/2911) SCAN ROUTINE SCN34

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20533A

CONVERSION ROUTINE FOR 2321 SUBSYS (BCD-FLOAT PNT)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 10
S02 -	$ 20
L00 -	$ 5
A01 -	$ 25
A02 -	$ 45

20535A

SEND/RECEIVE INTERFACE (HP12587A) TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 40
S02 -	$ 60
L00 -	$ 5
A01 -	$ 55
A02 -	$ 85

20538A

RECEIVE (ONLY) INTERFACE (12621) TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 40
S02 -	$ 60
L00 -	$ 5
A01 -	$ 55
A02 -	$ 85

20546A

2114B HIGH SPEED I/O CHANNEL RATE TEST

B01 -	$ 10
B02 -	$ 20
S01 -	$ 10
S02 -	$ 20
L00 -	$ 5
A01 -	$ 25
A02 -	$ 45

20548A

FORTRAN COMPILER

B01 -	$ 25
B02 -	$ 45
S01 -	$ 240
S02 -	$ 390
L00 -	$ 30
A01 -	$ 295
A02 -	$ 465
D00 -	$ 2.50

20549A

4K FORTRAN COMPILER

B01 -	$ 40
B02 -	$ 80
S01 -	$ 445
S02 -	$ 755
L00 -	$ 40
A01 -	$ 525
A02 -	$ 875
D00 -	$ 2.50

20581A

DOS PLOTTER DRIVER (DVR10)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 10
S02 -	$ 20
L00 -	$ 5
A01 -	$ 25
A02 -	$ 45
D00 -	$ 1

20583A

CALIBRATION: 2311 (TTY)

B01	$ 10
B02	$ 20
S01	$ 15
S02	$ 25
L00	$ 5
A01	$ 30
A02	$ 50

20585B

CARTRIDGE DISC MEMORY DIAGNOSTIC

B01	$ 15
B02	$ 25
S01	$ 135
S02	$ 215
L00	$ 10
A01	$ 160
A02	$ 250

20594A

8K MAGNETIC TAPE SYSTEM

B01	$ 30
B02	$ 60
S01	$ 55
S02	$ 85
L00	$ 15
A01	$ 100
A02	$ 160
D00	$ 3.50

20595A

16K MAGNETIC TAPE SYSTEM

B01	$ 30
B02	$ 60
S01	$ 55
S02	$ 85
L00	$ 15
A01	$ 100
A02	$ 160
D00	$ 3.50

20597A

DISC OPERATING SYSTEM (2770 SERIES DISC/DRUM)

B01	$ 65
B02	$ 105
S01	$ 420
S02	$ 630
L00	$ 40
A01	$ 525
A02	$ 775
D00	$ 3

20598A

DOS ASSEMBLER

B01	$ 75
B02	$ 145
S01	$ 185
S02	$ 285
L00	$ 35
A01	$ 295
A02	$ 465
D00	$ 2.50

20599A

DOS FORTRAN

B01	$ 70
B02	$ 120
S01	$ 380
S02	$ 590
L00	$ 45
A01	$ 495
A02	$ 755
D00	$ 2.50

20688C

REAL TIME EXECUTIVE

B01	$ 50
B02	$ 90
S01	$ 435
S02	$ 675
L00	$ 30
A01	$ 515
A02	$ 795
D00	$ 3

20728C

RTE RELOCATABLE LIBRARY

B01	$ 20
B02	$ 30
S01	$ 150
S02	$ 240
L00	$ 30
A01	$ 200
A02	$ 300

20741B

RTE TELEPRINTER DRIVER (DVR00)

B01	$ 10
B02	$ 20
S01	$ 20
S02	$ 30
L00	$ 5
A01	$ 35
A02	$ 55

20743B

RTE PUNCH TAPE READER DRIVER (DVR01)

B01	$ 10
B02	$ 20
S01	$ 15
S02	$ 25
L00	$ 5
A01	$ 30
A02	$ 50

20745B

RTE HIGH SPEED PUNCH DRIVER (DVR02)

B01	$ 10
B02	$ 20
S01	$ 10
S02	$ 20
L00	$ 5
A01	$ 25
A02	$ 45

20747C

RTE DISC/DRUM DRIVER (DVR30)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20792C

RTE RELOCATING LOADER

B01 -	$ 15
B02 -	$ 25
S01 -	$ 125
S02 -	$ 195
L00 -	$ 10
A01 -	$ 150
A02 -	$ 230

20800B

RTE HP2778A LINE PRINTER DRIVER (DVR12)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20802C

SYSTEM DUMP

B01 -	$ 10
B02 -	$ 20
S01 -	$ 35
S02 -	$ 55
L00 -	$ 5
A01 -	$ 50
A02 -	$ 80

20805B

RTE EDITOR

B01 -	$ 10
B02 -	$ 20
S01 -	$ 45
S02 -	$ 75
L00 -	$ 5
A01 -	$ 60
A02 -	$ 100

20806C

RTE HP3030 MT DRVR (DVR22)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55
D00 -	$ 1

20808B

RTE PLOTTER DRIVER (DVR10)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 10
S02 -	$ 20
L00 -	$ 5
A01 -	$ 25
A02 -	$ 45
D00 -	$ 1

20810A

RTE/DOS PLOTTER LIBRARY

B01 -	$ 15
B02 -	$ 25
S01 -	$ 80
S02 -	$ 140
L00 -	$ 10
A01 -	$ 105
A02 -	$ 175

20817A

BCS MARK SENSE DVR. (D.15) KIT 12602A

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20819A

BCS MARK SENSE DVR. (D.15) KIT 12602B

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20874C

RTE ASSEMBLER

B01 -	$ 75
B02 -	$ 145
S01 -	$ 180
S02 -	$ 280
L00 -	$ 35
A01 -	$ 290
A02 -	$ 460
D00 -	$ 2.50

20875C

RTE FORTRAN COMPILER

B01 -	$ 70
B02 -	$ 120
S01 -	$ 340
S02 -	$ 570
L00 -	$ 25
A01 -	$ 435
A02 -	$ 715
D00 -	$ 2.50

20895B

HP2778A LINE PRINTER DIAGNOSTIC

B01 -	$ 10
B02 -	$ 20
S01 -	$ 35
S02 -	$ 55
L00 -	$ 10
A01 -	$ 55
A02 -	$ 85
D00 -	$ 1

20925A

DOS RELOCATING LOADER

B01 -	$ 15
B02 -	$ 25
S01 -	$ 75
S02 -	$ 125
L00 -	$ 10
A01 -	$ 100
A02 -	$ 160

20974A

DOS RELOCATABLE LIBRARY

B01 -	$ 25
B02 -	$ 35
S01 -	$ 190
S02 -	$ 290
L00 -	$ 20
A01 -	$ 235
A02 -	$ 345

20985A

DOS TELEPRINTER DRIVER (DVR00)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55

20987A

DOS PUNCH TAPE READER DRIVER (DVR01)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20989A

DOS HIGH SPEED PUNCH DRIVER (DVR02)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20991A

DOS HP2778A LINE PRINTER DRIVER (DVR12)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20993A

DOS MARK SENSE CARD READER DRIVER (DVR15)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 10
S02 -	$ 20
L00 -	$ 5
A01 -	$ 25
A02 -	$ 45

20995A

DOS DISC/DRUM DRIVER (DVR30)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50

20997B

DOS HP3030 MT DRVR (DVR22)

B01 -	$ 10
B02 -	$ 20
S01 -	$ 20
S02 -	$ 30
L00 -	$ 5
A01 -	$ 35
A02 -	$ 55
D00 -	$ 1

22001A

HP2911A/B CROSSBAR SCANNER DRIVER - FTN-CALL

D00 -	$ 2
K01 -	$ 10
K02 -	$ 20

22002A

TIME-OF-DAY CLOCK

D00 -	$ 2
K01 -	$ 10
K02 -	$ 20

22003A

HP2402A DIGITAL VOLTMETER DRIVER - FTN-CALL

D00 -	$ 2
K01 -	$ 10
K02 -	$ 20

22004A

COUNTER DATA SOURCE INTERFACE DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22005A

HP2401C DIGITAL VOLTMETER DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22006A

HP2401C DATA SOURCE INTERFACE DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22007A

HP3440A DATA SOURCE INTERFACE DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22008A

HP3460A DIGITAL VOLTMETER DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22009B

BOOTSTRAP LOADER GENERATOR
D00 - $ 2
K01 - $ 10
K02 - $ 20

22013A

INVERSE ASSEMBLER
D00 - $ 2
K01 - $ 10
K02 - $ 20

22014A

BINARY TAPE EDITOR
D00 - $ 2
K01 - $ 10
K02 - $ 20

22015B

BASIC LINE RESEQUENCER
D00 - $ 2
K01 - $ 10
K02 - $ 20

22016B

SYMBOLIC ALPHANUMERIC GENERATOR
D00 - $ 2
K01 - $ 10
K02 - $ 20

22017A

GAMMA FUNCTION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22018A

K BESSEL FUNCTION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22019A

I BESSEL FUNCTION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22020A

Y BESSEL FUNCTION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22021A

LOCATE MAXIMUM-MINIMUM INTEGER
D00 - $ 2
K01 - $ 10
K02 - $ 20

22022A

SOLUTION OF LINEAR LEAST SQUARES PROBLEMS
D00 - $ 2
K01 - $ 10
K02 - $ 20

22023A

TRAPEZOIDAL INTEGRATION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22024A

TRAPEZOIDAL INTEGRATION, EQUAL INTERVAL ARGUMENT
D00 - $ 2
K01 - $ 10
K02 - $ 20

22025A

SIMPSONS AND NEWTONS 3/8 INTEGRATION EQU. INT. ARG.
D00 - $ 2
K01 - $ 10
K02 - $ 20

22026A

HERMITIAN FOURTH ORDER INTEGRATION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22027A

HERMITIAN FOURTH ORDER INTEGRATION EQU. INT. ARG.
D00 - $ 2
K01 - $ 10
K02 - $ 20

22028A

HERMITIAN SIXTH ORDER INTEGRATION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22029A

HERMITIAN SIXTH ORDER INTEGRATION EQU. INT. ARG.
D00 - $ 2
K01 - $ 10
K02 - $ 20

22030A

COMPLEX ROOTS OF A REAL POLYNOMIAL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22031A

ADD ROWS OF MATRICES
D00 - $ 2
K01 - $ 10
K02 - $ 20

22032A

RANK AND BASIS
D00 - $ 2
K01 - $ 10
K02 - $ 20

22033A

SOLUTION OF SIMULTANEOUS LINEAR EQUATIONS
D00 - $ 2
K01 - $ 10
K02 - $ 20

22034A

SOLUTION OF SIMULTANEOUS LINEAR EQUATIONS, BAND-MATRIX
D00 - $ 2
K01 - $ 10
K02 - $ 20

22035A

SOLUTION OF SIMULTANEOUS LINEAR EQU., SYMMETRIC MATRIX
D00 - $ 2
K01 - $ 10
K02 - $ 20

22036A

REAL FOURIER TRANSFORM
D00 - $ 2
K01 - $ 10
K02 - $ 20

22037A

COMPLEX FOURIER TRANSFORM
D00 - $ 2
K01 - $ 10
K02 - $ 20

22038A

SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS
D00 - $ 2
K01 - $ 10
K02 - $ 20

22039A

MEAN, DEVIATION, AND CORRELATION COEFFICIENTS
D00 - $ 2
K01 - $ 10
K02 - $ 20

22040A

SCOPE DISPLAY DEMO
D00 - $ 2
K01 - $ 10
K02 - $ 20

22041B

PAPER TAPE DUPLICATOR
D00 - $ 2
K01 - $ 10
K02 - $ 20

22042C

AN HP2116-FAMILY SIMULATOR FOR THE IBM 360
D00 - $ 2
K21 - $ 75

22043A

CHEBYCHEV POLYNOMIAL CURVE FIT
D00 - $ 2
K01 - $ 10
K02 - $ 20

22044A

RUN-TIME DATA INPUT FOR BASIC
D00 - $ 2
K01 - $ 10
K02 - $ 20

22045A

REGRESSION/CORRELATION
D00 - $ 2
K01 - $ 10

22045A

REGRESSION/CORRELATION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22048A

HP2402A DATA SOURCE INTERFACE DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22053A

HP3450A DATA SOURCE INTERFACE DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22055A

HP3460A/B DATA SOURCE INTERFACE DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22057A

HP2801A DATA SOURCE INTERFACE DRIVER
D00 - $ 2
K01 - $ 10
K02 - $ 20

22059A

HP2912A REED SCANNER DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22061A

HP2320 LOW SPD A-TO-D SUBSYS DVR - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22062A

HP2322A LOW SPD A-TO-D SUBSYS DVR - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22063A

HP2770A/2771A DISC MEMORY DRIVER
D00 - $ 2
K01 - $ 10
K02 - $ 20

22064A

AUTOMATIC TABBING PROGRAM
D00 - $ 2
K01 - $ 10
K02 - $ 20

22065A

FORTRAN TRANSLATOR - 1800 TO HP
D00 - $ 2
K01 - $ 10
K02 - $ 20

22066A

HP6130B DIGITAL VOLTAGE SOURCE DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22067A

HP6130B DIGITAL VOLTAGE SOURCE DRIVER - BASIC-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22068A

HP3450A DIGITAL VOLTMETER DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22069A

HP2323A LOW SPEED ANALOG-TO-DIGITAL SUBSYSTEM DVR
D00 - $ 2
K01 - $ 10
K02 - $ 20

22070A

HP2573A/74A/75A DRUM MEMORY DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22071A

HP12539A TIME BASE GENERATOR DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22075A

HP5100B FREQUENCY SYNTHESIZER DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22076A

HP5105A FREQUENCY SYNTHESIZER DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22077A

CALCOMP PLOTTER BASIC DRIVER
D00 - $ 2
K01 - $ 10
K02 - $ 20

22078A

HIGH SPEED PUNCH BASIC DRIVER
D00 - $ 2
K01 - $ 10
K02 - $ 20

22079B

ALPHABETIC STRING SORTING PROGRAM
D00 - $ 2
K01 - $ 10
K02 - $ 20

22080A

HP2331A X-Y DISPLAY SUBSYSTEM DRIVER - FTN-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22081A

BIT OPERATIONS (SET, CLEAR, TEST)
D00 - $ 2
K01 - $ 10
K02 - $ 20

22082A

BASIC PHOTOREADER DATA INPUT
D00 - $ 2
K01 - $ 10
K02 - $ 20

22083A

ABSOLUTE CORE DUMP ROUTINE
D00 - $ 2
K01 - $ 10
K02 - $ 20

22084A

INTEGRATED MATH CALCULATOR PROGRAM
D00 - $ 2
K01 - $ 10
K02 - $ 20

22085A

EXTENDED PRECISION CALCULATOR
D00 - $ 2
K01 - $ 10
K02 - $ 20

22086A

EBCDIC TO ASCII TRANSLATOR
D00 - $ 2
K01 - $ 10
K02 - $ 20

22087A

TOP MANAGEMENT DECISION GAME
D00 - $ 2
K01 - $ 10
K02 - $ 20

22088A

OCTAL UTILITY SYSTEM (HOCUS)
D00 - $ 2
K01 - $ 10
K02 - $ 20

22089A

TELEPRINTER OCTAL INPUT PROGRAM
D00 - $ 2
K01 - $ 10
K02 - $ 20

22090A

KEYBOARD TAPE GENERATOR
D00 - $ 2
K01 - $ 10
K02 - $ 20

22092A

OLIVETTI SIO DRIVER
D00 - $ 2
K01 - $ 10
K02 - $ 20

22093A

ASCII/IBM-360 CONVERSION ROUTINE
D00 - $ 2
K01 - $ 10
K02 - $ 20

22094A

GAME OF TIC-TAC-TOE (JEU DE MORPIONS)
D00 - $ 2
K01 - $ 10
K02 - $ 20

22095A

BASIC HP2778A LINE PRINTER DRIVER
D00 - $ 2
K01 - $ 10
K02 - $ 20

22096A

SCOPE SYMBOLIC LISTER
D00 - $ 2
K01 - $ 10
K02 - $ 20

22097A

DOUBLE PRECISION INTEGER LIBRARY
D00 - $ 2
K01 - $ 10
K02 - $ 20

22098A

HP2323A LOW SPD A-TO-D SBSYS DRVR BASIC-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22099A

DOS DEMO
D00 - $ 2
K01 - $ 10
K02 - $ 20

22100A

AL-MAG
D00 - $ 2
K01 - $ 10
K02 - $ 20

22101A

HP2911A/B CROSSBAR SCANNER DRIVER - BASIC-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22102A

HP3460A/B DATA SOURCE INTERFACE DRIVER - BSC-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22103A

HP2401C DATA SOURCE INTERFACE DRIVER - BASIC-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22104A

HP2402A DATA SOURCE INTERFACE DRIVER - BASIC-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22105A

COMMENT INSERTER FOR ASSEMBLER PROGRAMS
D00 - $ 2
K01 - $ 10
K02 - $ 20

22106A

COUNTER DATA SOURCE INTERFACE DRIVER-BASIC-CALLABLE
D00 - $ 2
K01 - $ 10
K02 - $ 20

22107A

HP2912A REED SCANNER DRIVER - BASIC-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22108A
HP3450A DATA SOURCE INTERFACE DRIVER - BASIC-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22109A

HP3440A DATA SOURCE INTERFACE DRIVER - BASIC-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22110A

HP2773A/75A/74A DRUM MEMORY DRIVER - BASIC-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22111A

HP2770A/2771A DISC MEMORY DRIVER - BASIC-CALLABLE
D00 - $ 2
K01 - $ 10
K02 - $ 20

22112A

HP12539A TIME BASE GENERATOR DRIVER - BASIC-CALL
D00 - $ 2
K01 - $ 10
K02 - $ 20

22113A

MTS PAPER TAPE DUPLICATOR
D00 - $ 2
K01 - $ 10
K02 - $ 20

22114A

REPRODUCE/EDIT PAPER TAPE
D00 - $ 2
K01 - $ 10
K02 - $ 20

22115A

ORDERING A FLOATING POINT ARRAY
D00 - $ 2
K01 - $ 10
K02 - $ 20

22117A

TRANSFORMATIONS
D00 - $ 2
K01 - $ 10
K02 - $ 20

22118A

MATRIX INVERSION SUBROUTINES
D00 - $ 2
K01 - $ 10
K02 - $ 20

22119A

MATRIX ARITHMETIC SUBROUTINE
D00 - $ 2
K01 - $ 10
K02 - $ 20

22120A

MATRIX ARITHMETIC
D00 - $ 2
K01 - $ 10
K02 - $ 20

22121A

CROSS-TABULATION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22122A

SIMULTANEOUS EQUATION SOLVER
D00 - $ 2
K01 - $ 10
K02 - $ 20

22123A

SIMULTANEOUS EQUATION SOLVER ROUTINE
D00 - $ 2
K01 - $ 10
K02 - $ 20

22124A

AUTOCORRELATION AND SPECTRAL DENSITY
D00 - $ 2
K01 - $ 10
K02 - $ 20

22125A

MOVING AVERAGES
D00 - $ 2
K01 - $ 10
K02 - $ 20

22126A

CROSS CORRELATION ANALYSIS
D00 - $ 2
K01 - $ 10
K02 - $ 20

22127A

DISCRIMINANT ANALYSIS
D00 - $ 2
K01 - $ 10
K02 - $ 20

22128A

LEAST SQUARES REGRESSION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22129A

LINEAR REGRESSION INTERVAL ESTIMATES
D00 - $ 2
K01 - $ 10
K02 - $ 20

22130A

POLYNOMIAL REGRESSION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22131A

POLYNOMIAL REGRESSION CONFIDENCE INTERVALS
D00 - $ 2
K01 - $ 10
K02 - $ 20

22132A

STEPWISE REGRESSION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22133A

BIOASSAY
D00 - $ 2
K01 - $ 10
K02 - $ 20

22134A

ORTHOGONAL POLYNOMIAL REGRESSION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22135A

LINEAR REGRESSION WITH REPLICATION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22136A

NON-LINEAR REGRESSION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22137A

CUMULATIVE DISTRIBUTION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22138A

KENDALL'S COEFFICIENT OF CONCORDANCE;W
D00 - $ 2
K01 - $ 10
K02 - $ 20

22139A

KENDALL'S COEFFICIENT OF CONCORDANCE
D00 - $ 2
K01 - $ 10
K02 - $ 20

22140A

KENDALL'S TAU CORRELATION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22141A

GENERAL STATISTICS
D00 - $ 2
K01 - $ 10
K02 - $ 20

22142A

GENERAL STATISTICS FOR MULTIPLE GROUPS
D00 - $ 2
K01 - $ 10
K02 - $ 20

22143A

PROBABILITY SUBPROGRAMS
D00 - $ 2
K01 - $ 10
K02 - $ 20

22144A

INTEGRATION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22145A

CONFIDENCE INTERVAL FOR MEAN AND VAR. OF A NORM. DIST.
D00 - $ 2
K01 - $ 10
K02 - $ 20

22146A

SAMPLE SIZE DETERMINATION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22147A

MULTIPLE CORRELATION
D00 - $ 2
K01 - $ 10
K02 - $ 20

22148A

COMPLETELY RANDOMIZED DESIGN
D00 - $ 2
K01 - $ 10
K02 - $ 20

22149A

COMPLETELY RANDOMIZED DESIGN WITH SUBSAMPLING
D00 - $ 2
K01 - $ 10
K02 - $ 20

22150A

RANDOMIZED COMPLETE BLOCK DESIGN
D00 - $ 2
K01 - $ 10
K02 - $ 20

22151A

RANDOMIZED COMPLETE BLOCK DESIGN WITH SUBSAMPLING
D00 - $ 2
K01 - $ 10
K02 - $ 20

22152A
TWO-WAY FACTORIAL DESIGN
D00 - $ 2
K01 - $ 10
K02 - $ 20

22153A

THREE-WAY FACTORIAL DESIGN
D00 - $ 2
K01 - $ 10
K02 - $ 20

22154A

ANALYSIS OF VARIANCE INFORMATION GENERATOR
D00 - $ 2
K01 - $ 10
K02 - $ 20

22155A
DUNCAN'S MULTIPLE RANGE TEST
D00 - $ 2
K01 - $ 10
K02 - $ 20

22156A

PAIRED t-TEST
D00 - $ 2
K01 - $ 10
K02 - $ 20

22157A

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24031A

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B01	$ 15
B02	$ 25
S01	$ 100
S02	$ 150
L00	$ 10
A01	$ 125
A02	$ 185
D00	$ 2.50

24032A

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B01	$ 15
B02	$ 25
S01	$ 100
S02	$ 150
L00	$ 10
A01	$ 125
A02	$ 185
D00	$ 2.50

24038A

4K ASSEMBLER NON-EAU

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B02	$ 20
S01	$ 80
S02	$ 120
L00	$ 10
A01	$ 100
A02	$ 150
D00	$ 2.50

24039A

4K ASSEMBLER EAU

B01	$ 10
B02	$ 20
S01	$ 80
S02	$ 120
L00	$ 10
A01	$ 100
A02	$ 150
D00	$ 2.50

24044A

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S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50
D00 -	$ 1

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B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50
D00 -	$ 1

24127A

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B01 -	$ 10
B02 -	$ 20
S01 -	$ 15
S02 -	$ 25
L00 -	$ 5
A01 -	$ 30
A02 -	$ 50
D00 -	$ 1

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HP2401C DIGITAL VOLTMETER DRIVER - FTN-CALL	A006-22005
HP2401C DATA SOURCE INTERFACE DRIVER - FTN-CALL	A006-22006
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HP3460A DIGITAL VOLTMETER DRIVER - FTN-CALL	A006-22008
HP2402A DATA SOURCE INTERFACE DRIVER - FTN-CALL	A006-22048
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HP2912A REED SCANNER DRIVER - FTN-CALL	A006-22059
HP6130B DIGITAL VOLTAGE SOURCE DRIVER - FTN-CALL	A006-22066
HP6130B DIGITAL VOLTAGE SOURCE DRIVER - BASIC-CALL	A006-22067
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HP5105A FREQUENCY SYNTHESIZER DRIVER - FTN-CALL	A006-22076
HP3460A/B DATA SOURCE INTERFACE DRIVER - BSC-CALL	A006-22102
HP2401C DATA SOURCE INTERFACE DRIVER - BASIC-CALL	A006-22103

HP2402A DATA SOURCE INTERFACE DRIVER - BASIC-CALL	A006-22104
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BCS DVM PROGRAM DRIVER D.41	A006-20009
BCS 8-4-2-1 SCNR CONTROL DRIVER	A006-20010
BCS (4221/8421) DSI DRIVER D.40A	A006-20011
BCS (8421/4221) SCNR CONTROL DRIVER D.42A	A006-20012

BCS DVM PROGRAM DRIVER D.41B	A006-20024
BCS 2912 SCANNER CONTROL DRIVER D.42B	A006-20025
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BCS 40-BIT OUTPUT REGISTER DRIVER D.54	A006-20098
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RTE 12604B DSI DRIVER DVR40	A006-20295
SCN: ANALOG SCAN ROUTINE (8421)	A006-20501
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HP2402A DIGITAL VOLTMETER DRIVER - FTN-CALL	A006-22003
COUNTER DATA SOURCE INTERFACE DRIVER - FTN-CALL	A006-22004
HP2401C DIGITAL VOLTMETER DRIVER - FTN-CALL	A006-22005
HP2401C DATA SOURCE INTERFACE DRIVER - FTN-CALL	A006-22006
HP3440A DATA SOURCE INTERFACE DRIVER - FTN-CALL	A006-22007
HP3460A DIGITAL VOLTMETER DRIVER - FTN-CALL	A006-22008
HP2402A DATA SOURCE INTERFACE DRIVER - FTN-CALL	A006-22048
HP3450A DATA SOURCE INTERFACE DRIVER - FTN-CALL	A006-22053
HP3460A/B DATA SOURCE INTERFACE DRIVER - FTN-CALL	A006-22055
HP2801A DATA SOURCE INTERFACE DRIVER	A006-22057
HP2912A REED SCANNER DRIVER - FTN-CALL	A006-22059
HP6130B DIGITAL VOLTAGE SOURCE DRIVER - FTN-CALL	A006-22066
HP6130B DIGITAL VOLTAGE SOURCE DRIVER - BASIC-CALL	A006-22067
HP3450A DIGITAL VOLTMETER DRIVER - FTN-CALL	A006-22068
HP2323A LOW SPEED ANALOG-TO-DIGITAL SUBSYSTEM DVR	A006-22069
HP12539A TIME BASE GENERATOR DRIVER - FTN-CALL	A006-22071
HP5100B FREQUENCY SYNTHESIZER DRIVER - FTN-CALL	A006-22075
HP5105A FREQUENCY SYNTHESIZER DRIVER - FTN-CALL	A006-22076
HP2911A/B CROSSBAR SCANNER DRIVER - BASIC-CALL	A006-22101
HP3460A/B DATA SOURCE INTERFACE DRIVER - BSC-CALL	A006-22102
HP2401C DATA SOURCE INTERFACE DRIVER - BASIC-CALL	A006-22103
HP2402A DATA SOURCE INTERFACE DRIVER - BASIC-CALL	A006-22104
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HP3450A DATA SOURCE INTERFACE DRIVER - BASIC-CALL	A006-22108
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16K SIO HP2778A LINE PRINTER DRVR.	A011-20529
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4K SIO TAPE PUNCH DRIVER (IBM 8 LEVEL)	A009-20317
4K SIO MARK SENSE CARD READER DRIVER	A010-20520
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4K SIO HP2020 MT DRIVER	A016-20315
4K SIO HP3030 MT DRIVER	A016-20336
4K RELOCATING LOADER	A017-20001
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4K ASSEMBLER NON-EAU	A018-24038
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RTE CONVERSION ROUTINE BCD-FLOATING POINT CONV.	A105-20288
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8K SIO TELEPRINTER DRIVER (LP-COMPAT)	A002-24125
8K SIO SYSTEM DUMP	A008-20313
8K SIO TAPE READER DRIVER	A009-20306
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8K SIO TAPE PUNCH DRIVER (IBM 8 LEVEL)	A009-20316
8K SIO CARD READER DRIVER	A010-20324
8K SIO MARK SENSE CARD READER DRIVER	A010-20521
8K SIO HP2778A LINE PRINTER DRVR.	A011-20528
8K SIO DISC/DRUM DRIVER	A015-20079
8K SIO HP2020 MT DRIVER	A016-20314
8K SIO HP3030 MT DRIVER	A016-20331
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12K SIO TTY DRIVER	A002-20329
12K SIO TAPE READER DRIVER	A009-20327
12K SIO TAPE PUNCH DRIVER	A009-20328
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16K SIO TTY DRIVER	A002-20330
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16K SIO SYSTEM DUMP	A008-20335
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16K SIO TAPE READER DRIVER	A009-20319
16K SIO TAPE PUNCH DRIVER	A009-20320
16K SIO CARD READER DRIVER	A010-20332
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16K SIO HP2778A LINE PRINTER DRVR.	A011-20529
16K SIO DISC/DRUM DRIVER	A015-20081
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16K SIO HP3030 MT DRIVER	A016-20334