HEWLETT PACKARD

HP 1000
Software Update Notice

For Software Update A.84

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READER COMMENT SHEET
Software Update Notice (SUN)
5955-3257/E0884

We welcome your evaluation of this reference document. Your comments
and suggestions help us improve our publication.   Please answer the
following questions, using additional pages if necessary.

1. Are you satisfied with this update?   YES____   NO____
   Comments:

2. Please check the products you implemented in this update.

   ___ (24398A) Diagnostics   ___ (91750A) DS/1000-IV
   ___ (91751A) DSN/X.25 1000   ___ (92077A) RTE-A Op Sys
   ___ (92081A) Image/1000-II   ___ (91823A) Control/1000
   ___ (92833A) Pascal/1000   ___ (92836A) Fortran-7X
   ___ (92860A) Basic/1000C   ___ (92860A) Symbolic Debug/1000

3. How could we make this document more useful?

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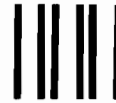
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|                                                |                  |
|   INTRODUCTION                                 |   CHAPTER  1     |
|                                                |                  |
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This introductory chapter is a brief explanation of the content and
format of the Software Update Notice (SUN).

1.1   Purpose of the SUN and how to use it.

The SUN accompanies software, firmware and/or manual updates. It is
designed to be a reference document to describe product changes and
to give general considerations on how to incorporate these changes in
the system.

The SUN performs basically three functions:

1) Describe the *changes* that have occurred *within a product* for
   both maintenance and enhancements (Chapter 2). If the change is
   in response to a Service Request from the field, this is noted.
   The descriptions are meant to be a quick overview to give the user
   a condensed look at the changes. More specific information must
   be obtained from the particular product's updated manuals.

   When changes made to a product affect the generation, loading, or
   installation of that product, mention is made in Chapter 4.
   Again, for specific   instructions you should refer   to the
   appropriate manual.

2) List the *Current Revision Codes, Updated Media* and *Manual Part
   Numbers* for each product (Chapter 3). This chapter indicates:

     - the current revision codes for the software modules and
       firmware belonging to a product,

     - the software media part numbers and firmware that are
       being shipped in this update cycle; these media will
       contain the updated software for a particular product,

     - the part numbers of the manuals that are being updated
       in this update cycle.

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Chapter 3 is not intended to replace the Software Numbering Catalog or Software Numbering File for each product, but rather it is intended to be a quick reference source for revision codes and a help in determining what media and manuals will be received by a customer for a particular product.

3) Describe different *media formats* sent to a customer along with a brief explanation of the *Software Update Procedures* associated with each media (Chapter 5). All software media can be read by HP-supported utilities which are described in various manuals. The user is directed to the appropriate reference manual for more specific instructions.

How to use the SUN:

The following are some suggestions to help you use the SUN as the reference it was intended to be:

- When you receive the SUN, check Chapter 1 for any changes that might have occurred in the SUN format and could affect how you will use it.

- Depending on the products for which you have a subscription service and the media you have chosen, you will receive a set of software and/or firmware media and manuals. If you are unfamiliar with the media you have received, check Chapter 5 for a description of the media format and suggestions for update procedures.

- Before you regenerate your system or load any software on-line, be sure to look through Chapter 4 to see if there have been any changes to load or generation procedures.

- Chapter 3 can be used to resolve any confusion concerning what software or manuals you should have received. Any software files or manuals that have been deleted from or added to the product will be highlighted there.

- Chapter 2, along with the updates you receive for your manuals, describes the corrections and enhancements made in this update cycle.

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IMPORTANT NOTE: The SUN is only a quick reference document for an update cycle and is not intended to supersede the product manuals. Refer to the product manuals for the precise information on how to use the product.

1.2   Update Naming Convention

The naming convention for update cycles is:

    x.yy where: x = A,B,C, etc
                  yy= last 2 digits of year

    e.g. A.83 = the first software update in 1983.

This naming convention will be used in all references to a particular cycle.

This current update cycle is referred to as 'A.84'. While this is the second update we have shipped this year, as was explained in the C.83 SUN, we could not simply change the name of that update. Thus, this is the first update in 1984.

The software in an update may be of different revision codes. This means that the revision code of a software product does not indicate the update cycle in which that software product will be released. An example would be: update A.88 could be released in March 1988 and could contain Graphics software of revision 2750, Image software of revision 2801, DD.00 driver of revision 2810, etc.

The next update is scheduled for the second quarter of 1984. It will be called A.85 (previously called B.84). It will include major operating system updates for RTE-A and RTE-6/VM.

1.3   SUN Format Changes

Chapter 2 is in a slightly different format. Entries are still sorted by product but are now additionally sorted by the type of entry: Enhancement, Problems/Solutions, and Notes. When available, a

KPR number is given (KPR entries come first within each subsection).

At present, KPR entries are not sorted. In the future they will be.

There have been some changes to the format of chapter 3 to allow use of the new hierarchical file system on RTE-A and RTE-6/VM. At this update, some products will be shipped in TF format. The files will be in a hierarchical structure with global and subdirectories. Also, individual file names can be up to twenty-one characters long (including the dot). To accomodate this, two changes have been made.

- The file name field was expanded from six characters to twenty-one. To accomodate this, the module field was eliminated.

- For products that are shipped in the hierarchical file format, path names are given on a separate line to help identify where specific parts can be found.

TF format is only used on subsystems that run only on RTE-A and RTE-6/VM (e.g., Debug/1000 and Image/1000-II). Other subsystems will remain unchanged (in format).

For specific information on updating systems in the new hierarchical file format, please refer to chapter 5.

Chapter 5 has added information about new media formats. Also, a new file called HPHPHP has been added to most update formats. Check chapter 5 for specific details.

+---+-------------------+
DESCRIPTION OF SOFTWARE CHANGES	CHAPTER 2
+---+-------------------+

This chapter lists the reasons behind the software changes in this
update. Where applicable, a Known Problem Report (KPR) number is
given. The entries are of three types: Problem/Solution,
Enhancement, and Note. A Problem/Solution entry describes the
problem and the basic steps taken to solve it. An Enhancement entry
similarly describes a change to software that improves its utility or
makes it easier to use. A Note entry is useful information about a
change that may have some impact but is not directly related to a
software fix or enhancement. All entries are sorted by part number.
For information on individual files that have changed, see chapter 3.

2.1   (24398A/B) Offline Peripheral Diagnostics (L, A-Series)

2.1.1   Enhancements

ENHANCEMENT: Support booting from MAC-HPIB devices.

ENHANCEMENT: Diagnostic support of MAC-HPIB discs on the A-Series.

ENHANCEMENT: Provide a diagnostic for the new tape drives
             (7974/7978).

2.1.2   Problems/Solutions

None.

2.1.3   Notes

NOTE: The 7906, 7920 and 7925 Mac discs have been added as
            additionally supported discs as of this release. These
            discs require an HP-IB interface and adapter kit to be
            used on the A-Series.

NOTE: For information regarding the changes made to the 24398A/B
            product for MAC-HPIB support, please see the HP 1000

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ICD/MAC Disc Diagnostic Reference Manual (5955-4355). For
changes to the RTE-A operating system made to support the
MAC-HPIB Drives, please see the 92077A section in this
chapter.

NOTE: For information regarding the changes made to the 24398A/B
           product for 7974/7978 support, please see the HP 7974
           Magnetic Tape Drive Exerciser Manual (24398-90007). For
           changes to the RTE-A operating system made to support the
           7974A magnetic tape drive, please see the 92077A section
           in this chapter. The 7978A magnetic tape is not supported
           in RTE-A at this time.

2.2   (91750A) DS/1000-IV

2.2.1   Enhancements

ENHANCEMENT: DS/3000 nodes will now be viewed by DS/1000 nodes as
             level one nodes and will no longer have to go through the
             input converter, INCNV.

ENHANCEMENT: PGMAD will observe the father-waiting bit in RTE-A ID
             segments. The session-handling parts of DS/1000-IV are
             concerned with allocating resources based upon father-son
             associations between programs. The intended definition of
             this relationship is that the father program is waiting
             until the son program terminates, but this information was
             not available in previous RTE-L-derived ID segments. It
             was recently added to the RTE-A ID segment. PGMAD now
             checks the father-waiting bit.

ENHANCEMENT: Under a system where SAM is nearly fully utilized,
             messages from old nodes (level 0) may not have been
             delivered to the appropriate monitor after they have been
             converted to new message format (level 1). This is
             because additional SAM was required to accommodate the
             conversion. This problem could be avoided if enough SAM
             were allocated by taking into consideration the possible
             message header expansion. In this case driver 65 was
             responsible for SAM allocation. Therefore a new driver
             DVB65 was created just to do this. The driver recognizes
             two new subchannels, types 30B and 31B. If the LU (EQT)
             is configured as either of these types and the message is
             a DS message (not download message), the driver adds six
             words to the incoming message size before scheduling QUEUE

to receive the message. NOTE: DVB65 is special and works only in specific network topology. See the DS/1000-IV Network Manager's manual Vol I. (91750-90010) for details.

2.2.2   Problems/Solutions

KPR 2200009142
PROBLEM: Under   certain   conditions DS/1000-3000 programs running over X.25 would abort. This was because the no-abort bit was not set in one EXEC call within D$X25.
SOLUTION: Set the no-abort bit in the call.

KPR 2200000547
PROBLEM: If PRCNM was called by a program with no father process or the father process had not established a session on the 3000, a jump was made to a common error processing routine. Upon completing the error processing, a return was attempted through the wrong entry point.   This would cause a DM or MP violation.
SOLUTION: PRCNM has been modified to perform its own error processing rather than call the common routine.   PRCNM will now return a negative one (-1) in the B register if an error is encountered (i.e. no father or no process established on the 3000). If no error is encountered a zero is returned. In addition, the user need no longer call PRCNM with the Session Main Process (SMP) number created by the father. PRCNM will check for any ancestor program which has established a session on the 3000 and use that session number as the SMP number.   The user may call with any non-zero value to establish communication and they will be returned the SMP number. In memory based systems a call with a zero value should be used to clear old communication data from any previous runs of the program.

KPR 2200009480
PROBLEM: When QCLM received messages from RQCNV and attempted to output the time sent by RQCNV, it would abort with I004 errors. This was due to the fact that the two words of time sent by RQCNV were reversed.
SOLUTION: The routine in RQCNV which set up the message to send to QCLM has been modified so that the two time words are now sent to QCLM in the correct order.

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KPR 2200031617
PROBLEM: If a program did a remote schedule of a program which then
            in turn wrote back to the same node, i.e. bounce back, a
            problem would arise after multiple iterations of this.
            Scenario: Assume program A is run from a transfer file at
            node 1.   Program A does a remote schedule with wait of
            program B at node 2.   Program B does DS calls back to node
            1,   i.e. uses a bounce back session at node 1.   When
            program B completes, program A ends and the transfer file
            loops back and repeats.   After multiple iterations of the
            transfer file (on the order of 32) the user will begin to
            see RS01(0) error messages reported at node 2 by node 2 on
            alternate requests sent to node 1.   The other requests
            will complete successfully to node 1.   If EXECW is OFed,
            the RS01(0) symptom will clear up.
SOLUTION: Each time EXECW handles a schedule request the EXECW
            sequence number is incremented.   The error came about when
            #MSSM read the session ID word out of the POOL entry and
            failed to mask off the EXECW sequence byte.   The sequence
            number eventually rolled over and destroyed the flag bits
            of a word in the NAT which used the session ID value.   The
            alternating errors came about due to an NAT (network
            access table) entry being created and then destroyed on
            alternate messages.   The solution is just that #MSSM now
            masks off the EXEXW sequence number when it retrieves the
            session ID value from the POOL.

KPR 5000002832
PROBLEM: Remat gave the user a REMAT 056 error (bad parameter) when
            a purge command (PU,file) was executed from a REMAT
            transfer file.
SOLUTION: Remat had a bug in the purge processing section which
            caused the command to not be interpreted as ASCII.   The
            error was that the wrong register was set up for the call
            to ASCHK (ASCII check).   The proper register is now being
            set up for the call.

KPR 2200007534
PROBLEM: When multiple 3000 programs accessed the same 1000 file
            via RFA, the first user would get an error when the second
            user was granted access to the same file.   This was
            because RQCNV placed its own ID segment address in the ID
            segment word of the DS/1000 message it built on behalf of
            the 3000 user.   When RFAM received two sets of requests
            for the same ID segment, it returned an error to the first
            user.
SOLUTION: RQCNV now puts the from process number of the 3000 (SMP)
            in the lower byte of the segment address word of the
            DS/1000 message.   Additionally, RQCNV puts the 3000 LU in

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the upper byte of this word. This change will allow multiple 3000 programs to access the same 1000 file. Notice that under this scheme, two programs running under the same 3000 session (with the same 3000 SMP) will NOT be able to share the same 1000 file.

KPR 2200009134
PROBLEM: An undefined entry point was introduced in the C.83 update (2340) in DS/1000-IV systems without links to a 3000. The entry point was: FC4FL.
SOLUTION: Add a dummy FC4FL to D$DND.

KPR 2200007559
PROBLEM: Carriage control directives from the 3000 were not always handled properly by D3KMS. In particular, there was no code in D3KMS to print forms control before the print to $STDLIST (pre-spacing).
SOLUTION: Code was added to D3KMS to handle forms control before prints. In adition code was added to support FCONTROL 1 (forms control FCONTROL).

KPR 5000007344
PROBLEM: There were numerous cases when DS/1000-IV was operating on top of X.25 when error recovery was not handled properly. These occurred running DS/1000-3000 and DS/1000-1000. To correct these problems, changes were made to X.25 and to DS. X.25 implemented a "release pool LU" (RPOOL) call for A.84. This call is necessary to release X.25 pool LUs allocated for DS/1000-3000 communication. The DS/1000-IV software was changed to make this call where necessary. The change required a new library pair to be created. Systems using X.25 pool LUs to communicate with an HP3000 should use the library $D3X25. Systems NOT using X.25 pool LUs for 3000 communication should use the library $D3N25. The old modules %D$X25 and %D$N25 have been incorporated in the new libraries. Note that these relocatable parts (16262 and 16266 respectively) have been obsoleted since they are part of a library and no longer separate parts. X.25 pool LUs were added to the 3000 LU table. DINIT now asks a new question to find out how many table entries are required for X.25 Pool LUs. The question is only asked if DINIT is loaded with the library $D3X25, and "YES" is the response to the question "HP 3000?". UPLIN now performs the cleanup of the X.25 pool LUs. Prior to A.84, it already cleaned up bisync LUs in the 3000 LU table. DSINF will now print out all X.25 pool LUs allocated to DS/1000-3000 programs in addition to DS/1000-3000 bisync LUs. HELLO was changed to release X.25 pool LUs on HELLO/BYE errors. QUEZ is now informed when X.25 pool LUs go down, and QUEZ prints an error

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message on the system console, as it currently does for bisync LUs. The error number will be 6 in the case of X.25 LUs. QUEZ is told that the LU went down via CSV66 and QUEUE.

SOLUTION: The changes described above were made to DS/1000-IV.

PROBLEM: UPLIN assumed that if a program was in state three it was all right to send it a time-out message. However, there are some circumstances where a program can become buffer limited and be in state three and unable to process messages on its class. If this happened, the master TCB would time out. UPLIN would see that the TCB had timed out and send a time-out message to the program. Since the program was unable to process messages, UPLIN would continue to send these time-out messages every five seconds, thus fragmenting SAM.

SOLUTION: A new meaning has been added to a bit in the time-out word of a master TCB. Bit eight in this word now indicates the TCB has timed out. When the timeout counter expires and rolls over to set this bit, a time-out message will be sent to the master program. Subsequent runs of UPLIN will check this bit and know that a time-out message has already been sent and no others will be sent.

PROBLEM: Bit 11 of the CONWD is defined as part of the function code in RTE-A but is undefined in RTE-6. DEXEC rejected calls with this bit set (except for the DEXEC extension to EXEC 1 known as "Interactive Write/Read").

SOLUTION: Permit bit 11 to be set in any call. Interpret it as Interactive Write/Read if ICODE is 1, otherwise pass it on to the operating system.

PROBLEM: An erroneous error was reported when DS/1000-IV tried to use an uninitialized link; a DS04(2) was reported. CSV66 refused to process the open line request if its own link status was up while X.25 link status was down. There was no line fail message for the 1000 to 3000 monitor QUEZ.

SOLUTION: Modified CSV66 to correct the problems; add code to send link down message to QUEZ (new message type for QUEUE known as type 7) and error code 6 (bit 4 - 7 in status word) is added.

2.2.3   Notes

NOTE: These changes require that if X.25 is used, it MUST be the A.84 version.

2.3   (91751A) DSN/X.25 1000

2.3.1   Enhancements

ENHANCEMENT: The name of the LINK command files used to load the
            DSN/X.25/1000 product were changed to replace the   "/"
            (conflict with the new file system) by a   "*".   In
            addition, on the A-Series the transfer file names were
            changed to reflect their use on RTE-A only.

ENHANCEMENT: The name of some modules were changed to better reflect
            their use on RTE-A only.

2.3.2   Problems/Solutions

KPR 2200054767
PROBLEM: If XTLOG and XPLOG were run simultaneously, the XTLOG file
            was corrupted.
SOLUTION: The Resource number handling between XNET, XTLOG, XPLOG
            was redesigned to take this conflict into consideration.

KPR 5000007062
PROBLEM: Abort and formatter error messages were sent to the
            Virtual Circuit LU.
SOLUTION: DVX00 and DDX00 were modified to send error & abort
            messages to system LU 1 when host-to-Host circuits are
            involved.

KPR 5000007302
PROBLEM: The primary program that was specified to be scheduled for
            a PAD Virtual Circuit (CI version) could not be
            rescheduled after exiting from the program.
SOLUTION: DDX00 was modified to handle this situation correctly.

KPR 5000007328
PROBLEM: The subroutine HELLO & BYE did not always deallocate their
            resources when using DS/DSN over X.25.
SOLUTION: Part of the solution to this problem was a modification of
            the POOL LU allocation scheme by the XNET program. The
            DS/1000 counterpart was also modified to correct this
            problem.

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KPR 2200007351
PROBLEM: If both the PRIMARY and SECONDARY programs were busy, the
            user was not able to get the "RTE:" prompt.
SOLUTION: DDX00 was corrected to handle the new RTE-A message map,
            which also corrected this problem.

KPR 5000007690
PROBLEM: Regular RTE breakmode did not work from a PAD terminal.
            (Regular breakmode is defined to be the "S=lu COMMAND ?"
            prompt in RTE-6/VM and the CM prompt in RTE-A.)
SOLUTION: Both XNET and DDX00 were modified to handle unsolicited
            PAD data properly.

KPR 5000007708
PROBLEM: System Abort messages were not displayed on a PAD
            terminal.
SOLUTION: DDX00 was corrected to handle the new RTE-A message map.

KPR 5000004747
PROBLEM: IF two RTE-6 systems were linked with X.25 and DS/1000 and
            one system was halted, SAM was corrupted by DS/1000-IV.
SOLUTION: This problem required modifications in DS/1000, the LAP-B
            firmware and X.25/1000. A new timer (T3) was implemented
            in the LAP-B firmware to detect that the host is halted
            and consequently disconnect the X.25 level 2.

2.3.3   Notes

None.

2.4   (92077A) RTE-A Operating System

2.4.1   Enhancements

KPR 2200007633
ENHANCEMENT: A pair of programs (DSAVE/DRSTR) has been added to do
            physical saves/restores to/from removable disc media.
            They will allow physical backup to a removable media e.g.
            micro-floppies in an environment such as a Micro/1000
            system with integrated peripherals.

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ENHANCEMENT: Support of the 9134XV 15 Mbyte winchester disk was added
to driver DD.30. A GEN record was added to for default
device driver parameters. See chapter 5 for information
about the 9133XV (15 Mbyte winchester w/micro-floppy).

ENHANCEMENT: Device Driver support of MAC-HPIB discs on the A-Series
has been added. The new device driver is DDM30.

ENHANCEMENT: Interface Driver support of MAC-HPIB discs on the
A-Series has been added. The enhanced interface driver is
ID.37.

ENHANCEMENT: A special driver needed for 24398B ICD/MAC diagnostics
and FORMT systems has been added to RTE-A. The driver,
IDM37, is only used for user-built FORMT systems.

ENHANCEMENT: Support of booting from MAC-HPIB devices has been added.
This software will work with in conjunction with the
current VCP firmware, Revision level 4004, or any later
versions.

ENHANCEMENT: Formatting support of MAC-HPIB discs on the A-Series has
been added. The enhancements necessary have been made to
FORMT.

ENHANCEMENT: Library changes ($DKLIB) for support of MAC-HPIB discs
on the A-Series have been made.

ENHANCEMENT: FTEST has been enhanced to support MAC-HPIB discs on the
A-Series.

ENHANCEMENT: IO program support of MAC-HPIB discs on the A-Series has
been added.

ENHANCEMENT: LDTYP support of MAC-HPIB discs on the A-Series has been
added.

ENHANCEMENT: The capability was added to the CS80 driver (DD.33) to
support stand-alone CTD as a peripheral by removing disc
caching for that LU. This enhancement will allow the
9144A to be added to the system using generation parameter
M9144. Due to the loss of cache (i.e. using start/stop
mode) the performance of the 9144A is about 30% of a
cached CTD. RTE-A will be enhanced in the future to
support streaming mode. The 9144A is not supported as a
bootable LU.

ENHANCEMENT: Add the capability to DDC12 to change the device time
out through a control request or generation time
parameter. This will allow for printing of longer
graphics buffer dumps such as vector graphics or bar
codes, both of which are supported by 2566A and 2563A.
Worst case for both printers is 14 meter printouts.
CN,lu,22B,<interface to>,<device to> is the command string
with times given in tens of milliseconds increments.

ENHANCEMENT: ID.50 has been enhanced to allow support of the video
card (12065A). The following changes to the software were
necessary:
                    - Cancel AUTO bit of DMA Control Word on both input and o
                    - Substitue DMA read/write information in place of option
                        parameter to be used as card control register (neces
                        for future graphics support to work).
                    - Cancel clearing of control register on driver exits.
All of the above enhancements were made to the subfunction
40 control request. Previously this request used the two
least significant bits (0 and 1) of PRAM 2. Now bits 2
and 3 are used for video functions.

ENHANCEMENT: A new driver, DD.24 has been added for the 7974 and 7978
magnetic tape drives. The 7974 is supported as of A.84 in
start/stop mode. Increased performance of the tape drive
in streaming mode is a future change requiring RTE-A
operating system modifications. The 7978 is not supported
until the operating system changes necessary to allow
streaming mode are made. These changes are estimated to
be completed at the time of the next update to RTE-A
(A.85, see chapter 1).

2.4.2   Problems/Solutions

PROBLEM: Sometimes a program would memory protect if there had
been a lot of swapping at the time of the power fail. The
routine $SELR was being called by mistake while processing
the power fail entry.
SOLUTION: ID.27 was changed to use $SETR. This will set the
relocation register to the correct map for the DVT.

PROBLEM: After a top of form is output to a line printer, a
<CR><LF> is output causing the paper to advance one line.
SOLUTION: DD.00 has been modified so that when setting up for a
formfeed, bit 7, which is the inhibit <CR><LF> bit, is set
in the control word so that the interface driver will not
append a <CR><LF> to the output.

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2.4.3   Notes

NOTE: Due to the increased size of the RTE-A operating system
            caused by the aforementioned enhancements, the mininum
            128k bytes memory system is no longer supported.

NOTE: The edit help file name has been changed from "EDIT. to
            EDIT.HLP::SYSTEM.

2.5   (92081A) Image/1000-II

2.5.1   Enhancements

None.

2.5.2   Problems/Solutions

KPR 5000011668
PROBLEM: The tables generated by DBDS did not correctly list the
            path and sort items.
SOLUTION: Code was corrected in DBDS to correctly list the path and
            sort items.

KPR 5000011288
PROBLEM: DBLOD did not restore a data base which had a corrupt key.
SOLUTION: Display the record that could not be put into the
            database, in both octal and ASCII format.

KPR 2200008540
PROBLEM: Loss of the transaction log file could result in missing
            transactions in the roll-forward log.
SOLUTION: The reason the last transactions may not be in the roll
            forward log is because they are spooled. The solution was
            to make spooling an option, controlled through the DBUTL
            LG command.

KPR 2200008532
PROBLEM: A database could be corrupted if an intrinsic needed to be
            rolled back immediately following a checkpoint.
SOLUTION: This condition has been corrected so that the before image
            file will always contain the necessary information.

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PROBLEM: IMAGE-II needs Pascal.lib and Pascal_Cds.Lib.
SOLUTION: Include Pascal.lib and Pascal_Cds.lib in IMAGE-II.

PROBLEM: The IMAGE product structure did not conform to the new
            file system naming conventions.
SOLUTION: The IMAGE product components are renamed to follow the new
            file system conventions.

PROBLEM: DBMON was too large to be loaded on an A-Series due to
            VMA calling FmpBuildName and related subroutines.
SOLUTION: Make DBMON smaller.

2.5.3   Notes

None.

2.6   (91823A) Control/1000

2.6.1   Enhancements

ENHANCEMENT: Support for thermocouples was added to the Control/1000
            software.   This consists of ten additional subroutines
            accessible by the user from $MCLIB. Modifications to
            $DEMLB were also made to allow access of these subroutines
            by the program DEMON.   Finally, $DEMLB was modified to
            provide for additional error checking when running DEMON.

2.6.2   Problems/Solutions

None.

2.6.3   Notes

None.

2.7   (92833A) Pascal/1000 (RTE-6/VM, RTE-A)

2.7.1   Enhancements

KPR 2200032458

ENHANCEMENT: Pascal has been enhanced to permit the synonyms for standard symbols that are described by the ANSI and HP standards.

KPR 2200001735

ENHANCEMENT: Pascal/1000 did not support the HP Pascal string data type (as Pascal/3000 does). As of revision A.84, Pascal/1000 meets the HP Pascal standard (including support of the string data type).

ENHANCEMENT: Pascal/1000 has been enhanced to allow generation of either CDS or Standard code by the compiler. The compiler itself is provided in both CDS and Standard versions.

2.7.2   Problems/Solutions

KPR 2200001305

PROBLEM: Pascal compiler reported error 261 (literal pool overflow) in routines with large numbers of literals. The compiler used a fixed size, non-expandable table for pooling literals.

SOLUTION: The compiler was changed to use a dynamically allocated data structure for literal pooling. Error 261 can no longer occur.

KPR 2200001552

PROBLEM: Accessing single elements of a PACKED ARRAY OF CHAR caused syntax errors (often of the 400 and above variety).

SOLUTION: A correction was made to the tree transformation routines so that code could be correctly generated for such access.

KPR 2200002311

PROBLEM: Syntax error 448 occurred using WITH statements on certain PACKED RECORD types.

SOLUTION: A correction was made to the tree transformation routines so that code could be correctly generated for such statements.

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KPR 2200004630
PROBLEM: Syntax error 427 occurred using an expression in the
            decimal position field when writing a REAL or LONGREAL
            expression to a TEXT file.
SOLUTION: The write routine parser was corrected to permit an an
            expression in the decimal position field and to provide
            the correct information to the code generator.

KPR 2200004648
PROBLEM: Insufficient error information was provided when more than
            one EMA/VMA object was passed to a VAR parameter specified
            with HEAPPARMS OFF. Error 398 was reported and was only
            reported once.
SOLUTION: The routine call parser was changed to provide a more
            specific error (Error 198: Heap variable may not be
            passed by reference in this context) and to report this
            error for each parameter which is in violation.

KPR 2200007484
PROBLEM: $PLIB revision B.83 (Rev. 2326) contained an entry point
            ERRO so that it could intercept ERRO calls. If the
            library was included in the SNAP, it could cause Pascal
            library routines to be loaded with non-Pascal programs
            which reference ERRO.
SOLUTION: Pascal no longer attempts to intercept ERRO calls, and the
            entry point ERRO is no longer in the Pascal library.

KPR 2200007963
PROBLEM: Pascal misnamed the default relocatable file when no
            working directory was active (e.g., WD,0).
SOLUTION: The monitor program, which expands default file names, has
            been corrected to generate the appropriate default file
            name.

KPR 2200020636
PROBLEM: Pas.GetMemInfo2 returned an incorrect value for the
            initial top of heap for some sizes of VMA.
SOLUTION: Pas.GetMemInfo2 was corrected to return the correct value
            for the initial top of heap for all sizes of VMA.

KPR 2200021238
PROBLEM: PACKED ARRAYs OF CHAR inside PACKED RECORDs may have been
            accessed incorrectly.
SOLUTION: A correction was made to the tree transformation routines
            so that code could be correctly generated for such
            accesses.

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KPR 2200022400
PROBLEM: Comparison of two valid set denotations (set of an
            enumerated type) caused a value out of range runtime
            error.
SOLUTION: The set denotation parser was corrected to provide the
            correct information on the value of the set denotation
            components to the code generator.

KPR 2200024562
PROBLEM: EOF was not properly detected for type 1 files causing FMP
            error -12 to be reported.
SOLUTION: The library has been corrected to properly detect EOF for
            type 1 files.

KPR 2200025015
PROBLEM: The sequence
                    Pas.GetMemInfo2 (Info);
                    Pas.SetMemInfo2 (Info);
                    Pas.GetMemInfo2 (Info);
            yielded incorrect results.
SOLUTION: Pas.GetMemInfo2 and Pas.SetMemInfo2 were corrected so that
            this sequence yields the correct results.

KPR 2200027219
PROBLEM: A user supplied Pascal error catcher (Pas.ErrorCatcher)
            was entered twice, first with a FMP -6, and then with a
            FMP -11, if reset failed to find a file.
SOLUTION: The reset procedure in the library was modified to report
            at most one error on any given attempt to open a file.

KPR 2200030684
PROBLEM: The PACKED modifier did   not distribute to multiple
            dimensions in an array type specification. For example:
                    FOO = PACKED ARRAY [1..10,1..10] OF BOOLEAN;
            was equivalent to
                    FOO = PACKED ARRAY [1..10] OF
                              ARRAY [1..10] OF BOOLEAN;
SOLUTION: The array   specification processor   was modified   to
            correctly distribute the PACKED specification (as per
            ANSI/HP standard) so that the first specification above is
            now equivalent to:
                    FOO = PACKED ARRAY [1..10] OF
                              PACKED ARRAY [1..10] OF BOOLEAN;

KPR 5000004127
PROBLEM: Access to large PACKED ARRAYS in HEAP 2 could fail because
            mapping was performed incorrectly.
SOLUTION: The code generator was modified to map correctly for such
            access.

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KPR 5000005777
PROBLEM: The routine Pas.AlSharedSize in the Pascal library was
           type 4 instead of type 7.
SOLUTION: The routine Pas.AlSharedSize has been corrected to be type
           7.

KPR 5000007849
PROBLEM: Pascal scheduled MACRO even if no relocatable or a
           relocatable of zero was specified.
SOLUTION: Pascal has been corrected to not schedule MACRO in such
           cases.

KPR 5000010447
PROBLEM: Single character lines in files created on a new file
           system volume were seen as empty by the Pascal compiler.
           If the character was a comment delimiter, the comment
           delimiter would be ignored.
SOLUTION: The source file scanner has been corrected to properly
           handle single character lines.

KPR 5000013755
PROBLEM: A multiplication that should have been done in two-word
           integer mode was done in one-word integer mode.   As an
           example:

```
           PROGRAM foo (input, output);

           VAR
              digit:  CHAR;
              sumget: INTEGER;

           BEGIN
              readln (digit);
              sumget := 26*26*1000*(ord (digit) - ord ('A'));
              writeln (sumget);
           END.
```

SOLUTION: The tree transformation routines were corrected to cause
           the code generator to do a two-word multiplication.

KPR 2200002071
PROBLEM: A Pascal subprogram unit used with a FORTRAN (or other
           non-Pascal) main program, required the entry points Pas.1
           and Pas.2, which are not in any libraries. The problem
           was that the subprogram unit in question declares one or
           more of variables, string literal constants, or structured
           constants in its global declaration part. Variables, and
           string literals, and structured constants which are
           declared in the global declaration part of any compilation
           unit, are expected by the Pascal compiler to have been
           allocated when the Pascal main program unit (with the same

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declarations) was compiled. Subprogram (or segment) compilation units containing such declarations can only be used with a Pascal main program containing the same declarations.

SOLUTION: The MODULE construct, available with revision A.84, provides a method to group related routines along with "globally" accessible constants and variables in such a way that such "libraries" can be used with non-Pascal main programs.

KPR 2200004457

PROBLEM: A declaration of a structured constant equated to another structured constant elicited a syntax error 398.

SOLUTION: An enhancement had been made to permit this construct, however it was not permitted before A.84. A correct program can be described with the syntax diagrams, but all paths through the syntax diagrams do not generate correct programs (often because of semantic issues). For example, INTEGER is an identifier, but unless it is redefined as a variable, you cannot say:

        INTEGER := 10;

although the syntax diagrams permit:

        <identifier> := <expression>;

In addition, this bug reports that error 398 occurs; error 398 is specifically an implementation restriction on a construct that would normally be allowed (and in this case which is allowed at A.84).

2.7.3   Notes

NOTE: The $XREF$ (and the cross referencer) are no longer supplied as of revision A.84.

2.8   (92836A) Fortran-77

2.8.1   Enhancements

KPR 2200006049

ENHANCEMENT: FTN7X has been enhanced to allow the $ALIAS directive to appear anywhere within the user's program, provided it appears before the first reference to the variable being

ALIASed.

ENHANCEMENT: If the source file name is given without an extension,
and the file is not found, the type extension .FTN is
added to the name and the file is looked for again.

ENHANCEMENT: Some symbol table space was recovered by using the
eighth page of EMA. Note that the load file #FTN7X has
been changed to allocate 8 pages of EMA (if EMA is to be
used).

2.8.2   Problems/Solutions

KPR 2200000752
PROBLEM: Character variables could not be initialized with data
statements. Save statements in procedures seem to work
fine, however any character variables declared locally to
the procedure cannot be initialized with data statements.
No error occurs when both data and save are used but
character variables contain nulls rather than values they
were initialized to.
SOLUTION: This problem is fixed in A.84.

KPR 2200001446
PROBLEM: Programs with Null characters (000000) at the end of a
write statement compiled correctly, however run time
errors occurred during execution.   Compiler should ignore
nulls or convert to blanks.
SOLUTION: FTN7X currently allows null characters to appear within
strings and Hollerith fields (they are illegal elsewhere).

KPR 2200002832
PROBLEM: When in ANSI 66 mode, if a program declared the intrinsic
routine PCOUNT to be INTEGER*2, FTN7X would not treat a
reference to PCOUNT as an intrinsic but as an external.
SOLUTION: FTN7X was treating INTEGER*2 as an illegal type for
PCOUNT, so it assumed that it must be external. Now,
FTN7X treats both INTEGER*2 and INTEGER*4 as legal type
for PCOUNT, and it will treat it as an intrinsic (as it
should).

KPR 2200003913
PROBLEM: The fortran compiler produced incorrect code in the
situation shown in the following assignment statement:

Character*(*) old(*)
Integer oldlengths(*)
Integer this, ind

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```
ind = INDEX('...$1...',old(this)(:oldlengths(this)))
```

The problem occurred when any expression (in this case an array element) was used to define the substring of a string array.

SOLUTION: The software has been corrected.

KPR 2200004358
PROBLEM: FTN7X set up its .IMAP call incorrectly when passing an EMA array to a subroutine.
SOLUTION: The software has been corrected.

KPR 2200006031
PROBLEM: An internal compiler error occurred in the following subroutine:

```
SUBROUTINE SUB(IA)
WRITE(1,IA)
END
```

FTN7X was treating the variable IA as if it contained a statement number (which is correct), but, it was losing one level of indirection when it used the variable. This caused it to pick up garbage for the format statement.

SOLUTION: The software has been corrected.

KPR 2200006213
PROBLEM: Double precision real calculation on an A700 with hardware floating point sometimes failed with exponent equal to 0.
SOLUTION: FTN7X was modified to avoid generating the .BLE instruction with overlapping operand and result (avoiding a firmware problem).

KPR 2200007278
PROBLEM: When compiling a subprogram with a cross reference specified, some symbols had a reference to the same line number. This problem only occurred when passing a character variable to a subroutine.
SOLUTION: The software has been corrected.

KPR 2200007856
PROBLEM: If a character variable appeared as a parameter in more than one ENTRY statement (or a SUBROUTINE/FUNCTION statement and an ENTRY statement), the compiler aborted with an internal error. This only occurred when the same character variable appears more than once.

SOLUTION: The software has been corrected.

KPR 2200008243
PROBLEM: When using DECODE, and the number of characters in the
          buffer was variable, it was possible for FTN7X to doubly
          use the temporary storage location that held the length of
          the buffer.
SOLUTION: The software has been corrected.

KPR 2200008565
PROBLEM: With CDS on, FTN7X didn't handle properly the case where a
          procedure was passed to a routine as a parameter, and then
          passed to another routine. For example:

                  External Proc
                  call Sub1(Proc)
                  . . .
                  Subroutine Sub1(proc)
                  call Sub2(proc)
                  . . .
                  Subroutine Sub2(proc)
                  call Proc()
          With CDS off, this code works okay.
SOLUTION: The software has been corrected.

KPR 2200008953
PROBLEM: FTN7X 'E' option didn't work on RTE-6/VM with a subroutine
          call.
SOLUTION: The software has been corrected.

KPR 2200009118
PROBLEM: When calculating the square root of a complex number in
          double precision versus single precision, principle roots
          returned by double precision are opposite in sign to those
          of single precision. Regardless of which principle root
          is returned the two methods should agree.
SOLUTION: The software has been corrected.

KPR 2200014761
PROBLEM: FTN7X compiler would not write line numbers (of original
          source) greater than 9999 into list file. Lines > 9999
          are labelled ?? instead.
SOLUTION: Line numbers above 9999 are printed as a MOD of 10000.

KPR 5000004952
PROBLEM: If an ENCODE or DECODE was tried with the buffer in
          COMMON, and the buffer was not the first entry in the
          COMMON block, the program aborted.

SOLUTION: The software has been corrected.

KPR 5000011346
PROBLEM: Assigning a value to a substring of a character array
            failed in CDS mode. The following example failed:
                $CDS ON
                    program bug
                    integer calls(2)
                    character * 80 linea(2)
                    data calls /21,26/
                    i=1
                    linea(i) (calls(i):calls(i)) = 'x'
                    end
SOLUTION: The software has been corrected.

KPR 5000012047
PROBLEM: Fortran subroutine got a "*** PLEASE REPORT TO HP***"
            error after a syntax error was found.
SOLUTION: The software has been corrected.

KPR 5000014118
PROBLEM: When a scratch file of ACCESS='sequential' was created,
            followed by a scratch file of ACCESS='direct', there was a
            runtime error of 460: 'an OPEN specified direct access;,
            but the file to be opened was sequential access (not 1 or
            2 file type)'
SOLUTION: The software has been corrected.

PROBLEM: When the compiler purged its scratch files, it did not use
            the full path name, so if a WD command had been done
            during the compilation, the purging process would generate
            an error.
SOLUTION: The compiler now uses the full path name of the scratch
            files.

PROBLEM: In WRITE statements, when the data could be output only by
            adjusting the format (e.g., reducing the number of decimal
            places), it would sometimes adjust and sometimes not (when
            not, it would print stars).
SOLUTION: The compiler now always adjusts the format.

PROBLEM: INCLUDE'ed symbols were printed in the cross-reference
            without the '+' if the symbol was only referenced once.
SOLUTION: The software has been corrected.

PROBLEM: Bad code was generated when an EMA call-by-reference
            parameter was passed to a character function.

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SOLUTION: The software has been corrected.

PROBLEM: An error 32 was erroneously generated when a line had only
            a 'D' in column one (no other text) and the source was
            compiled with the 'D' option.
SOLUTION: The software has been corrected.

PROBLEM: If the compiler ran out of symbol table space while
            compiling a DATA statement, it could generate a spurious
            error. This would occur before the symbol table overflow
            error.
SOLUTION: The software has been corrected.

2.8.3   Notes

None.

2.9   (92857A) Basic/1000C

2.9.1   Enhancements

ENHANCEMENT: BASIC/1000C underwent massive changes   in order to
            support the matrix statements, new file system, and to
            have the compiler emit CDS code.

2.9.2   Problems/Solutions

KPR 2200006965
PROBLEM: The PLIST command in the Interpreter appears to use the
            first character of output for carriage control.   This is
            only a problem on the A-series.
SOLUTION: The HPIBU module was changed so that the text does not
            appear as a control character to the line printer.

KPR 2200000372
PROBLEM: If many variables were accessed in a program unit before
            their declarations, the BASIC compiler would report
            'null_index' error and abort.
SOLUTION: The compiler has been corrected to handle this situation
            properly.

KPR 2200000448
PROBLEM: The STOP statement did not work if it was declared in a
           function in a compiled program.
SOLUTION: The STOP function is now operational from functions as
           well as subprograms.

KPR 2200000612
PROBLEM: When there was an error concerning the display device in a
           subprogram, the default condition of the user terminal
           would not occur at run-time.
SOLUTION: The display device default now works in subprograms
           properly.

KPR 2200001420
PROBLEM: Program units which contain calls to routines that are
           aliased to the same name are not accepted by LOADR or
           MLLDR. These loaders would issue an illegal relocatable
           error.
SOLUTION: This problem was caused by the compiler emitting two
           identical ENT's for the same name. The compiler has now
           been corrected to emit the name just once.

KPR 2200002089
PROBLEM: If a string array element is the right-most variable in a
           multiple string assignment, a compiler error 1612 would
           occur.
SOLUTION: Multiple string assignments, including those involving
           elements, now can be compiled successfully.

KPR 2200005827
PROBLEM: If ON ERROR was in effect with the response routine being
           a subprogram and the current program unit was nested
           within that response routine and an error occurred, the
           error reported was a recursion error. This was correct,
           but the line number was that of the statement that
           initially caused the error, not the line number of the ON
           ERROR statement that had the erroneous recursive response
           CALL.
SOLUTION: In the process of adding CDS support, the line number
           reported is now correct.

KPR 2200007211
PROBLEM: When making an attempt to pass a non-EMA parameter to an
           EMA parameter, a "COMPILER BUG" error would occur at
           compilation time.
SOLUTION: An error stating that the types do not match is now
           issued.

KPR 2200007237
PROBLEM: The specification of an LU with a secondary address in an
            ASSIGN statement was not parsed properly in the compiler.
SOLUTION: Secondary addresses are now accepted by the compiler in an
            ASSIGN statement.

KPR 2200008516
PROBLEM: If a SUBEXIT statement was issued outside of a subprogram
            unit, the compiler would VM or DM.
SOLUTION: An error message informing the user that a SUBEXIT
            statement cannot be outside of a subprogram is now being
            issued.

KPR 2200009316
PROBLEM: As of the B.83 version of the RTE-A operating system, a
            compiled BASIC program that utilized HP-IB statments and
            had the ASSIGNing of the LU to a constant, would issue a
            run-time error of 73 (I/O specifier not allowed with HP-IB
            statement) when the HP-IB statements were referenced.
SOLUTION: The .OPSY value for RTE-A was changed at B.83.   The
            compiled program checks this value only   for HP-IB
            statements and would, therefore, not agree. The check has
            been changed to compare the .OPSY value of RTE-6 only and
            assume that the OS is RTE-A if that comparison does not
            agree.

PROBLEM: If an interpreted BASIC main routine called a compiled
            BASIC string function, the function did not return the
            appropriate results.
SOLUTION: A new parameter option was added to BBMG and BCALL to
            allow the user to specify that a fixed string parameter is
            being passed. This change was noted in the Reference
            manual.

2.9.3   Notes

NOTE: The BASIC interpreter, compiler, and compiled programs
            require the use of the 2401 version of the Pascal run-time
            libraries.   Therefore, for 2401 release of BASIC, two
            pascal libraries will be provided with the BASIC product.
            The following five install files were changed to copy the
            PASCAL.LIB and PASCAL_CDS.LIB from the BASIC directory to
            the /LIBRARIES directory.

                        INSTALL_A_BAS.CMD
                        INSTALL_6_BAS.CMD
                        INSTALL_6.CMD
                        INSTALL_A.CMD
                        A92857.SNF

NOTE: Since the LINKer supplied with RTE-A and RTE-6 has been
            updated as of C.83, there is no longer a need to supply it
            with the BASIC/1000C Product. Therefore, it has been
            deleted.

NOTE: The file names for the entire BASIC product were changed
            in order to take advantage of the new file system
            structure.

NOTE: Some libraries increased in size due to the addition of
            the new features. This required a break-up of:
                        (1) RLIB3.LIB into RLIB3.LIB and RLIB4.LIB
                        (2) CBASIC.LIB into CBASIC1.REL AND CBASIC2.REL,
                        (3) CBASIC_CDS.LIB into CBASIC_CDS1.REL and CBASIC_CDS2.RE

2.10   (92860A) Symbolic Debug/1000

2.10.1   Enhancements

ENHANCEMENT: Symbolic Debug has been enhanced to allow debug of
            Pascal and compiled Basic/1000-C programs.

ENHANCEMENT: The software has been enhanced to allow the user to to
            display (but not modify) the program counter via 'D [p]'.
            Attempts to modify P elicit a warning.

ENHANCEMENT: Created one routine to clear all breakpoints.

ENHANCEMENT: 'W' failed to show names of library routines. One just
            got an octal number. DSPOT would do this for any module
            lacking line number info, even though the module name was
            easily known.   DSPOT now always shows the module name,
            with an octal address rather than a decimal line number if
            the module has no line number info. It also will put "??"
            as the name if it cannot find the name.

ENHANCEMENT: Debug's main has been enhanced to share duplicate data
rather than having its own. This involved the creation of
a common block: USEFUL_CHARS.

ENHANCEMENT: CPARE has been enhanced to use a table in common rather
than its own table.

ENHANCEMENT: Split the 4000+ lines of the source SINIT up into pieces
for easier handling.

ENHANCEMENT: CombineD CheckCDS, DNLevel, SetCDSSegBreak,
ClearCDSSegBreak, Was_OverLaid, and Is_Entry_Number into a
macro routine to reduce codespace. CheckCDS must return,
the rest should report an error and terminate Debug via a
call to DnitD. Saved 15 words in the main.

2.10.2   Problems/Solutions

KPR 2200002550 and KPR 5000009225
PROBLEM: DEBUG could not single step DLOG because the variable
            GotThisFar wasn't being saved properly in STEPB.
SOLUTION: RealGotThisFar is used to save the first occurrence of a
            non-steppable instruction, and is assigned to GotThisFar
            upon exit from STEPB.

KPR 2200002782
PROBLEM: DEBUG could not talk to 2640B terminals because the length
            of the status returned was tested against 9 bytes when its
            length is actually 8.
SOLUTION: The software has been corrected.

KPR 2200004341, KPR 2200005660, KPR 2200030056, and KPR 2200030064
PROBLEM: DEBUG failed to pass RMPAR parameters to the program being
            debugged.
SOLUTION: A new run string option has been added. When a '+P'
            appears anywhere between DEBUG and the target program
            name, Debug will NOT modify the parameters in any way, but
            will just pass them on to the target program.

KPR 2200003939
PROBLEM: DEBUG failed to display REAL*4 as a character array
            correctly because GETVL and GETVAR seemed to think the
            size of an element was one word.
SOLUTION: Changed DOSUBSCRIPT to pay attention to subscripts when
            determining the size of an element.

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KPR 2200030106
PROBLEM: DEBUG MP's when attempting to use the step trace command
            with a range because segment DEBU1 was aborting, while
            executing in SSTEP.
SOLUTION: The software has been corrected.

KPR 5000006346 and KPR 5000009183
PROBLEM: The user program ran to completion while single stepping a
            large CDS program after the first 'S' command.
SOLUTION: The software has been corrected.

KPR 5000008540
PROBLEM: A histogram for non-CDS routines in a CDS program was
            reported as using 100% of the CPU on the first line of the
            routine. HISTOGRAM was setting CODEMR to 4 if CouldBeCDS
            was true, ignoring the possibility that one could execute
            old code, which has an MR of one. PLOTLOCATION failed to
            check if CURRENTSEG was zero, which means that the address
            is in data space.
SOLUTION: PLOTLOCATION sets CODEMR to one if CURRENTSEG is zero, as
            of A.84.

KPR 5000012963
PROBLEM: Debug used calls to EXEC, and REIO, using the one-word
            integer global TRMLU as the LU number to communicate with
            for all its IO. These calls would not accept LU numbers
            greater than 6ు.
SOLUTION: Replace all calls to REIO with calls to XREIO, and the
            appropriate calls to EXEC with XLUEX, and change TRMLU
            into a 2-word integer, and set up the appropriate bits in
            TRMLU. Note that BLDDB need only know about LU 1, the
            terminal screen, and none of its modules have been
            changed.

PROBLEM: DEBUG was reporting an internal error in response to: This
            occurred after DISP called PREPER with the address
            returned by GETVAR.   When GETVAR failed, it returned
            either a negative error number or some huge address, which
            did not correspond to any defined error number.
SOLUTION: DISP now tests for such a number, and passes a -1 if this
            is the case. This causes an "address out of range"
            message to appear, as it should.

PROBLEM: DEBUG thought a valid Pascal pointer was NIL.   The user
            program was compiled with the $HEAP 2$ option, so all
            pointers were 2 words long.   However, the VM option was
            omitted from the LINK command file, so the high order word
            was always 0.
SOLUTION: GETVAR now checks both words. The pointer is NIL only if

both words are zero.

PROBLEM: Pascal CHAR variables could not be modified because RDVAL was ignoring the type of these items.
SOLUTION: RDVAL now handles this Pascal type.

PROBLEM: The DEBUG information file left was open after termination. CLEANUP was closing the information file only if SNEW was true, which means BLDDB had been scheduled to build the symbol table.
SOLUTION: Close the file regardless of the value of the global SNEW.

PROBLEM: '? *' gets non-specific response. The error message file had nothing to say about comments.
SOLUTION: Help information for the comment command has been put into the debug error message file.

PROBLEM: An error 56 would occur if the where command, 'W', was in a Pascal main. BTRACE looked at the "segment" name of the main, which, for Pascal, was incorrect.
SOLUTION: The software has been corrected.

PROBLEM: DEBUG was ignoring breakmode 'BR' command. CONT calls IFBRK before calling NEWSG, which checks for segment switches. If the break flag was set, AND there was a segment switch, then the segment switch would not be noted.
SOLUTION: CONT now calls NEWSG before IFBRK, so the segment number is correct.

PROBLEM: MP violation reported as error 20. In CONT: newnode <> -1, SWICH fails, GTEMP is true, but found is false, so CONT fails to call HANDLE_VIOLATION. There is a GOTO 999 in the THEN clause having the comment: "YOU'RE A DEAD DUCK".
SOLUTION: Deleted the GOTO 999.

PROBLEM: DEBUG was stepping into the LAST line of a routine because SSTEP passed .true. instead of .false. to MCONT in the 95117 loop.
SOLUTION: SSTEP_PCALA now passes .false.

PROBLEM: The FMPSETPOSITION call in FIND reports that DDDCB is not open. This is because that DCB is being used by the profiler for its data file.
SOLUTION: 'F' command is now documented as being illegal in overview mode.

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PROBLEM: 'D 0b:10' and 'D 2b:8' failed to agree. The values peeked
            at and returned by DOPOK were picked up from different
            locations. Any location that resolved to either address 0
            or 1 (the A or B registers) caused DOPOK to peek at the ID
            segment, not at the user program's memory.
SOLUTION: If the repeat count is greater than 1, peek at memory, not
            the ID segment.

PROBLEM: 'S' on Pascal CASE statement caused the user program to
            run to completion when single stepping a Pascal CASE
            statement. The compiler used a JMP 0,I instruction to
            implement a jump table. The single stepper would not
            enter hipboot mode in such instructions, where the
            register will probably have an incorrect value until just
            before the instruction is to be executed. STEPB failed to
            return -1 when such code was encountered. STEPB should
            return the address of the first instruction that it could
            not handle and hipboot mode should take over.
SOLUTION: Any indirect jump via a register gets hipbooted.

PROBLEM: Display of heap 2 pointer to a string fails. RPEEK, when
            called from Pascal_STRING, gets the string header from EMA
            without a problem, but sets EMAValid to false, causing
            subsequent calls to RPEEK to look in non-EMA.
SOLUTION: GETVAR resets EMAValid to true so RPEEK, when called from
            DISP, will again look in EMA for the string buffer of
            characters.

PROBLEM: Several routines use their own local data for register
            names.
SOLUTION: The software has been corrected.

PROBLEM: 'O' command, when an OVR file already exists, gives you a
            prompt to purge that file. Any non-affirmative response
            gets error 110, followed by "Save profile data [n]?"
SOLUTION: The software has been corrected.

PROBLEM: Goto command was not listed when '?' entered. Error
            message file wrong.
SOLUTION: The software has been corrected.

PROBLEM: If no dot or arrow was found, then GETVAR would try
            calling GETVL again.
SOLUTION: Now GETVAR only calls GETVL if such a character was
            actually found.

PROBLEM: Need only one load command file for BLDDB because there is
            no difference between them.
SOLUTION: The file #BLDN6 was replaced by BLDDB.LOD.

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PROBLEM: SWICH needs to be told whether or not to clear the screen screen when a new module has been entered. This is needed now because we always must step into PCALX/V's, then look around to find out if this new module is !GOTO or !ARTN or not. We want to do this quietly.

SOLUTION: Another parameter, BENOISY, is now passed, and it only updates CMODNN if the new module has line number info.

PROBLEM: DEBUG would fail to stop at a set breakpoint when performing 'P' command.

SOLUTION: The software has been corrected.

PROBLEM: Extents on type 1 debug file can grow huge because BUIL1 added 24, instead of 32 to the FS variable.

SOLUTION: The software now adds 32.

PROBLEM: Need a way to graphically display what is in the symbol table.

SOLUTION: A new segment DEBUX has been added.

PROBLEM: REPER and PREPER did not share their display buffer and this would sometimes cause the display to become garbled.

SOLUTION: They now share ENTRY points with one routine: Report_Error.

PROBLEM: Since Profile and Histogram overlay the BREAK tables with overview data points, it turns out that NewSg cannot clear breaks left over in other CDS segments very well.

SOLUTION: Merge DEBU4 and DEBU8 into one segment, allowing a new common block called PROFILE_DATA to be shared between the overview routines. This also recovers the 10 words of segmenting overhead in the main.

PROBLEM: Using the 'S' command on Pascal CASE statement would cause DEBUG to loop. CDI in DEST6/L NEVER handled peeks to the A or B registers correctly when in CDS mode. It needed to check that BODY was greater than 1 (the reference was through one of the registers) when checking if the MR should be the passed in MR (which was 4 for code) or 1 for data. The registers are in data, so the MR should be forced to 1.

SOLUTION: The software has been corrected.

PROBLEM: 51 breakpoints could be set which was one over the limit.
SOLUTION: Updated the master file for the test.

PROBLEM: DEBUG was running out of memory in the main. The breakpoint tables comprised six tables of 50 words each.

SOLUTION: Since it was determined that 25 break/tracepoints would be

more than necessary, Debug now allows only that many. This increased the size of free space by over 150 words. Also made an include file for the common and data for the breakpoint tables, combining the BREAKPOINTS and SEGS common blocks. Add a global variable with a value equal to the maximum number of breaks allowed.

PROBLEM: Declarations of the same items in common by different sources may not match.

SOLUTION: Use an include file to "import" shared data. This would insure that there is only one place where a declaration resides.

PROBLEM: On 2621 terminals, the display showed twice the characters requested because RDREC was not negating the length passed to it.

SOLUTION: RDREC negates the length as of A.84.

PROBLEM: DEBUG would go into an infinite loop when stepping into a call to a direct, nested, routine.

SOLUTION: The software has been corrected as a side effect of the other changes to the single stepping processors.

PROBLEM: When the target program name was entered in the run string without the RUN type extension, PROFILE (formerly OVER) would use the "=" prefix, instead of the ".OVR" suffix.

SOLUTION: As of A.84, DEBUG uses the new common variable SAVEDUNAME, instead of UNAME, on which to base the profile data file name.

PROBLEM: DEBUG would display "Can't single step" message when a 'S I' request was entered at the END of the last invocation of a recursive routine.

SOLUTION: The software was corrected due to another change to WHERE.

PROBLEM: The Pascal scope rules were not obeyed when displaying non-local variables. The subroutine WHERE was calling GENT, thinking it would return the address of the first line of the module.

SOLUTION: WHERE now calls GFL.

PROBLEM: DEBUG's 'W' command was off by one segment in large, CDS program because the symbol table was getting the segment number wrong.

SOLUTION: Fixed BILDS to process segment records properly.

PROBLEM: Pascal or BASIC strings were not displayed correctly with the 'W' command. PDUMP was not calling GETVAR to process the parameters. It was doing its own processing with duplicate code.

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SOLUTION: PDUMP now calls Pascal_STRING and BASIC_STRING.

PROBLEM: Could not display non-local variable in CDS code. This
           was caused by DNLEVEL using the low address of the
           enclosing, level 1 routine as the low bound with which to
           search the activation records for the locals of a more
           deeply nested routine.
SOLUTION: The software has been changed to use the address of the
           first line of code, which more accurately reflects the
           bound of the activation record in the stack.

PROBLEM: DEBUG would wind up at the Pascal END statement after
           stepping into the routine. STEPB was probably setting a
           break at the entry point of the Pascal routine, not the
           first line.
SOLUTION: STEPB now sets the break at the first line.

PROBLEM: Spurious and temporary breaks were left at octal
           addresses. SSTEP was confused as to where he was, and
           failed to call KNOCKEMDOWN after arriving at the
           destination.
SOLUTION: SSTEP calls KNOCKEMDOWN correctly.

PROBLEM: Conditional break using Pascal or FORTRAN string variables
           failed. BCHEK was not checking if the item conditioned on
           was a string. CPARE was not handling Pascal string types.
SOLUTION: The software has been corrected.

PROBLEM: A garbage character remained in runstring passed to target
           from Debug. DEBUG, in DO_RUN_STRING, deletes several
           parameters from the original run string, and passes the
           remainder to the target via an EXEC call. If the
           remaining string was of an odd length, an extra character
           would be passed by the operating system, but the length
           would be correct. However, the target could still see the
           extra character.
SOLUTION: DEBUG now blanks out the odd character.

PROBLEM: Displaying the address of strings with 'D \s' would cause
           GETVAR to return the address of the header, not the
           characters of a string.
SOLUTION: GETVAR now returns the address of the first character.

PROBLEM: Using the command 'S I' at a call to the Pascal NEW
           procedure would produce errors 85 and 20 because DEST
           failed to distinguish between the 5 types of PCALs.
SOLUTION: DEST now tells its caller which PCAL it had, and STEPB
           pays attention to it.

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PROBLEM: The 'O' command wouldn't accept a carriage return as an affirmative response. PROFILE (formerly OVER) was checking the response character and length incorrectly.
SOLUTION: It now checks if the character is either "Y" or "y" or if the length is zero.

PROBLEM: Starting at last line of program (END statement), STEPB SSTEP calls CONT via MCONT, who says KNOWN is true. We actually want to call ATOL, to see if there is line number information. This affects PCALX/V's only.
SOLUTION: The software has been corrected.

PROBLEM: Error 21 on "D dataname/compo" occurred when in READINPUT. GETVAR, when testing for the item's accessibility, looked at MAINHIGH, which, for CDS programs, is zero.
SOLUTION: GETVAR now checks CDSON.

PROBLEM: 'S' after 'T' or conditional break gets garbage and 'B' repeats itself. A "Valid = .false." check had been accidentally deleted from BCHEK.
SOLUTION: The software has been corrected.

PROBLEM: '? H' gets non-specific response when in Overview mode.
SOLUTION: Error message file was corrected.

PROBLEM: An MP violation occurred single-stepping CDS program with one code block, three segments. NEWSG was peeking at 2000B, instead of 2001B. It also must call SETCDSSEGBREAK when in the current segment, so DEBUG is told when that segment is mapped back in and the breaks can be restored.
SOLUTION: The software has been corrected.

PROBLEM: Step In at call to Pascal RESET and DEBUG would get lost in the routine RESET in an unknown place in segment 2. The 'S I' command was entered at a call to RESET in segment 1. Since the call was a PCALX, debug had to step in, then look around. It could not get back. GFL, called from SSTEP_PCALA, returned a reasonable number, even though there was no line number info for Pas.ResetFile.
SOLUTION: The software has been corrected.

PROBLEM: Breakpoint set at first line of a Macro routine, NOT the entry point+1. Another fix broke this in GFL. GFL really does need to call ATOL.
SOLUTION: Fixed GFL.

PROBLEM: "H fmpaskddot" gets error 20, but doesn't identify the module. Error number passed to REPER was wrong.
SOLUTION: The software has been corrected.

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PROBLEM: The DEBUG 'W' command got error 56 when in the main but reported the location was all right. BILDS in BLDDB was setting the length wrong in the segment name table. The name was correct, however. BTRAC (called WCOMM), used this length. Pascal main names can be 16 characters long, but the segment name (faked out by BILDS) has a length of no more than 5.

SOLUTION: BTRAC now also compares the first 5 characters.

PROBLEM: All Heap 2 (Pascal) pointers are claimed to be nil, when they're not. GETVAR only tested the first of the 2-word pointers being zero.

SOLUTION: It now checks the entire 2-word quantity.

PROBLEM: Error 94 at startup: "Can't find main programs debug info." The main of Pascal program does not always "enclose" its level 1 routine; it is just another level 1 module. WHERE and WHERESLAVE fail to set up an entry in the LEVELS array for the main in this case. Now that Pascal sets LIBRARY and VISIBLE on, this is always the case.

SOLUTION: A new global, MAINLOCALVARHEAD, to save the pointer to the local variables tree for the main was created. It is sort of a zeroth entry in LEVELS.

PROBLEM: Errors 85 and 134 when attempting to single step ISHFT occurred. SSTEP called SETEMUP and KNOCKEMDOWN passing the globals CURADD, POSMR, and SEGNUM (which are in common). These 2 routines expect 3 ARRAYS of addresses, MRs, and segment numbers. The second routine zeroes out the first array. Consequently, POSADD, a very important state variable is lost.

SOLUTION: Replaced those 2 calls with calls to SETB and CLEAR.

PROBLEM: Had to do two GOTO commands to a Pascal label to finally get there because DLINE was changing the line number to be displayed.

SOLUTION: DLINE has been fixed.

PROBLEM: Debug should have a new time stamp for each change made to the code. This value will be displayed upon start-up.

SOLUTION: A new source, DBREV, holds the time stamp.

PROBLEM: Target program loops on "P 1014/readinput" command. SETCDSSEGBREAK was copying the PA bit to the AB bit. This would cause a segment load each time.

SOLUTION: The software has been corrected.

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PROBLEM: An error message prevented completion of 'W' command
            output because REPER would overwrite the display buffer.
SOLUTION: REPER and PREPER now both share their own message buffer
            and other code.   PDUMP now shows what had been gotten so
            far, then calls PREPER.

PROBLEM: BLDDB created extents on the type 1 file if the type 3
            file was crushed (i.e. extents eliminated and empty space
            at the end of the file truncated). The initial open of
            the type 1 file by BUIL1 calculated its size based on the
            size of the type 3 file size.
SOLUTION: The formula has been changed to call truncate at the end.

PROBLEM: Cannot display or modify globals when not in the main.
            The LEVELS array had no entry for the main, when the main
            was just another level 1 routine, as is the case for
            libraries. This would cause GETVL to fail to find the
            module for the global.
SOLUTION: New global common: MainLocalVarHead points to the local
            variable head of the main's local variables, which are the
            globals in the program.

PROBLEM: ENTs and EATs (entry tables and entry address tables) have
            duplicate entries for module HTEST in the symbol table If
            a module has no XENT record, then BILDS will dummy one up
            via MakeSureEnt.   This routine used MESSAGEHENT instead of
            HENT for the head pointer to the ent nodes.   Also,
            ProcedureExit was being called before MakeSureEnt.
SOLUTION: BILDS now calls ProcedureExit first, and MakeSureEnt now
            uses HENT.

PROBLEM: Display of packed array of char (PAC) always shows full
            array. DOSUBSCRIPT was not checking if a subscript had
            been given.
SOLUTION: The software has been corrected.

PROBLEM: Can step into a routine that has no debug information.
SOLUTION: Now the user will get a message, and be prevented from
            stepping into the routine.

PROBLEM: No histogram was generated for routines with less than 3%
            of total time. UserAddr in PlotLocation is the address of
            the first line, which, for Pascal, should be the low
            address, not the entry point address.
SOLUTION: If UserAddr < low, then low = useraddr.

PROBLEM: DEBUG would loop when trying to display an array of
            enumeration.
SOLUTION: BILDS now calls Fix_Array for arrays of enumerations and

other complicated types.

PROBLEM: DEBUG reported an address out of range on heap 1 Pascal
            string because LSIZE in DoSubscript was wrong.
SOLUTION: The software has been changed so that LSIZE is really the
            element size.

PROBLEM: 'M' command with no second argument assumed zero for the
            second argument, which is unfriendly.
SOLUTION: MODIF will now say the second argument is a bad value, and
            not modify anything.

PROBLEM: Wrong error message and missed error displaying due to
            multi-dimensioned array off-by-one problems in AREF.
SOLUTION: The software has been corrected.

PROBLEM: DoSubscript couldn't handle anything smaller than a word.
SOLUTION: DoSubscript and WrVal, both use WhichByte and WhichBit now
            have been enhanced.

PROBLEM: CS06 violation after 52 'S' commands in multi-segmented
            CDS program occurred. There was a CLEAR_LATER break at
            "4", an entry number. When NEWSG wanted to clear it, it
            had not been converted to its corresponding entry
            address. So a break was "cleared" in the base page or
            segment transfer table.
SOLUTION: Temporary breaks for PCLAX/V's that never get set remain
            as entry numbers. Check if it is still such an entry
            number in CLEARB, and, if so, don't poke, just delete it
            from the tables.

PROBLEM: BASIC emited no information relating to arrays, due to the
            fact that they use dope vectors to access the array.
            Since it was not planned that Debug ever know about dope
            vectors, all that is emitted by BASIC is the starting
            address. This means that arrays whose element size is 1
            word, and which are based on 1, not 0, can be displayed.
SOLUTION: The software has been corrected.

PROBLEM: Histogram of unexported, level-2 routine in Pascal MODULE
            failed.
SOLUTION: The software has been corrected.

PROBLEM: Discontinuous extents were created in the debug file by
            BLDDB. The formula used to figure a size for the type 1
            debug file was based on the size of the type 3 version of
            that file. This formula was not good enough.
SOLUTION: Formula is now (1.5 * type_3_size) + 32. 32 blocks are
            for the private swapping file, which contains the command
            stack and breakpoint tables.

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PROBLEM: BLDDB no longer echoed segment and nested routine names. TRMLU was redeclared as an integer*4 and BILDS was using a simple EXT which would get only the first word, which was zero.

SOLUTION: Fixed the declaration in BLOCK.

PROBLEM: The user program ran to completion when single-stepping contents of the THEN clause. There were over 500 current-page links dropped by LINK in this CDS routine just after the code for the line in question. STEPB and SSTEP failed in lines like this.

SOLUTION: SSTEP now reports that it cannot single step such lines.

PROBLEM: Unable to access hidden, static, variables declared in a Pascal MODULE. GetField, called by everyone, would check if the address of a symbol was an EMA address by checking if that address was less than zero. If it was, then it bumped the offset into that node by one. The nodes for the hidden space of a Pascal MODULE got an address of -32768. Thus GetField would return the wrong field.

SOLUTION: GetField now checks the MR, which will be 5 for an EMA address.

PROBLEM: 'W' should give the names of undebuggable modules, not just an address.

SOLUTION: DSPOT now gives the names.

PROBLEM: Message 70 should use the word "update", not "access". Debug did call FMPUPDATETIME as it should.

SOLUTION: The error message has been fixed.

PROBLEM: The breakpoint location given was wrong, i.e., "0/??" made no sense. DSPOT was testing STPTR at the wrong time.

SOLUTION: The software has been corrected.

PROBLEM: Single-stepping over a line with a tracepoint did not perform the trace. SSTEP in segment 1 called MCONT with an expression as the parameter whose value resided at 62575B. This temporary got clobbered when BCHEK (called from CONT) loads segment 2 to call DISP on the trace variable VALG as requested by the user.

SOLUTION: CONT now saves that parameter (BeNoisy) in a local (dummy) and restores it after the call BCHEK after the second call to USER_RAN near line 297.

PROBLEM: SSTEP is too large as a single routine. Using common would reduce use of parameters. .justify

SOLUTION: The software has been modified.

PROBLEM: Several routines duplicated code.
SOLUTION: Calls are now shared to Add_Place.

PROBLEM: The CRAM routine was duplicated in both sources DEBU2 and
            DEBU5.
SOLUTION: The CRAM routine now resides in its own source file.

PROBLEM: Add_Place was setting duplicate breakpoints when
            single-stepping the jump of some Pascal CASE statements.
SOLUTION: It no longer duplicates them, but one can still exceed the
            limit of 20 places.

PROBLEM: The global fmpCmodf was not being used by DEBUG or BLDDB.
            It was 32 words of data that never got used.
SOLUTION: The global has been removed.

PROBLEM: The default response to request to purge old overview data
            file was wrong. Several GOTOs were incorrectly arranged
            in OVER, near labels 10 and 15.
SOLUTION: Rearranged code to be correct.

PROBLEM: The common block SAMPLE was globally shared between DEBU4
            and HISTOGRAM. This took up 128 words in the main.
SOLUTION: Have those 2 segments use the breakpoint tables for this
            data.

PROBLEM: Can't use breakmode when Debug is processing an include
            file because GetCM in DEBU1 never called IFBRK, it just
            read the next line.
SOLUTION: GetCM now calls IFBRK when it tests the length of the line
            just read.

PROBLEM: PrepUser in both PREPL and PREP6 called the same routine
            (SETRMPARMS). Need to avoid duplicate code.
SOLUTION: PREPUSER now has its own source.

PROBLEM: Histogram reports 0% for both "System Noise" and "Other
            (known code)".   Plot1 in HISTOGRAM would calculate this
            percentage, and call PrintLine, which never tested its
            input parameters.
SOLUTION: PrintLine now returns if NSTARS is zero and isn't
            reported.

PROBLEM: RMPAR parameter passing worked only if the first parameter
            was a power of 2.   Set_Rmparms was testing Pbuf (1)
            instead of Pbuf (3).
SOLUTION: The software has been corrected.

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PROBLEM: MODIF in DEBU5 calls PREPER when the variable on the right side was invalid. It was using SCOL as the column to point at. This caused the "^" on error messages to point at the wrong place.

SOLUTION: Use SSCOL instead of SCOL.

PROBLEM: Common blocks BREAK, SEGS, EDCB, TRMLU, TTAB, WSIZE, and DBINST are not used. BTEXT is never called; FMPNAMR, declared in the main, is called only from segment zero; OUTRC gets its own source, as it's used only in segment two. Use a new source to contain only the DATA declaration for the current version of BLDDB, just like DBREV for Debug.

SOLUTION: Deleted the common blocks and BTEXT; FMPNAMR loaded only with segment zero; OUTRC loaded with segment two. This saved 944 words, allowing two more 512-word swapping chunks of free space, for a total of 42. The new source is source/bdrev.ftn.

PROBLEM: The debug info file can be full of unused space.

SOLUTION: Insure that there is none. Truncate the file, using the global RCNT to calculate the block count of real data in the file.

PROBLEM: The flag PLEVEL was not being passed to Debug from BLDDB.

SOLUTION: BLDDB now returns this value via the PRTN call in TERMINATE.

PROBLEM: BUILO was testing the wrong thing to determine if the target program resided on a FMGR cartridge or a new file system directory.

SOLUTION: It now uses a flag: IS_NEW_FILE.

PROBLEM: 'C *' left breaks in other CDS segments, causing MP violations. CCOMM simply looped across the BREAK tables, called POKE to clear the break from the user's code, and cleared out the BREAK tables. It was not calling CLEAR.

SOLUTION: CCOMM now calls the function CLEARED_ALL.

PROBLEM: NewSg, when clearing breaks listed in the Clear_Later breakpoint table, was not accounting for the fact that CLEARB packs that table. So, some breaks were not cleared, and the program would MP.

SOLUTION: This is in the last loop done by NewSg. Use the local TIMES to fix up I, which picks the correct index into the table.

PROBLEM: 'O file' gets prompt for verification, but ignored the
           file name given. Debug faked out a 'C *' command to clear
           all breaks before calling Profile by setting CLEN to 1,
           thus losing anything after the 'O' part of the command.
SOLUTION: Debug now saves and restores the real CLEN.

PROBLEM: Overview mode fails to clear breaks remaining in other CDS
           segments. Profile calls OVNewSeg, which didn't handle CDS
           segment switches. Only NewSg handles clearing breaks left
           in other CDS segments.
SOLUTION: OVNewSeg now calls NewSg.

PROBLEM: Debug should pass 256 characters of run string to the
           target program. The current limit was 80 characters,
           which was not enough when the user has the new file system
           (file names can be much longer than 40 characters), and
           was debugging the target program programmatically.
SOLUTION: It is now 256.

PROBLEM: 'W' gets octal address, not line number in small CDS
           routine. Fline, called by Dspot, loops 39 times, calling
           AtoL, trying to map an address to a line number. It tries
           address-1, then address-2, to address-39. The line ahead
           of the current line at the time the W command was given
           had 43 instructions in it, so 39 was not enough.
SOLUTION: Fline now loops 100 times.

PROBLEM: CONT always returned .true. when it had switched in a
           module in another segment that had no debug info.
SOLUTION: It now returns .false. for such modules.

PROBLEM: When in overview mode, the '?' command said both "Help"
           and "Histogram" were valid. The error message file didn't
           say to use '?' to ask for help while in the overview mode.
SOLUTION: The software has been corrected.

PROBLEM: The '?' within overview mode incorrectly stated that the
           FIND command was valid.
SOLUTION: The help file has been corrected in A.84.

PROBLEM: Sstep_Pascal_CASE increments subscr by 2, to skip a
           possible data word following the JMP 0,I instruction.
           This headed up the jump table emitted by the Pascal
           compiler which caused DEBUG to "get lost" if the first
           case label was taken.
SOLUTION: It now increments subscr by 1.

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PROBLEM: Debug passes an extra runstring character to the target
           program. When DEBUG was enhanced to pass 256 characters,
           The call to BFILL in Do_Run_String still passed only 80,
           not 256.
SOLUTION: The software has been corrected.

PROBLEM: DEBUG purged the overview data file even when the user
           said not to. Cleanup_Overview was checking things wrong.
SOLUTION: The software has been corrected.

PROBLEM: Attempted to allow breaks to remain when one sets a
           tracepoint at the same location as the break, but, this
           broke several other things. SetEmUp passed .false. for
           DontShoot.
SOLUTION: SetEmUp now passes .true.

2.10.3   Notes

None.

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+--------------------------------------------------+------------------+
|                                                  |                  |
|    CURRENT SOFTWARE REVISIONS & CHANGES          |    CHAPTER  3    |
|                                                  |                  |
+--------------------------------------------------+------------------+
```

This chapter lists the current revision codes for each software product, and notes any changes that have occurred to the product in this update cycle.

Those products that have been changed in this update cycle are marked with a '+' to the left of the product number. If a product has been updated, the listing will also include:

a) Manuals and,

b) Software (and firmware) media

that have been updated (or added) in this update cycle, and are being distributed with the subscription services for this product.

If software has been updated for the product, then those modules that have been changed/added/deleted are marked with a '*' to the left of the file name, and the type of update is shown to the right of the current revision code: updated files show the new revision code; added or deleted files are marked as 'New' or 'Deleted' (respectively).

There have been some changes to the format of this chapter because of the new hierarchical file system on RTE-A and RTE-6/VM. At this update, some products will be shipped in TF format. The files will be in a hierarchical structure with global and subdirectories. Also, individual file names can be up to twenty-one characters long (including the dot). To accomdate this, two changes have been made.

- The file name field was expanded from six characters to twenty-one. To accomodate this, the module field was eliminated.

- For products that are shipped in the hierarchical file format, path names are given on a separate line to help identify where specific parts can be found.

For specific information on updating systems in the new hierarchical
file format, please refer to chapter 5.

Note that updated products may have only manual changes or only
software changes. This is noted in the manual or media lists.

3.1   (12824A)   Vector Instruction Set

Filename	Part Number	Rev
$VLIB1	12824-12001	2026
$VLIB2	12824-12002	2026
%VISOD	12824-16002	2026

3.2   (12829A)   VIS for RTE-6

Filename	Part Number	Rev
$VLB6A	12829-12001	2226
$VLB6B	12829-12002	2213
%VIS06	12829-16001	2226

3.3   (24396A-F)   Offline Diagnostics (M, E, F-Series)

Filename	Part Number	Rev
!IODG	24318-16001	2326

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3.4 + (24398A/B)   Offline Peripheral Diagnostics (L, A-Series)

	Filename	Part Number	Rev	Change
*	!DIAG	24398-16020	New	--> 2401
*	!DISFO	24398-16024	New	--> 2401
*	!ERT	24398-16022	New	--> 2401
*	!EXR1	24398-16025	New	--> 2340
*	!MEXPL	24398-16055	New	--> 2401
*	!MTEXR	24398-16054	New	--> 2401
*	!MTVER	24398-16018	New	--> 2340
*	!OPER	24398-16031	New	--> 2340
*	!SYSTM	24398-16053	New	--> 2401
*	!TAPE	24398-16029	New	--> 2340
*	!TESTM	24398-16052	New	--> 2340
*	%OPER	24398-16016	2226	--> Deleted
*	A24398	24398-17999	2301	--> Deleted
*	B24398	24398-17998	New	--> 2401
*	B24398	24398-17998	New	--> REV.
*	BOOTEX	92077-16364	New	--> 2401
*	DIAG	24398-16003	2113	--> Deleted
*	DISCZ	24398-16007	2113	--> Deleted
*	ERT	24398-16005	2113	--> Deleted
*	EXR1	24398-16010	2226	--> Deleted
*	EXR1	24398-16026	New	--> 2340
*	EXR1M	24398-16036	New	--> 2340
*	MACICD	24398-16056	New	--> 2401
*	MACICM	24398-16057	New	--> 2401
*	MTEXR	24398-16058	New	--> 2401
*	MTEXRM	24398-16059	New	--> 2401
*	MTVER	24398-16001	2150	--> Deleted
*	MTVER	24398-16017	New	--> 2340
*	MTVERM	24398-16039	New	--> 2340
*	OPER	24398-16016	2226	--> Deleted
*	OPER	24398-16032	New	--> 2340
*	OPERM	24398-16038	New	--> 2340
*	TAPE	24398-16014	2301	--> Deleted
*	TAPE	24398-16030	New	--> 2340
*	TAPEM	24398-16037	New	--> 2340
*	TESTM	24398-16033	New	--> 2340
*	TESTM	24398-16034	2301	--> Deleted
*	TESTMM	24398-16043	New	--> 2340

```
Manual Part#          Title                         Type of Update
------------+------------------------------------------+--------------
 5955-4355   ICD/MAC disc diag                        Edition 3
24398-90007  Antelope exerciser                       Edition 1


Media  Part#     Media Option
------------+---------------
    (no media changes)
```

3.5   (24600A)   L, A-Series I/F Diagnostics

```
   Filename              Part Number   Rev
   -------------------   -----------   ----
   !PSI                  24600-16001   2026
   A24600                24600-18999
   BOOTEX                24998-16013   2041
   PSI                   24600-16002   2026
```

3.6   + (24612A)   Offline Diagnostics (A-Series)

```
     Filename             Part Number   Rev    Change
     -------------------   -----------   ----   --------
     !AIMXD                24613-16001   2301
     !AOUTD                24613-16002   2301
     !ASIC                 24612-16035   2301
     !BCM                  24612-16042   2326
     !BCMCT                24612-16043   2326
     !CDSBI                24612-16048   2326
     !CDSPC                24612-16050   2326
     !CPU                  24612-16015   2301
     !CSIC                 24612-16051   2326
     !CTDVR                24612-16002   2301
 *   !DCDVR                24612-16004   2326   --> 2401
 *   !DID                  24612-16052   2327   --> 2401
     !DIDVR                24612-16056   2327
     !DIGIO                24613-16003   2301
     !DSDVR                24612-16006   2326
     !EIG                  24612-16027   2301
     !FDL                  24612-16041   2213
     !FPD                  24612-16025   2301
     !HPIB                 24612-16036   2340
```

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```
   !IOM                24612-16019    2326
   !LIS                24612-16029    2326
*  !MAD                24612-16021    2340    --> 2401
   !MCD                24612-16023    2340
   !MCDXL              24612-16046    2326
*  !MTDVR              24612-16054    2330    --> 2401
   !MUX                24612-16040    2301
   !PIC                24612-16037    2326
   !PROM               24612-16038    2301
   !PSI                24612-16039    2213
   !RMDVR              24612-16008    2301
   !SFD                24612-16017    2301
   !SIS                24612-16031    2301
   !WCS                24612-16032    2213
   #AUTO               24612-18013    2326
   %CDSBI              24612-16047    2340
   %CDSPC              24612-16049    2326
   %CPU                24612-16014    2301
   %CTDVR              24612-16001    2301
*  %DCDVR              24612-16003    2326    --> 2401
   %DDL                24612-16010    2340
   %DEBUG              24612-16011    2301
   %DIDVR              24612-16055    2327
   %DSDVR              24612-16005    2326
   %EIG                24612-16026    2301
   %FPD                24612-16024    2326
   %IOM                24612-16018    2326
   %LIS                24612-16028    2326
   %LPDVR              24612-16012    2213
   %MAD                24612-16020    2340
   %MADMG              24612-16045    2301
   %MAPS               24612-16009    2301
   %MCD                24612-16022    2340
   %MSGS               24612-16033    2301
*  %MTDVR              24612-16053    2330    --> 2401
*  %PFCON              24612-16034    2213    --> 2401
   %RMDVR              24612-16007    2301
*  %SFD                24612-16016    2326    --> 2401
   %SIS                24612-16030    2326
*  A24612              24612-17999    2340    --> 2401
*  BCMDC               24612-16044    2326    --> 2401
   BCMDI               24612-16057    2327
*  BCMMT               24612-16058    2340    --> 2401
```

```
Manual Part#         Title                                Type of Update
------------+-------------------------------------+--------------
24612-90004  A-Series Interface Diagnostic Reference   Update 3
```

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```
Media  Part#      Media Option
-------------+---------------
24612-13312        020
24612-13313        020
24612-13316        020
24612-13317        020
24612-13319        021
24612-13320        021
24612-13323        021
24612-13324        021
24612-13311        022
24612-13401        041
24612-13406        042
24612-13407        042
24612-13408        042
24612-13409        044
24612-13410        044
24612-13411        044
24612-13412        044
24612-13501        051
```

3.7   (24613A)   Measurement & Control Diagnostics (A-Series)

```
Filename            Part Number  Rev
-------------------- ----------- ----
     (see 24612A Offline Diagnostics A-Series)
```

3.8   (91711B)   On-Line Diagnostics (M, E, F-Series)

```
Filename            Part Number  Rev
-------------------- ----------- ----
!CS801              91711-16351  2226
!ICD01              91711-16350  2201
!MUXST              12792-16007  2301
#TESTM              91711-17025  2301
#TXDS0              91711-17007  2201
#TXIB0              91711-17008  2201
#TXMT0              91711-17009  2201
#TXMV0              91711-17006  2201
#TXMV1              91711-17016  2201
#TXPF0              91711-17005  2201
#TXPF1              91711-17017  2201
```

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#TXPF2	91711-17018	2201
#TXPF3	91711-17019	2201
#TXPF4	91711-17020	2201
#TXPM0	91711-17001	2201
#TXPM1	91711-17002	2201
#TXPM2	91711-17003	2201
#TXPM3	91711-17004	2201
#TXTD0	91711-17014	2201
#TXTD1	91711-17015	2201
#TXTR0	91711-17013	2201
#TXTT0	91711-17011	2201
#TXTT1	91711-17012	2201
#TXWL0	91711-17010	2201
#VISO6	91711-17022	2201
#VMACK	91711-17021	2201
$XXTD1	91711-12031	2201
%CFTML	91711-16252	2201
%DISVF	91711-16238	2201
%EXR1	91711-16285	2226
%FFPVF	91711-16234	2201
%HFPVF	91711-16235	2201
%IMPTM	91711-16254	2201
%IWRZZ	91711-16253	2201
%JENTS	91711-16370	2301
%MORFE	91711-16233	2201
%MUXST	12792-16006	2301
%NPART	91711-16228	2226
%RODFK	91711-16226	2201
%RODSK	91711-16256	2201
%RODTK	91711-16257	2201
%RPTBL	91711-16232	2201
%SISVF	91711-16236	2201
%TAPE	91711-16287	2301
%TESTM	91711-16369	2301
%TXDS0	91711-16241	2201
%TXIB0	91711-16242	2201
%TXMT0	91711-16243	2201
%TXMV0	91711-16240	2226
%TXMV1	91711-16266	2201
%TXPF0	91711-16231	2201
%TXPF1	91711-16258	2201
%TXPF2	91711-16259	2201
%TXPF3	91711-16260	2201
%TXPF4	91711-16261	2201
%TXPM0	91711-16225	2201
%TXPM1	91711-16227	2226
%TXPM2	91711-16229	2201
%TXPM3	91711-16230	2201
%TXTD0	91711-16248	2201
%TXTD1	91711-16249	2201

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```
%TXTD2              91711-16250  2201
%TXTD3              91711-16251  2201
%TXTR0              91711-16247  2201
%TXTT0              91711-16245  2201
%TXTT1              91711-16246  2201
%TXWL0              91711-16263  2201
%VISO6              12829-16006  2201
%VISVF              91711-16239  2201
%VMACK              92084-16423  2201
%VMAVF              91711-16237  2201
DIAG                91711-16327  2201
DISCZ               91711-16329  2201
ERT                 91711-16328  2201
EXR1                91711-16330  2226
FORM                91711-16326  2201
TAPE                91711-16332  2301
```

3.9   (91730A)   Multipoint

Filename	Part Number	Rev
%AUTO7	91730-16009	2140
%DLFT	91730-16011	2140
%DSPMP	91730-16003	2140
%DVR07	91730-16001	2140
%EXMP	91730-16002	2140
%MPLIB	91730-12001	2140

3.10   (91731A)   Multiplexer

Filename	Part Number	Rev
%DVSON	91731-16001	1926
%DVSOZ	91731-16004	1926
%LD5AN	91731-16002	1926
%LD5AZ	91731-16003	1926
%LD5BN	91731-16005	1926
%LD5BZ	91731-16006	1926

3.11   (91740A/B)   DS/1000

Filename	Part Number	Rev
!665AD	29005-60001	1636
!773AD	29024-60001	1636
$DSDB	92069-12007	2040
%2APLD	91740-16017	1840
%3APLD	91740-16018	1840
%DLIS1	91740-16009	2001
%DLIS2	91740-16010	2001
%DLIS3	91740-16011	1740
%DSLB1	91740-12001	2326
%DSLB2	91740-12002	2001
%DSLB3	91740-12003	1740
%DSML1	91740-12004	1913
%DSML2	91740-12005	1913
%DVA65	91740-16071	2026
%EDITD	91740-16022	2026
%EXECM	91740-16005	1840
%EXECW	91740-16008	1740
%GRPM	91740-16014	2001
%LGLIB	91740-12007	1926
%LOADD	91740-16019	1913
%LSTEN	91740-16001	1913
%LSTNS	91740-16072	1913
%NDTGN	91740-16021	1805
%OPERM	91740-16006	2026
%PROGL	91740-16012	1913
%PTOPM	91740-16007	1913
%QCLM	91740-16016	2001
%QUEUE	91740-16013	2026
%RD.TB	92069-16257	2040
%RDBAM	92069-16258	1912
%RDBAP	92069-16259	1912
%REDIT	91740-16023	1740
%REMAT	91740-16024	2026
%RFAM1	91740-16003	1740
%RFAM2	91740-16004	2213
%RMTIO	91740-16037	1913
%RTMLG	91740-12006	2013
%RTRY	91740-16015	2026
%SGPRP	91740-16070	1805
%UPLIN	91740-16002	1840

3.12   (91741A)   DS/1000-3000

Filename	Part Number	Rev
%D3KL2	91741-12002	1913
%D3KLB	91741-12001	2026
%DVG67	91741-16001	2126
%QUEX	91741-16003	2013
%QUEZ	91741-16002	1740
%RMOTE	91741-16007	2013
%RPCNV	91741-16005	2026
%RQCNV	91741-16004	1913

3.13   (91745A)   Datasafe/1000

Filename	Part Number	Rev
#RPAIR	91745-17002	2218
#VPAIR	91745-17003	2218
$RECAP	91745-12001	2218
%..DS	91745-16007	2218
%ALARM	91745-16005	2218
%ALRMX	91745-16020	2218
%CNREQ	91745-16006	2218
%DPAIR	91745-16002	2218
%DSCPR	91745-16022	2218
%DVI30	91745-16001	2218
%LPAIR	91745-16004	2218
%RPAIR	91745-16003	2218
%VPAIR	91745-16019	2218
&ALRMX	91745-18020	2218
A91745	91745-17999	2301

3.14   (91747A)   Datashare/1000

Filename	Part Number	Rev
#DCONV	91747-17001	2218
$DSHAR	91747-12004	2326
%BMPG1	91747-12001	2218

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```
        %BMPG2                    91747-12002  2301
        %BMPG3                    91747-12003  2326
        %DCONV                    91747-16001  2218
        %DMALL                    91747-16002  2218
        A91747                    91747-17999  2326
```

3.15   + (91750A)   DS/1000-IV

	Filename	Part Number	Rev	Change
	!COPY3	91750-16213	2340	
	#DSLIN	91750-17001	2301	
*	#RMOT1	91750-17003	2340	--> 2401
*	#RMOTE	91750-17002	2340	--> 2401
	$D3KBB	91750-12019	2201	
	$D3KL2	91750-12016	2201	
*	$D3KLB	91750-12017	2340	--> 2401
	$D3KMB	91750-12021	2201	
	$D3KRB	91750-12018	2201	
*	$D3N25	91750-12029	New	--> 2401
*	$D3X25	91750-12028	New	--> 2401
*	$DSAL	91750-12027	2340	--> 2401
*	$DSLB1	91750-12001	2326	--> 2401
*	$DSLB2	91750-12002	2326	--> 2401
*	$DSLB3	91750-12003	2340	--> 2401
	$DSLCL	91750-12007	2326	
*	$DSLSM	91750-12015	2340	--> 2401
	$DSLXL	91750-12022	2340	
	$DSMA	91750-12008	2340	
	$DSML1	91750-12004	2340	
	$DSML2	91750-12005	2113	
	$DSMX4	91750-12025	2340	
	$DSMX6	91750-12023	2340	
	$DSNMA	91750-12010	2013	
	$DSNRR	91750-12011	2013	
	$DSNSM	91750-12012	2340	
	$DSRR	91750-12013	2226	
*	$DSSM	91750-12014	2341	--> 2401
	%#SEND	91750-16208	2140	
	%#SPLU	91750-16221	2013	
	%$MWB	91750-16233	2113	
	%3APLD	91750-16042	2301	
	%ADV00	91750-16286	2326	
	%APLDL	91750-16040	2113	
	%APLDX	91750-16223	2013	
	%CNSLM	91750-16048	2340	
	%COMND	91750-16049	2013	

*	%CSV66	91750-16268	2326	--> 2401
*	%CXL66	91750-16269	2326	--> 2401
*	%D$N25	91750-16266	2201	--> Deleted
*	%D$X25	91750-16262	2201	--> Deleted
*	%DDA66	91750-16107	2340	--> Deleted
*	%DDA66	91750-16292	New	--> 2340
*	%DINIS	91750-16069	2340	--> 2401
*	%DINIT	91750-16068	2340	--> 2401
	%DLIS1	91750-16072	2326	
	%DLIS2	91750-16073	2326	
*	%DSIN2	91750-16078	2326	--> 2401
*	%DSINF	91750-16077	2326	--> 2401
*	%DSINL	91750-16079	2326	--> 2401
	%DSLIM	91750-16265	2301	
*	%DSLIN	91750-16263	2326	--> Deleted
*	%DSMOD	91750-16092	2326	--> 2401
	%DSTES	91750-16100	2013	
	%DSVCP	91750-16102	2301	
	%DVA65	91750-16105	2301	
	%DVA66	91750-16107	2326	
*	%DVB65	91750-16300	New	--> 2401
	%DVG67	91750-16108	2201	
	%DVS64	91750-16241	2140	
	%EDI6D	91750-16240	2140	
*	%EDITD	91740-16022	2140	--> Deleted
*	%EXECM	91750-16111	2301	--> 2401
	%EXECW	91750-16112	2226	
	%FCL7	91750-16243	2140	
	%GRPM	91750-16124	2326	
	%ID.66	91750-16126	2340	
	%IDS64	91750-16242	2326	
	%INCNV	91750-16129	2340	
	%IOMAP	91750-16130	2340	
	%LGLIB	91740-12007	1926	
	%LOG3K	91750-16132	2113	
	%LUMAP	91750-16133	2326	
	%LUQUE	91750-16134	2201	
	%MATIC	91750-16136	2301	
	%MDFCL	91750-16293	2340	
	%MDV00	91750-16109	2201	
	%MSPLU	91750-16222	2013	
	%MVCP3	91750-16212	2013	
	%OPERL	91750-16142	2340	
	%OPERM	91750-16143	2140	
	%OTCNV	91750-16144	2226	
	%PLOG	91750-16147	2340	
	%PROGL	91750-16150	2340	
	%PROGZ	91750-16226	2340	
	%PTOPM	91750-16151	2340	
*	%QCLM	91750-16152	2326	--> 2401

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*	%QUEUE	91750-16153	2201	--> 2401
	%QUEX	91750-16154	2340	
*	%QUEX1	91750-16155	2326	--> 2401
	%QUEZ	91750-16156	2201	
*	%QUEZ1	91750-16157	2326	--> 2401
*	%REDIT	91740-16023	1740	--> Deleted
*	%REMAN	91750-16159	2340	--> 2401
*	%REMAZ	91750-16160	2340	--> 2401
	%RESA	91750-16283	2326	
	%RESL	91750-16161	2326	
	%RESM	91750-16162	2326	
	%RESSM	91750-16163	2326	
	%RESXL	91750-16228	2326	
	%RFAM1	91750-16164	2340	
	%RFAM2	91750-16165	2340	
*	%RMOT1	91750-16168	2340	--> 2401
*	%RMOTE	91750-16167	2340	--> 2401
	%RMTIO	91750-16169	2013	
	%RPCNV	91750-16170	2326	
	%RPRTL	91750-16224	2013	
*	%RQCNV	91750-16171	2340	--> 2401
*	%RSM	91750-16172	2340	--> 2401
	%RTMLG	91740-12006	2013	
	%RTRY	91750-16173	2301	
*	%SGPRP	91740-16070	1805	--> Deleted
	%SGXL	91750-16234	2201	
	%SLCIN	91750-16176	2113	
	%SYSAT	91750-16202	2140	
	%TLOG	91750-16177	2326	
	%TRC3K	91750-16178	2301	
*	%UPLIN	91750-16179	2326	--> 2401
	%VCPMN	91750-16180	2226	
	%WHZ6D	91750-16527	2340	
	%WHZDS	91750-16217	2013	
	%XDV00	91750-16181	2140	
*	&DSLIN	91750-16263	New	--> 2326
*	*A91750	91750-18999	New	--> REV.
*	A91750	91750-18999	2340	--> 2401
*	EDITD	91740-16022	New	--> 2140
*	REDIT	91740-16023	New	--> 1740
*	SGPRP	91740-16070	New	--> 1805

Manual Part#	Title	Type of Update
91750-90002	DS/1000-IV User's Manual	Update 8
91750-90005	DS/1000-IV Quick Reference Guide	Update 7
91750-90010	DS/1000-IV Network Manager`s Manual Vol. 1	Update 5
91750-90011	DS/1000-IV Network Manager`s	Update 4

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```
Media  Part#      Media Option
-------------+----------------
91750-13301        020
91750-13302        020
91750-13303        020
91750-13304        020
91750-13305        020
91750-13306        020
91750-13307        020
91750-13308        020
91750-13311        020
91750-13312        020
91750-13310        022
91750-13401        041
91750-13402        041
91750-13403        042
91750-13404        042
91750-13405        042
91750-13406        042
91750-13407        044
91750-13408        044
91750-13409        044
91750-13410        044
91750-13501        050
91750-13502        051
```

3.16   + (91751A)   DSN/X.25 1000

```
  Filename           Part Number  Rev    Change
--------------------- -----------  ----   --------
* #LDXFA             91751-18627   New   --> 2401
* #LDXGA             91751-18707   New   --> 2401
* #LDXIA             91751-18550   New   --> 2401
* #LDXLA             91751-18687   New   --> 2401
* #LDXMA             91751-18567   New   --> 2401
* #LDXNA             91751-18527   New   --> 2401
* #LDXPA             91751-18587   New   --> 2401
* #LDXRA             91751-18647   New   --> 2401
* #LDXTA             91751-18607   New   --> 2401
* #LDXWA             91751-18667   New   --> 2401
* #LGNA1             91751-18705   2226  --> Deleted
* #LGNEF             91751-18701   2201  --> 2401
* #LGNXL             91751-18703   2326  --> Deleted
* #LLAA1             91751-18685   2226  --> Deleted
```

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*	#LLAEF	91751-18681	2201	--> 2401
*	#LLAXL	91751-18683	2326	--> Deleted
*	#LXFA1	91751-18625	2226	--> Deleted
*	#LXFEF	91751-18621	2201	--> 2401
*	#LXFXL	91751-18623	2326	--> Deleted
*	#LXIA1	91751-18548	2226	--> Deleted
*	#LXIEF	91751-18541	2201	--> 2401
*	#LXIXL	91751-18546	2326	--> Deleted
*	#LXMA1	91751-18565	2226	--> Deleted
*	#LXMEF	91751-18561	2201	--> 2401
*	#LXMXL	91751-18563	2326	--> Deleted
*	#LXNA1	91751-18525	2226	--> Deleted
*	#LXNEF	91751-18521	2201	--> 2401
*	#LXNXL	91751-18523	2326	--> Deleted
*	#LXPA1	91751-18585	2226	--> Deleted
*	#LXPEF	91751-18581	2201	--> 2401
*	#LXPXL	91751-18583	2326	--> Deleted
*	#LXRA1	91751-18645	2226	--> Deleted
*	#LXREF	91751-18641	2201	--> 2401
*	#LXRXL	91751-18643	2326	--> Deleted
*	#LXTA1	91751-18605	2226	--> Deleted
*	#LXTEF	91751-18601	2201	--> 2401
*	#LXTXL	91751-18603	2326	--> Deleted
*	#LXWA1	91751-18665	2226	--> Deleted
*	#LXWEF	91751-18661	2201	--> 2401
*	#LXWXL	91751-18663	2326	--> Deleted
*	$X25DS	91751-12002	New	--> 2401
*	$X25LB	91751-12001	2326	--> 2401
*	%#X25A	91751-16014	New	--> 2401
*	%#X25T	91751-16003	2201	--> 2401
*	%#XCOM	91751-16007	2201	--> 2401
*	%$CSTB	91751-16006	2201	--> 2401
*	%DD.60	91751-16005	2326	--> 2401
*	%DDX00	91751-16004	2326	--> 2401
*	%DDX60	91751-16002	2201	--> 2401
*	%DVX00	91751-16001	2301	--> 2401
*	%GENPK	91751-16200	2226	--> 2401
*	%LAPBV	91751-16180	2226	--> 2401
*	%XFOEF	91751-16010	2201	--> 2401
*	%XFOXL	91751-16011	2326	--> Deleted
*	%XINEF	91751-16008	2226	--> 2401
*	%XINFA	91751-16122	New	--> 2401
*	%XINIT	91751-16040	2326	--> 2401
*	%XINXA	91751-16012	New	--> 2401
*	%XINXL	91751-16009	2326	--> Deleted
*	%XMOD	91751-16060	2326	--> 2401
*	%XNET	91751-16020	2326	--> 2401
*	%XNFEF	91751-16120	2226	--> 2401
*	%XNFOA	91751-16013	New	--> 2401
*	%XNFXL	91751-16121	2326	--> Deleted

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*	%XPLOG	91751-16080	2201	--> Deleted
*	%XPLOG	91751-16081	New	--> 2401
*	%XREAD	91751-16140	2226	--> 2401
*	%XTLOG	91751-16100	2226	--> 2401
*	%XWRIT	91751-16160	2226	--> 2401
*	&$CSTB	91751-18006	2201	--> 2401
*	&DLOEF	91751-18513	2201	--> 2401
*	&DLOOA	91751-18516	New	--> 2401
*	&DLOXL	91751-18514	2201	--> Deleted
*	&XLOEF	91751-18511	2201	--> 2401
*	&XLOOA	91751-18515	New	--> 2401
*	&XLOXL	91751-18512	2201	--> Deleted
*	*LDXFA	91751-18626	New	--> 2401
*	*LDXGA	91751-18706	New	--> 2401
*	*LDXIA	91751-18549	New	--> 2401
*	*LDXLA	91751-18686	New	--> 2401
*	*LDXMA	91751-18566	New	--> 2401
*	*LDXNA	91751-18526	New	--> 2401
*	*LDXPA	91751-18586	New	--> 2401
*	*LDXRA	91751-18646	New	--> 2401
*	*LDXTA	91751-18606	New	--> 2401
*	*LDXWA	91751-18666	New	--> 2401
*	*LGNEF	91751-18708	New	--> 2401
*	*LGNXL	91751-18702	2326	--> Deleted
*	*LLAEF	91751-18688	New	--> 2401
*	*LLAXL	91751-18682	2326	--> Deleted
*	*LXFEF	91751-18628	New	--> 2401
*	*LXFXL	91751-18622	2326	--> Deleted
*	*LXIEF	91751-18542	New	--> 2401
*	*LXIXL	91751-18545	2326	--> Deleted
*	*LXMEF	91751-18568	New	--> 2401
*	*LXMXL	91751-18562	2326	--> Deleted
*	*LXNEF	91751-18528	New	--> 2401
*	*LXNXL	91751-18522	2326	--> Deleted
*	*LXPEF	91751-18588	New	--> 2401
*	*LXPXL	91751-18582	2326	--> Deleted
*	*LXREF	91751-18648	New	--> 2401
*	*LXRXL	91751-18642	2326	--> Deleted
*	*LXTEF	91751-18608	New	--> 2401
*	*LXTXL	91751-18602	2326	--> Deleted
*	*LXWEF	91751-18668	New	--> 2401
*	*LXWXL	91751-18662	2326	--> Deleted
*	/LGNA1	91751-18704	2226	--> Deleted
*	/LGNEF	91751-18700	2201	--> Deleted
*	/LLAA1	91751-18684	2226	--> Deleted
*	/LLAEF	91751-18680	2201	--> Deleted
*	/LXFA1	91751-18624	2226	--> Deleted
*	/LXFEF	91751-18620	2201	--> Deleted
*	/LXIA1	91751-18547	2226	--> Deleted
*	/LXIEF	91751-18540	2201	--> Deleted

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```
*  /LXMA1                    91751-18564   2226   --> Deleted
*  /LXMEF                    91751-18560   2201   --> Deleted
*  /LXNA1                    91751-18524   2226   --> Deleted
*  /LXNEF                    91751-18520   2201   --> Deleted
*  /LXPA1                    91751-18584   2226   --> Deleted
*  /LXPEF                    91751-18580   2201   --> Deleted
*  /LXRA1                    91751-18644   2226   --> Deleted
*  /LXREF                    91751-18640   2201   --> Deleted
*  /LXTA1                    91751-18604   2226   --> Deleted
*  /LXTEF                    91751-18600   2201   --> Deleted
*  /LXWA1                    91751-18664   2226   --> Deleted
*  /LXWEF                    91751-18660   2201   --> Deleted
*  A91751                    91751-17999   New    --> 2401
*  A91751                    91751-18510   2326   --> Deleted
```

Manual Part#	Title	Type of Update
91751-90002	X.25/1000 Advance Guide	Edition 2
91751-90003	X.25/1000 Reference manual	Edition 2

Media Part#	Media Option
91751-13301	020
91751-13302	020
91751-13303	020
91751-13304	020
91751-13305	020
91751-13306	020
91751-13308	022
91751-13401	041
91751-13402	042
91751-13403	042
91751-13404	044
91751-13405	044
91751-13501	050
91751-13502	051

3.17   (91780A)   DSN/RJE 1000

Filename	Part Number	Rev
#TDP	91780-17002	2201
#TRCE	91780-17001	2201
%#BSC	91780-16013	2201
%#COMN	91780-16012	1840

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%#DIAL                    91780-16014   1840
%#TDMP                    91780-16017   1940
%#TRAC                    91780-16016   1940
%DVR50                    91780-16015   2201
%RJE                      91780-16011   2201
A91780                    91780-18999   2201
```

3.18   (91782A)   DSN/MRJE 1000

Filename	Part Number	Rev
!MLB00	91782-17002	
$MRJL6	91782-12002	2340
$MRJLA	91782-12003	2340
$MRJLB	91782-12001	2340
%$DVTB	91782-16052	d
%$DVTN	91782-16041	d
%DCCMD	91782-16003	2340
%DCTF1	91782-16004	2340
%DD.63	91782-16010	2340
%DDV63	91782-16009	
%DVN00	12792-16008	
%FMTRA	91782-16007	
%MLTAB	91782-16008	
%MLTRA	91782-16006	
%MRFIL	91782-16005	2340
%MRJE	91782-16001	2340
%POI	91782-16002	2340
*MRJE	91782-17001	
?MRJE	91782-17003	
A91782	91782-17999	2340

3.19   + (91823A)   Control/1000

	Filename	Part Number	Rev	Change
*	#BUIL6	91823-17006	New	--> 2320
*	#BUILA	91823-17002	New	--> 2320
*	#DEMON	91823-17001	New	--> 2320
*	#RMOT	91823-17005	New	--> 2320
*	$DEMLB	91823-12002	New	--> 2401
*	$MCLIB	91823-12001	New	--> 2401
*	%CKST	91823-16002	New	--> 2320
*	%DEMON	91823-16101	New	--> 2320

```
*  %ID.70              91823-16001  New   --> 2320
*  &CKST               91823-18002  New   --> 2320
*  &START              91823-18119  New   --> 2320
*  &UPDS               91823-18120  New   --> 2320
*  *BUIL6              91823-17009  New   --> 2320
*  *BUILA              91823-17004  New   --> 2320
*  *CKST               91823-17007  New   --> 2320
*  *GEN6               91823-17008  New   --> 2320
*  *GENA               91823-17003  New   --> 2320
*  A91823              91823-17999  New   --> 2401
```

Manual Part#	Title	Type of Update
91823-90001	Control/1000 Library Reference Manual	Update 1
91823-90003	Control/1000 Installation and Service manual	Update 1

Media Part#	Media Option
91823-13301	020
91823-13302	020
91823-13303	022
91823-13401	041
91823-13402	042
91823-13403	044
91823-13501	050
91823-13502	051

3.20   (92001B)   RTE-II

Filename	Part Number	Rev
!2GN00	92001-16013	1631
!2GN05	92001-16026	1631
!2GNFH	92001-16018	1631
!DSKUP	92060-16044	1805
!S4L07	02607-16004	1538
!S4L67	29100-60022	A
!S4LP	29100-60017	A
!S4MT1	12970-16004	1550
!S4MT2	29100-60023	A
!S4MT3	29100-60049	A
!S4PHR	29100-60019	A
!S4PUN	29100-60020	A
!S4SYD	29100-60018	A

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!S4TER	29100-60050	A
%$CMD2	92001-16029	1710
%0DV05	92001-16028	2140
%0FTN4	92060-16094	2026
%1DV10	72008-60001	A
%1DV37	59310-16002	2126
%1FTN	20875-60001	E
%1FTN4	92060-16095	2001
%2DP43	92001-16004	1926
%2DV10	72009-60001	A
%2DV37	59310-16003	2126
%2DV47	92900-16002	1913
%2FTN	20875-60002	E
%2FTN4	92060-16096	2026
%2SP01	92002-12002	2001
%3DV47	92900-16003	1913
%3FTN	20875-60003	E
%3FTN4	92060-16097	1913
%4DV05	92001-16027	2140
%4FTN	20875-60004	E
%4FTN4	92060-16098	2026
%5FTN	20875-60005	E
%5FTN4	92060-16101	1913
%ALGL1	24129-60002	C
%ALGOL	24129-60001	1643
%ASMB	92060-12004	1639
%AUTOR	92001-16014	1631
%BMLIB	92002-16006	2001
%BMPG1	92002-12001	2001
%CAL10	20808-60001	B
%CALIB	20810-60001	C
%CLIB	92060-12005	2140
%COPY	92060-16042	1704
%CR2SY	92001-16012	1926
%DBKLB	92060-16043	1901
%DECAR	24306-60001	2026
%DVA05	92001-16035	2140
%DVA12	92001-16020	1826
%DVA13	91200-16001	1648
%DVR00	29029-60001	2301
%DVR11	29030-60001	1710
%DVR12	29028-60002	1805
%DVR15	09601-16021	1901
%DVR23	92202-16001	2226
%DVR24	25117-60499	1805
%DVR30	20747-60001	C
%DVR31	29013-60001	1710
%DVR32	92060-16031	2013
%DVR33	12732-16001	1805
%EDITR	92002-16010	2140

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%FF.N	24153-60001	C
%FF4.N	24998-16002	1926
%FFTN4	92060-16093	1913
%FTN4	92060-16092	2026
%IB4A	59310-12001	2026
%KEYS	92060-16052	1707
%KYDMP	92060-16053	1707
%LDR2	92001-16002	1732
%LP31	92062-16003	1805
%MSAFD	92064-16086	2001
%MTM	92001-16003	B
%RDNAM	92060-16045	1926
%RESTR	92060-16040	2001
%RLIB1	24998-16001	1926
%RLIB2	24998-16009	1926
%RLIB3	24998-16011	1926
%RT2G1	92001-16031	1926
%SAVE	92060-16039	1901
%SRQ.P	59310-16005	1805
%SWTCH	92060-16038	1826
%SYLIB	92001-16005	1926
%TVLIB	91200-16002	1648
%TVVER	91200-16004	1648
%VERFY	92060-16041	1704
%WHZT2	92001-16030	1726
%XREF	92060-16028	A
&AN2F0	92001-18033	
&AN2F5	92001-18034	
&AUTOR	92001-18014	1631
&PKDIS	92060-18047	1631
&UPDAT	92060-18046	1926

3.21   (92045A)   A700 Microprogramming Package

Filename	Part Number	Rev
#MPARA	92045-17001	2220
#WLOAD	92045-17003	2220
$WLIB	92045-12002	2220
%ID.41	92045-16002	2326
%MPARA	92045-12001	2220
%WLOAD	92045-16001	2220
A92045	92045-17999	2326

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3.22   (92060B)   RTE-III

Filename	Part Number	Rev
!2GN00	92001-16013	1631
!2GN05	92001-16026	1631
!2GNFH	92001-16018	1631
!DSKUP	92060-16044	1805
!S4L07	02607-16004	1538
!S4L67	29100-60022	A
!S4LP	29100-60017	A
!S4MT1	12970-16004	1550
!S4MT2	29100-60023	A
!S4MT3	29100-60049	A
!S4PHR	29100-60019	A
!S4PUN	29100-60020	A
!S4SYD	29100-60018	A
!S4TER	29100-60050	A
%$CMD2	92001-16029	1710
%0DV05	92001-16028	2140
%0FTN4	92060-16094	2026
%1DV10	72008-60001	A
%1DV37	59310-16002	2126
%1FTN	20875-60001	E
%1FTN4	92060-16095	2001
%2DP43	92001-16004	1926
%2DV10	72009-60001	A
%2DV37	59310-16003	2126
%2DV47	92900-16002	1913
%2FTN	20875-60002	E
%2FTN4	92060-16096	2026
%2SP01	92002-12002	2001
%3DV47	92900-16003	1913
%3FTN	20875-60003	E
%3FTN4	92060-16097	1913
%4DV05	92001-16027	2140
%4FTN	20875-60004	E
%4FTN4	92060-16098	2026
%5FTN	20875-60005	E
%5FTN4	92060-16101	1913
%ALGL1	24129-60002	C
%ALGOL	24129-60001	1643
%ASMB	92060-12004	1639
%AUTOR	92001-16014	1631
%BMLIB	92002-16006	2001
%BMPG1	92002-12001	2001

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%CAL10	20808-60001	B
%CALIB	20810-60001	C
%CLIB	92060-12005	2140
%COPY	92060-16042	1704
%CR2SY	92001-16012	1926
%DBKLB	92060-16043	1901
%DECAR	24306-60001	2026
%DVA05	92001-16035	2140
%DVA12	92001-16020	1826
%DVA13	91200-16001	1648
%DVR00	29029-60001	2140
%DVR11	29030-60001	1710
%DVR12	29028-60002	1805
%DVR15	09601-16021	1901
%DVR23	92202-16001	2140
%DVR24	25117-60499	1805
%DVR30	20747-60001	C
%DVR31	29013-60001	1710
%DVR32	92060-16031	2013
%DVR33	12732-16001	1805
%EDITR	92002-16010	2140
%FF.N	24153-60001	C
%FF4.N	24998-16002	1926
%FFTN4	92060-16093	1913
%FTN4	92060-16092	2026
%IB4A	59310-12001	2026
%KEYS	92060-16052	1707
%KYDMP	92060-16053	1707
%LDR2	92001-16002	1732
%LP31	92062-16003	1805
%MSAFD	92064-16086	2001
%MTM	92001-16003	B
%RDNAM	92060-16045	1926
%RESTR	92060-16040	2001
%RLIB1	24998-16001	1926
%RLIB2	24998-16009	1926
%RLIB3	24998-16011	1926
%RT2G1	92001-16031	1926
%SAVE	92060-16039	1901
%SRQ.P	59310-16005	1805
%SWTCH	92060-16038	1826
%SYLIB	92001-16005	1926
%TVLIB	91200-16002	1648
%TVVER	91200-16004	1648
%VERFY	92060-16041	1704
%WHZT2	92001-16030	1726
%XREF	92060-16028	A
&AN2F0	92001-18033	
&AN2F5	92001-18034	
&AUTOR	92001-18014	1631

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&PKDIS                    92060-18047  1631
&UPDAT                    92060-18046  1926
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3.23   (92061A)   Microprogramming

Filename	Part Number	Rev
%MDEP	92061-16004	1634
%MDES	92061-16005	1926
%MICRO	92061-16001	2013
%MXREF	92061-16002	2013
%PTGEN	92061-16003	1813
%WLOAD	13197-16003	1813

3.24   (92063A)   Image/1000

Filename	Part Number	Rev
%BORL	92063-16009	1621
%DBBLD	92063-16003	1913
%DBDS1	92063-16002	1840
%DBLIB	92063-12001	2126
%DBLOD	92063-16007	1940
%DBRST	92063-16005	1840
%DBSPA	92063-16014	1913
%DBSTR	92063-16004	1645
%DBULD	92063-16006	1805
%QS001	92063-16011	1940
%QS003	92063-16012	1940
%RECOV	92063-16013	1645
&HELP	92063-18010	1623

3.25   (92064A)   RTE-M

Filename	Part Number	Rev
!MCGEN	92064-16033	1901
!MFGEN	92064-16075	1901
%$PVMP	92060-16035	A
%ODV05	92001-16028	2140
%OFTN4	92060-16094	2026

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%1DV10	72008-60001	A
%1DV37	59310-16002	2126
%1FTN4	92060-16095	2001
%2DV10	72009-60001	A
%2DV37	59310-16003	2126
%2DV47	92900-16002	1913
%2FTN4	92060-16096	2026
%3DV47	92900-16003	1913
%3FTN4	92060-16097	1913
%4DV05	92001-16027	2140
%4FTN4	92060-16098	2026
%5FTN4	92060-16101	1913
%CAL10	20808-60001	B
%CALIB	20810-60001	C
%CLIBM	92064-12007	2140
%DECAR	24306-60001	2026
%DIRD	92064-16054	1650
%DRC	92064-16018	1650
%DRC1	92064-16021	1650
%DRF	92064-16056	1650
%DRF1	92064-16060	1650
%DSCHD	09580-16126	A
%DVA05	92001-16035	2140
%DVA12	92001-16020	1826
%DVA13	91200-16001	1648
%DVB12	92062-16004	2013
%DVM72	09580-16079	2101
%DVR00	29029-60001	2301
%DVR11	29030-60001	1710
%DVR12	29028-60002	1805
%DVR15	09601-16021	1901
%DVR23	92202-16001	2226
%DVR33	12732-16001	1805
%FF.N	24153-60001	C
%FF4.N	24998-16002	1926
%FFTN4	92060-16093	1913
%FMGC0	92064-16017	1805
%FMGF0	92064-16055	1805
%FMPC	92064-12005	1805
%FMPF	92064-12006	1805
%FTN4	92060-16092	2026
%IB4A	59310-12001	2026
%KEYS	92060-16052	1707
%KYDMP	92060-16053	1707
%LP31	92062-16003	1805
%MAP	92064-16012	2013
%MAP3	92064-16016	2013
%MASM0	92064-16040	2001
%MASM1	92064-16041	1650
%MASM2	92064-16042	1650

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%MASM3	92064-16043	1650
%MASM4	92064-16044	1650
%MASM5	92064-16050	1650
%MASM6	92064-16026	2001
%MAUTO	92064-16030	2026
%MBU	92064-16005	1650
%MCL	92064-16011	1808
%MCL3	92064-16015	1808
%MDMLB	92064-16013	1740
%MEDIT	92064-16025	1813
%MFTN0	92064-16045	1650
%MFTN1	92064-16046	1650
%MFTN2	92064-16047	1650
%MMP	92064-16006	1940
%MOP	92064-16010	1650
%MPF	92064-16027	2001
%MPF3	92064-16029	2001
%MPRMP	92064-16035	1650
%MRN	92064-16031	1650
%MRSPN	92064-16036	1650
%MSAFD	92064-16086	2001
%MSY1	92064-16001	1940
%MSY2	92064-16002	2026
%MSY3	92064-16003	2026
%MSYLB	92064-16081	2013
%MTI	92064-16008	1650
%MTS	92064-16009	1901
%MXRF0	92064-16051	1650
%ONMTM	92064-16032	1650
%RLIB1	24998-16001	1926
%RLIB2	24998-16009	1926
%RLIB3	24998-16011	1926
%RTMGN	92064-16022	2026
%RTMLD	92064-16023	1740
%RTMSC	92064-16024	1805
%SGPRP	92064-16034	1650
%SRQ.P	59310-16005	1805
%STRTM	92064-16080	1709
%TBLCR	92064-16019	1650
%TBLFP	92064-16057	1709
%TVLIB	91200-16002	1648
%TVVER	91200-16004	1648
&MAUTO	92064-18141	2026
&MHELP	92064-18126	1650
&TBLCR	92064-18059	1650
&TBLFP	92064-18171	1709

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3.26   (92065A)   Basic/1000M

Filename	Part Number	Rev
$BAMLM	92065-12003	2213
%694BS	29102-16003	C
%A2313	29102-60016	B
%ACFIL	92065-16008	1726
%ALARM	92413-16007	B
%BASLB	92101-12003	2213
%DTRAP	92065-16005	1650
%DUFIL	92065-16009	1726
%MBASC	92065-12002	2001
%MBTG	92065-12001	1901
%MESCD	92065-16003	1650
%MESGA	92065-16002	2001
%TSKSC	92101-16013	A

3.27   (92066A)   Measurement & Control

Filename	Part Number	Rev
!2313	09611-16014	1926
!RMCKT	09610-16001	A
%!2313	02313-16002	1926
%2DV62	29009-60001	C
%3DV62	02313-16001	A
%4DV62	02313-16004	2140
%D2313	29011-60004	A
%DVA72	09611-16005	1826
%P2313	29011-60002	A
%R2313	29011-60001	E
%SENSE	09611-16007	A
%T6940	09611-16006	A
%T694S	09611-16015	A

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3.28   (92067A)   RTE-IVA

Filename	Part Number	Rev
!DSKUP	92060-16044	1805
%#EMA	92067-16013	1805
%$CNFX	92067-16006	1926
%0DV05	92001-16028	2140
%0FTN4	92060-16094	2026
%1DV10	72008-60001	A
%1DV37	59310-16002	2126
%1FTN4	92060-16095	2001
%2DV10	72009-60001	A
%2DV37	59310-16003	2126
%2DV47	92900-16002	1913
%2FTN4	92060-16096	2026
%3DV47	92900-16003	1913
%3FTN4	92060-16097	1913
%4ASB0	92067-16070	1940
%4ASB1	92067-16071	1940
%4ASB2	92067-16072	1940
%4ASB3	92067-16073	1940
%4ASB4	92067-16074	1940
%4ASMB	92067-16011	2013
%4AUTR	92067-16005	1805
%4DP43	92067-16004	1926
%4DV05	92001-16027	2140
%4FTN4	92060-16098	2026
%4LDR	92067-16002	2013
%4MTM	92067-16003	2101
%4PVMP	92067-16001	1805
%4SPO1	92067-16028	2013
%4SWTH	92067-16010	1926
%4SYLB	92067-16035	2013
%4WHZT	92067-16007	1926
%4XREF	92067-16012	2001
%5FTN4	92060-16101	1913
%BMLIB	92002-16006	2001
%BMPG1	92002-12001	2001
%CAL10	20808-60001	B
%CALIB	20810-60001	C
%CLIB	92060-12005	2140
%COPY	92060-16042	1704
%CR4S1	92067-16014	2001
%DBKLB	92060-16043	1901
%DBUGR	92067-16075	2013

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%DECAR	24306-60001	2026
%DSCHD	09580-16126	A
%DVA05	92001-16035	2140
%DVA12	92001-16020	1826
%DVA13	91200-16001	1648
%DVB12	92062-16004	2013
%DVM72	09580-16079	2101
%DVR00	29029-60001	2301
%DVR11	29030-60001	1710
%DVR12	29028-60002	1805
%DVR15	09601-16021	1901
%DVR23	92202-16001	2226
%DVR31	29013-60001	1710
%DVR32	92060-16031	2013
%DVR33	12732-16001	1805
%EDITR	92002-16010	2140
%FF4.N	24998-16002	1926
%FFTN4	92060-16093	1913
%FTN4	92060-16092	2026
%HPIB	59310-16004	1926
%IB4A	59310-12001	2026
%KEYS	92060-16052	1707
%KYDMP	92060-16053	1707
%LGTAT	92067-16008	2101
%LP31	92062-16003	1805
%MESS	59310-16011	1926
%MSAFD	92064-16086	2001
%RDNAM	92060-16045	1926
%RESTR	92060-16040	2001
%RLIB1	24998-16001	1926
%RLIB2	24998-16009	1926
%RLIB3	24998-16011	1926
%RT4G1	92067-16009	1926
%SAVE	92060-16039	1901
%SRQ.P	59310-16005	1805
%TVLIB	91200-16002	1648
%TVVER	91200-16004	1648
%VERFY	92060-16041	1704
&4AUTR	92067-18005	1805
&AN4F0	92067-18033	1940
&AN4F5	92067-18034	1940
&PKDIS	92060-18047	1631
&UPDAT	92060-18046	1926

3.29   (92068A)   RTE-IVB

Filename	Part Number	Rev
!DISK	92067-16348	2026
!DSKUP	92067-16340	2013
!MTLDR	92067-16512	2126
"EDIT.	92074-17004	2340
"FCHLP	92084-17150	2226
"HELP	92067-18122	2140
"HELPA	92067-18489	2140
"HELPB	92067-18490	2140
#ED1K4	92074-17001	2213
#FC4	92068-17001	2302
#OLDRE	92059-17002	2213
$ACCLB	92068-12018	2340
$DKULB	92067-12003	2026
$DSCLB	92084-12062	2226
$ED1K4	92074-12003	2340
$FDSLB	24998-12004	2340
$FLIB	24998-12008	2340
$FNDLB	24998-12005	2226
$FOLDF	24998-12009	2340
$IB6A	92084-12036	2340
$LDRLB	92067-16470	2026
$LIB4E	92068-12003	2103
$MATH	24998-12007	2326
$PLIB	92832-16700	2101
$RSLIB	92068-12006	2240
$SHSLB	92832-16701	2101
$VMCLB	92068-12017	2301
%#EMA	92067-16013	1805
%$CNFX	92067-16516	2340
%$DVTB	12792-16005	2340
%$TA32	92067-16507	2001
%$TB32	92067-16509	2001
%0DV05	92001-16028	2140
%0FTN4	92060-16094	2026
%1FTN4	92060-16095	2001
%2DV47	92900-16002	1913
%2FTN4	92060-16096	2026
%3DV47	92900-16003	1913
%3FTN4	92060-16097	1913
%4ASB0	92067-16070	1940
%4ASB1	92067-16071	1940
%4ASB2	92067-16072	1940

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%4ASB3	92067-16073	1940
%4ASB4	92067-16074	1940
%4ASMB	92067-16011	2013
%4AUTR	92067-16118	2340
%4DP43	92067-16004	1926
%4DV05	92001-16027	2140
%4FTN4	92060-16098	2026
%4LDR	92067-16471	2040
%4MTM	92067-16003	2101
%4PVMP	92067-16001	1805
%4SYLB	92067-16268	2340
%4XREF	92067-16012	2001
%5FTN4	92060-16101	1913
%6DA37	92084-16593	2340
%6DV37	92084-16592	2340
%ACCTS	92067-16361	2340
%APL4D	92068-16066	2103
%APL4E	92068-16065	2103
%ATRAN	92059-16013	2226
%BMPG1	92067-16185	2226
%BMPG2	92067-16124	2226
%BMPG3	92067-16125	2308
%CLIB	92067-12001	2226
%CLOAD	92067-16358	2101
%CNF4E	92068-12001	2103
%CNV4E	92068-16062	2103
%COMPL	92067-16359	2101
%COPY	92067-16338	1903
%CR4S1	92067-16102	2301
%CR4S2	92067-16103	2301
%D.BUF	92067-16587	2101
%D.R4E	92068-16064	2103
%DBKLB	92067-16339	2140
%DBUGR	92067-16075	2013
%DDV05	12792-16003	2340
%DDV12	12792-16004	2140
%DECAR	24306-60001	2340
%DSCHD	09580-16126	A
%DVA05	92001-16035	2140
%DVA12	92001-16020	1826
%DVA13	91200-16001	1648
%DVA32	92084-16708	2340
%DVB12	92062-16004	2340
%DVC12	92068-16110	2340
%DVC32	92084-16709	2340
%DVM00	12792-16002	2301
%DVM72	09580-16079	2340
%DVP32	92084-16710	2340
%DVR00	29029-60001	2301
%DVR11	29030-60001	1710

%DVR12	29028-60002	1805
%DVR15	09601-16021	1901
%DVR23	92202-16001	2340
%DVR31	92084-16712	2121
%DVR32	92084-16711	2340
%DVR33	92067-16467	1903
%EDITA	92074-12001	2340
%EDITB	92074-12002	2340
%EDITR	92002-16010	2140
%FFTN4	92060-16093	1913
%FMG4E	92068-12002	2103
%FORMT	92067-16554	2040
%FTN4	92060-16092	2026
%HELP	92067-16121	1903
%KEYS	92060-16052	2340
%KYDMP	92060-16053	2340
%LCOPY	92067-16347	2013
%LGTAT	92067-16008	2101
%LP31	92062-16003	1805
%LSAVE	92067-16344	2026
%LUPRN	92068-16125	2326
%MERGE	92067-16334	2301
%MLD4E	92068-16063	2226
%MSAFD	92064-16086	2001
%NSESN	92067-16456	2101
%OLDRE	92059-16010	2226
%PVM00	12792-16001	2032
%RDNAM	92060-16045	1926
%READR	92068-16054	2240
%READT	92067-16332	2026
%RESTR	92067-16346	2026
%RSTOR	92067-16336	1903
%RT4GN	92067-16315	2101
%SAVE	92067-16335	2013
%SAVER	92068-16053	2240
%SMON1	92067-16260	2301
%SMON2	92067-16261	2001
%SPO1B	92067-16425	2226
%SPO2B	92067-16350	2226
%SRQ.P	59310-16005	1805
%SSTCH	92067-16513	2001
%T5IDM	92067-16469	2226
%TVLIB	91200-16002	1648
%TVVER	91200-16004	1648
%USAVE	92067-16345	2026
%UTLIB	92067-16104	2301
%VERFY	92067-16337	1903
%WHZAT	92067-16501	2226
%WRITT	92067-16333	2301
%XCNTL	92068-16080	2103

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&$CMND              92067-18457   1940
&$TA32              92067-18507   2001
&$TB32              92067-18509   2001
&4AUTR              92067-18456   2340
&C.TAB              92067-18201   2026
&D.BUF              92067-18587   2101
&PKDIS              92060-18047   1631
&UPDAT              92060-18046   1926
=AVL2               92084-16943   2340
=EXT                92084-16941   2340
=FC0                92068-12010   2340
=FC1                92068-12011   2340
=FC2                92068-12012   2340
=FC3                92068-12013   2340
=FC4                92068-12014   2340
=FC5                92068-12015   2340
=FC6                92068-12016   2340
=FCL1               92068-12019   2340
=FCL2               92068-12020   2340
=FCM6               92068-12009   2340
=FLAG               92084-16942   2340
=FPORT              92084-16944   2340
=PLIB               92833-16051   2326
=PRERS              92833-16053   2226
=SHSLB              92833-16052   2326
A92068              92068-18999   2340
SEP.6               92084-17205   2340
```

3.30   + (92069A)   Image/1000

Filename	Part Number	Rev	Change
#DBBLD	92069-18309	2340	
#DBDS	92069-18308	2340	
#DBMS1	92069-18304	2340	
#DBMS2	92069-18305	2340	
#DBMS3	92069-18306	2340	
#IMAGE	92069-18288	2340	
#IMAGL	92069-18289	2340	
#QUERY	92069-18307	2340	
$DBBLL	92069-12009	2340	
$DBDSL	92069-12010	2213	
$DSDB	92069-12007	2340	
$QRYXL	92069-12008	2340	
%BAIMX	92069-16255	2026	
%DBBLX	92069-16001	2340	
%DBCOP	92069-16256	1912	

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     %DBDRT                 92069-16310   2340
     %DBDSX                 92069-16015   2340
     %DBLOX                 92069-16128   2226
     %DBMS                  92069-12002   2340
     %DBRED                 92069-16160   2340
     %DBRSX                 92069-16126   2140
     %DBSPX                 92069-16133   2140
     %DBSTX                 92069-16125   2140
     %DBULX                 92069-16127   2140
     %LOCAL                 92069-12006   2340
  *  %NO/DS                 92069-12005   2340   --> Deleted
  *  %NO\DS                 92069-12005   New    --> 2340
     %QURYX                 92069-16060   2340
  *  %RD.TB                 92069-16257   New    --> 2340
     %RDBA                  92069-12003   2340
     %RDBAM                 92069-16258   2340
     %RDBAP                 92069-16259   2340
     %RECVX                 92069-16134   2140
     %REMOT                 92069-12004   2340
  *  *A92069                92069-18999   New    --> REV.
     *DBUP                  92069-12001   2340
     *IMAGA                 92069-18230   2340
     *IMAGE                 92069-18287   2340
     *IMAGX                 92069-18303   2340
  *  A92069                 92069-18999   2340   --> 2341
     QSHELP                 92069-16122   1912
```

Manual Part#	Title	Type of Update
(no manual changes)		

Media Part#	Media Option
92069-13301	020
92069-13305	020
92069-13311	020
92069-13309	022
92069-13401	040
92069-13404	041
92069-13402	042
92069-13405	044
92069-13501	050
92069-13502	051

3.31   (92070A)   RTE-L Operating System

Filename	Part Number	Rev
$CLIBL	92070-12009	2140
$CMDLB	92070-12004	1941
$DKLIB	92070-12013	2040
$FDSLB	24998-12004	2340
$FMP	92070-12003	2011
$FNDLB	24998-12005	2226
$HPIB	92070-12005	2026
$LDRLB	92067-16470	2026
$LDRLN	92084-12005	2140
$MLIB1	24998-12001	2340
$MLIB2	24998-12001	2340
$MXLB	92070-12002	2101
$PLIB	92832-16700	2101
$SYS..	92070-12001	2040
$SYSLB	92070-12012	2140
%4XREF	92067-16012	2001
%AB2MI	92070-16241	2026
%ASMBC	92070-16279	2040
%AUTOR	92070-16252	1941
%CLASS	92070-16093	1941
%COMND	92070-16076	1941
%COPYL	92070-16336	2326
%D.RTR	92070-16037	2001
%DD.00	92070-16083	1941
%DD.12	92070-16086	2001
%DD.20	92070-16084	1941
%DD.30	92070-16085	1941
%DD.36	92070-16298	2326
%DECAR	24306-60001	2340
%EDITR	92070-16135	1941
%ERLOG	92070-16147	1941
%EXEC	92070-16136	2040
%FMGR	92070-16310	2014
%FORMT	92070-16337	2213
%FTN4L	92070-16287	2026
%HPIBM	92070-16242	2026
%ID.00	92070-16082	1941
%ID.36	92070-16299	1941
%ID.37	92070-16095	2040
%ID.43	92070-16096	1941
%ID.50	92070-16097	1941
%IDM00	12040-16002	2340

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```
%IDS00              24997-16003   2340
%INSTL              92070-16090   1941
%LOAD               92070-16156   1941
%LOADR              92070-16108   2026
%LOADX              92070-16339   2140
%LOCK               92070-16145   1941
%MERGE              92067-16334   2301
%MI2AB              92070-16276   2001
%OPMSG              92070-16151   1941
%PFORM              92070-16288   2001
%RTIOL              92070-16092   1941
%RTLGN              92070-16077   2026
%SAM                92070-16137   1941
%SCHED              92070-16141   1941
%START              92070-16160   1941
%STAT               92070-16154   1941
%STRNG              92070-16143   1941
%SWAP               92070-16158   1941
%SYCOM              92070-16149   1941
%TIME               92070-16139   1941
%XCMND              92070-16152   1941
&AUTOR              92070-18252   1941
&LHELP              92070-18236   1941
&START              92070-18160   1941
A92070              92070-18999   2340
BOOTEX              02145-16001   2001
```

3.32   (92070B)   RTE-L Operating System (Execute only)

Filename	Part Number	Rev
$CMDLB	92070-12004	1941
$DKLIB	92070-12013	2040
$FDSLB	24998-12004	2340
$FMP	92070-12003	2011
$FNDLB	24998-12005	2226
$HPIB	92070-12005	2026
$LDRLB	92067-16470	2026
$LDRLN	92084-12005	2140
$MLIB1	24998-12001	2340
$MLIB2	24998-12001	2340
$MXLB	92070-12002	2101
$PLIB	92832-16700	2101
$SYS..	92070-12001	2040
$SYSLB	92070-12012	2340
%AB2MI	92070-16241	2026
%AUTOR	92070-16252	1941

%CLASS	92070-16093	1941
%COMND	92070-16076	1941
%COPYL	92070-16336	2326
%D.RTR	92070-16037	2001
%DD.00	92070-16083	1941
%DD.12	92070-16086	2001
%DD.20	92070-16084	1941
%DD.30	92070-16085	1941
%DD.36	92070-16298	2326
%DECAR	24306-60001	2340
%EDITR	92070-16135	1941
%ERLOG	92070-16147	1941
%EXEC	92070-16136	2040
%FMGR	92070-16310	2014
%FORMT	92070-16337	2213
%ID.00	92070-16082	1941
%ID.36	92070-16299	1941
%ID.37	92070-16095	2040
%ID.43	92070-16096	1941
%ID.50	92070-16097	1941
%IDM00	12040-16002	2340
%IDS00	24997-16003	2340
%INSTL	92070-16090	1941
%LOAD	92070-16156	1941
%LOADR	92070-16108	2026
%LOADX	92070-16339	2140
%LOCK	92070-16145	1941
%MERGE	92067-16334	2301
%MI2AB	92070-16276	2001
%OPMSG	92070-16151	1941
%PFORM	92070-16288	2001
%RTIOL	92070-16092	1941
%RTLGN	92070-16077	2026
%SAM	92070-16137	1941
%SCHED	92070-16141	1941
%START	92070-16160	1941
%STAT	92070-16154	1941
%STRNG	92070-16143	1941
%SWAP	92070-16158	1941
%SYCOM	92070-16149	1941
%TIME	92070-16139	1941
%XCMND	92070-16152	1941
&AUTOR	92070-18252	1941
&LHELP	92070-18236	1941
&START	92070-18160	1941
B92070	92070-18997	2340
BOOTEX	02142-16001	2110
BOOTEX	02145-16001	2001

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3.33   (92071A)   RTE-XL Operating System

Filename	Part Number	Rev
"EDIT.	92074-17004	2340
"FCHLP	92084-17150	2226
"M.ERR	92059-18011	2226
"MACLB	92059-18012	2301
#ED1KL	92074-17002	2213
#FCL	92071-17001	2302
$CMDLB	92071-12004	2041
$DKLIB	92070-12013	2040
$DTCLB	92071-12015	2226
$ED1KL	92074-12004	2340
$FCL1	92084-12067	2340
$FCL2	92084-12068	2340
$FCLBL	92071-12016	2340
$FDSLB	24998-12004	2340
$FMP	92071-12003	2226
$FNDLB	24998-12005	2226
$HPIB	92071-12005	2213
$LDRLB	92067-16470	2026
$LDRLN	92084-12005	2140
$MLIB1	24998-12001	2340
$MLIB2	24998-12001	2340
$MXLB	92071-12002	2140
$PLIB	92854-16003	2144
$SHSLB	92854-16004	2144
$SYS..	92071-12001	2213
$SYSLB	92071-12012	2226
%AB2MI	92071-16241	2041
%ATRAN	92059-16013	2226
%AUTOR	92070-16252	1941
%BUILD	92071-16336	2150
%CLASS	92071-16093	2213
%COMND	92070-16076	1941
%COPYL	92070-16336	2326
%CSYS	92071-16405	2226
%D.RTR	92071-16037	2041
%DD.00	92071-16083	2340
%DD.12	92071-16086	2326
%DD.20	92071-16084	2326
%DD.23	92071-16312	2340
%DD.30	92071-16085	2326
%DD.33	92071-16394	2340
%DD.36	92070-16298	2326

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%DECAR	24306-60001	2340
%EDITA	92074-12001	2340
%EDITB	92074-12002	2340
%EDITR	92070-16135	1941
%ERLOG	92071-16147	2041
%EXEC	92071-16136	2226
%FC0	92084-12056	2340
%FC1	92084-12057	2340
%FC2	92084-12058	2340
%FC3	92084-12059	2340
%FC4	92084-12060	2340
%FC5	92084-12065	2340
%FC6	92084-12066	2340
%FCML	92071-12013	2340
%FMGR	92071-16310	2226
%FORMC	92084-16827	2302
%FORMT	92070-16337	2213
%FTEST	02145-16009	2301
%HPIBM	92071-16242	2213
%ID.00	92071-16082	2326
%ID.36	92071-16299	2326
%ID.37	92071-16408	2326
%ID.43	92071-16096	2240
%ID.50	92071-16097	2326
%ID.52	92071-16365	2326
%IDM00	12040-16002	2340
%IDS00	24997-16003	2340
%INSTL	92071-16090	2213
%LIF	24998-12006	2301
%LOAD	92071-16156	2140
%LOADR	92071-16108	2140
%LOCK	92071-16145	2041
%MACR0	92059-16002	2340
%MACR1	92059-16003	2340
%MACR2	92059-16004	2340
%MACR3	92059-16005	2340
%MACR4	92059-16006	2340
%MACR5	92059-16007	2340
%MACR6	92059-16008	2340
%MACR7	92059-16009	2340
%MACRO	92059-16001	2340
%MERGE	92067-16334	2301
%MI2AB	92071-16276	2213
%OLDRE	92059-16010	2226
%OPMSG	92071-16151	2041
%PFORM	92071-16288	2150
%RTIOL	92071-16092	2226
%RTLGN	92071-16077	2301
%SAM	92071-16137	2041
%SCHED	92071-16141	2041

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```
        %STAT              92071-16154   2041
        %STRNG             92071-16143   2041
        %SWAP              92071-16158   2101
        %SYCOM             92071-16149   2041
        %TIME              92071-16139   2041
        %XCMND             92071-16152   2041
        &AUTOR             92070-18252   1941
        &LHELP             92070-18236   1941
        =PLIB              92833-16051   2326
        =PRERS             92833-16053   2226
        =SHSLB             92833-16052   2326
        A92071             92071-18999   2340
        BOOTEX             92071-16409   2213
```

3.34   + (92073A)   Image/1000L

	Filename	Part Number	Rev	Change
	#DBBLD	92069-18309	2340	
	#DBDS	92069-18308	2340	
	#DBMS1	92069-18304	2340	
	#DBMS2	92069-18305	2340	
	#DBMS3	92069-18306	2340	
	#IMAGE	92069-18288	2340	
	#IMAGL	92069-18289	2340	
	$DBBLL	92069-12009	2340	
	$DBDSL	92069-12010	2213	
*	$DSDB	92069-12007	New	--> 2340
	%BAIMX	92069-16255	2026	
	%DBBLX	92069-16001	2340	
	%DBCOP	92069-16256	1912	
	%DBDRT	92069-16310	2340	
	%DBDSX	92069-16015	2340	
	%DBLOX	92069-16128	2226	
	%DBMS	92069-12002	2340	
	%DBRED	92069-16160	2340	
	%DBRSX	92069-16126	2140	
	%DBSPX	92069-16133	2140	
	%DBSTX	92069-16125	2140	
	%DBULX	92069-16127	2140	
	%LOCAL	92069-12006	2340	
*	%NO/DS	92069-12005	2340	--> Deleted
*	%NO\DS	92069-12005	New	--> 2340
*	%RD.TB	92069-16257	New	--> 2340
	%RDBA	92069-12003	2340	
	%RDBAM	92069-16258	2340	
	%RDBAP	92069-16259	2340	

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```
     %RECVX                  92069-16134  2140
     %REMOT                  92069-12004  2340
 *   *A92073                 92073-18999  New    --> REV.
     *DBUP                   92069-12001  2340
     *IMAGA                  92069-18230  2340
     *IMAGE                  92069-18287  2340
     *IMAGX                  92069-18303  2340
 *   A92073                  92073-18999  2340   --> 2341
```

Manual Part#	Title	Type of Update
(no manual changes)		

Media Part#	Media Option
92069-13305	020
92069-13311	020
92073-13301	020
92073-13302	022
92073-13401	041
92069-13402	042
92073-13501	050
92073-13502	051

3.35   (92076A)   Basic/1000-L

Filename	Part Number	Rev
$ABLIB	92076-12002	2213
$BSLBL	92076-12001	2226
%BASIC	92076-16001	2326
%BATBL	92076-16002	2040
%SRV.L	92076-16004	2040
*BASIC	92076-18027	2001
*BATBL	92076-18028	2040
*TBFIL	92076-18029	2001
A92076	92076-18999	2326

3.36   + (92077A)   RTE-A Operating System

	Filename	Part Number	Rev	Change
	!ARSTM	92077-16662	2340	
	!ARSTR	92077-16639	2326	
	!PBV	92077-16416	2302	
	!PBVM	92077-16661	2340	
	"CDSLB	92059-18027	2326	
	"EDIT.	92074-17004	2340	
	"FCHLP	92084-17150	2226	
	"M.ERR	92059-18025	2326	
	"MACLB	92059-18026	2326	
	#AB2MI	92077-17030	2326	
	#ARSTR	92077-17101	2326	
	#ASAVE	92077-17100	2326	
	#AUTOR	92077-17042	2340	
	#BIGLB	92077-17046	2326	
	#BUILD	92077-17036	2326	
	#CIA	92077-17026	2340	
	#CIX	92077-17105	2340	
	#CLSDS	92077-17019	2326	
	#COMND	92077-17043	2326	
	#COPYL	92077-17038	2326	
	#CSYS	92077-17035	2326	
	#D.RTR	92077-17016	2326	
	#DL	92077-17028	2340	
*	#DRSTR	92077-17110	New	--> 2401
*	#DSAVE	92077-17111	New	--> 2401
	#DSRTR	92077-17018	2326	
	#ED1KA	92074-17005	2326	
	#FCA	92077-17008	2340	
	#FMGR	92077-17032	2326	
	#FORMC	92077-17034	2326	
	#FORMF	92077-17104	2326	
*	#FORMT	92077-17041	2326	--> 2401
	#FOWN	92077-17029	2326	
	#FPACK	92077-17012	2326	
	#FPUT	92077-17013	2326	
	#FREES	92077-17011	2326	
	#FSCON	92077-17014	2326	
	#FTEST	92077-17037	2326	
	#FVERI	92077-17015	2326	
	#INSTL	92077-17039	2326	
	#IO	92077-17027	2326	
	#LI	92077-17108	2340	

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	#LIF	92077-17033	2326	
	#LINDX	92077-17021	2326	
	#LINK	92077-17020	2326	
	#MACRO	92059-17004	2340	
	#MERGE	92077-17023	2326	
	#MI2AB	92077-17031	2326	
	#OLDRE	92059-17002	2213	
	#PBV	92077-17010	2302	
	#PRIN0	92077-17025	2326	
	#PRINT	92077-17024	2326	
	#RTAGN	92077-17040	2326	
	#TF	92077-17102	2326	
	#TRFAS	92077-17017	2326	
	#WH	92077-17022	2326	
*	$BIGLB	92077-12006	2340	--> 2401
	$CMDLB	92077-12004	2326	
	$CRLIB	92077-12025	2340	
*	$DBULB	92077-12027	New	--> 2401
*	$DKLIB	92077-12024	2326	--> 2401
	$DSLDR	92077-12015	2326	
	$DTCLB	92071-12015	2226	
	$ED1KA	92074-12011	2340	
	$EMCLB	92077-12007	2213	
	$FCDS	24998-12011	2326	
	$FCL1	92084-12067	2340	
	$FCL2	92084-12068	2340	
	$FCLBA	92077-12023	2326	
	$FDSLB	24998-12004	2340	
	$FLIB	24998-12008	2340	
	$FMGR	92077-12005	2326	
	$FMP	92077-12003	2340	
	$FMPC	92077-12018	2340	
	$FNDLB	24998-12005	2226	
	$FNEWF	24998-12010	2326	
	$FOLDF	24998-12009	2340	
	$HPIB	92077-12021	2326	
	$LDRLN	92084-12038	2340	
	$MATH	24998-12007	2326	
	$PBULB	92077-12019	2326	
	$PLIB	92833-16005	2326	
	$PLIBN	92833-16054	2326	
	$PRINT	92077-12008	2213	
	$SHSLB	92833-16006	2326	
	$SYSA	92077-12001	2326	
*	$SYSLB	92077-12012	2340	--> 2401
	$TFLIB	92077-12020	2340	
	$VLB6B	12829-12002	2213	
	$VLBA1	92077-12014	2226	
	$WFCLB	92077-12022	2326	
	%$MWB1	92077-16097	2226	

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	%AB2MI	92077-16433	2326	
	%ARSTR	92077-16587	2326	
	%ASAVE	92077-16586	2326	
	%ATRAN	92059-16013	2226	
	%AUTOR	92077-16385	2340	
*	%BIGHD	92077-16073	2328	--> 2401
	%BUILD	92077-16336	2326	
	%CI	92077-16445	2340	
	%CISUB	92077-16535	2340	
	%CIX	92077-16651	2340	
	%CLASS	92077-16442	2340	
	%CLSDS	92077-16463	2326	
	%CMPBF	92077-16415	2302	
	%COMND	92077-16076	2213	
	%COPYL	92070-16336	2326	
	%CSYS	92077-16636	2326	
	%D.RTR	92077-16455	2340	
*	%DD.00	92071-16083	2340	--> Deleted
*	%DD.00	92077-16699	New	--> 2401
	%DD.12	92071-16086	2326	
	%DD.20	92071-16084	2326	
	%DD.23	92071-16312	2340	
*	%DD.24	92077-16648	New	--> 2401
*	%DD.30	92071-16085	2326	--> Deleted
*	%DD.30	92077-16669	New	--> 2401
*	%DD.33	92071-16394	2340	--> Deleted
*	%DD.33	92077-16668	New	--> 2401
	%DD.36	92070-16298	2326	
*	%DDC12	92077-16386	2326	--> 2401
*	%DDM30	92077-16666	New	--> 2401
	%DECAR	24306-60001	2340	
	%DL	92077-16447	2340	
*	%DRSTR	92077-16701	New	--> 2401
*	%DSAVE	92077-16702	New	--> 2401
	%DSRTR	92077-16462	2340	
	%EDITA	92074-12001	2340	
	%EDITB	92074-12002	2340	
	%ERLOG	92077-16147	2340	
	%EXEC	92077-16136	2340	
	%FC0	92084-12056	2340	
	%FC1	92084-12057	2340	
	%FC2	92084-12058	2340	
	%FC3	92084-12059	2340	
	%FC4	92084-12060	2340	
	%FC5	92084-12065	2340	
	%FC6	92084-12066	2340	
	%FCMA	92077-12016	2340	
	%FFL	92077-16067	2213	
	%FMGR	92077-16310	2326	
*	%FNDBT	92077-16659	2340	--> Deleted

```
  %FORMC            92084-16827   2302
* %FORMF            92077-16393   2326    --> 2342
* %FORMT            92070-16337   2213    --> Deleted
* %FORMT            92077-16697   New     --> 2401
  %FOWN             92077-16449   2326
  %FPACK            92077-16451   2326
  %FPUT             92077-16452   2326
  %FREES            92077-16450   2326
  %FSCON            92077-16453   2326
* %FTEST            92077-16637   2326    --> 2401
  %FVERI            92077-16454   2340
* %GEN27            92077-16629   2326    --> 2342
  %ID.00            92071-16082   2326
  %ID.01            92077-16390   2326
* %ID.27            92077-16628   2340    --> 2401
  %ID.36            92071-16299   2326
* %ID.37            92071-16408   2326    --> Deleted
* %ID.37            92077-16696   New     --> 2401
  %ID.43            92077-16096   2340
* %ID.50            92071-16097   2326    --> Deleted
* %ID.50            92077-16667   New     --> 2401
  %ID.52            92071-16365   2326
  %IDM00            12040-16002   2340
* %IDM37            92077-16700   New     --> 2401
  %IDS00            24997-16003   2340
  %INSTL            92077-16090   2340
* %IO               92077-16446   2326    --> 2401
  %IOMOD            92077-16471   2340
  %LI               92077-16646   2340
  %LIF              92077-16638   2326
  %LINDX            92077-12026   2340
  %LINKA            92077-16464   2340
  %LINKB            92077-16466   2340
  %LOAD             92077-16156   2326
  %LOCK             92077-16484   2326
  %LTEST            02145-16020   2340
  %MACR0            92059-16015   2340
  %MACR1            92059-16016   2340
  %MACR2            92059-16017   2340
  %MACR3            92059-16018   2340
  %MACR4            92059-16019   2340
  %MACR5            92059-16020   2340
  %MACR6            92059-16021   2340
  %MACR7            92059-16022   2340
  %MACRO            92059-16014   2340
  %MDMLB            92077-16392   2340
  %MEMRY            92077-16469   2340
  %MERGE            92077-16431   2340
  %MI2AB            92077-16432   2326
  %MODEM            92077-16391   2340
```

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%MSGS	92077-16474	2326
%MUXUP	92077-16660	2340
%OLDRE	92059-16010	2226
%OPMSG	92077-16151	2326
%PBV	92077-16414	2302
%PERR	92077-16472	2326
%PRERS	92833-16007	2226
%PRIN0	92077-16054	2326
%PRINT	92077-16009	2326
%RPL60	92077-16475	2326
%RPL61	92077-16476	2326
%RPL70	92077-16477	2326
%RPL71	92077-16478	2326
%RPL90	92077-16479	2326
%RTAGN	92077-16077	2326
%RTIOA	92077-16470	2340
%SAM	92077-16443	2326
%SCHED	92077-16141	2326
%STAT	92077-16154	2326
%STRNG	92077-16444	2326
%SYCOM	92077-16149	2326
%TF	92077-16598	2340
%TIME	92077-16438	2326
%TRFAS	92077-16461	2326
%VCTR	92077-16473	2340
%VISOA	92077-16383	2301
%WH	92077-16110	2326
%WHSUB	92077-16111	2326
%XCMND	92077-16152	2326
&AUTOR	92077-18385	2340
&FFL	92077-18067	2213
=PLIB	92833-16051	2326
=PRERS	92833-16053	2226
=SHSLB	92833-16052	2326
???	92077-17099	2326
?AS	92077-17048	2326
?AT	92077-17049	2326
?BR	92077-17050	2326
?CD	92077-17051	2326
?CI	92077-17045	2326
?CL	92077-17052	2326
?CN	92077-17053	2326
?CO	92077-17054	2340
?CR	92077-17055	2326
?CRDIR	92077-17056	2326
?DC	92077-17057	2326
?DL	92077-17058	2340
?DT	92077-17059	2326
?ERROR	92077-17060	2326
?EX	92077-17061	2326

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```
    ?FOWN              92077-17063   2326
    ?FPACK             92077-17065   2326
    ?FREES             92077-17062   2326
    ?FVERI             92077-17064   2326
    ?GO                92077-17066   2326
    ?IN                92077-17067   2326
    ?IO                92077-17068   2326
    ?LI                92077-17069   2326
    ?LINDX             92077-17070   2326
    ?LINK              92077-17044   2326
    ?MACRO             92059-17003   2326
    ?MASK              92077-17071   2326
    ?MC                92077-17072   2326
    ?MERGE             92077-17073   2340
    ?MO                92077-17074   2326
    ?OF                92077-17075   2326
    ?OWNER             92077-17076   2326
    ?PR                92077-17077   2326
    ?PRINT             92077-17079   2326
    ?PROT              92077-17080   2326
    ?PU                92077-17081   2326
    ?RN                92077-17082   2326
    ?RP                92077-17083   2326
    ?RU                92077-17084   2340
    ?SS                92077-17086   2326
    ?SZ                92077-17087   2326
    ?TM                92077-17088   2326
    ?TO                92077-17089   2326
    ?TR                92077-17090   2326
    ?UL                92077-17091   2326
    ?UNPU              92077-17092   2326
    ?UP                92077-17093   2326
    ?VS                92077-17094   2326
    ?WD                92077-17095   2340
    ?WH                92077-17096   2326
    ?WS                92077-17097   2326
    ?XQ                92077-17098   2340
  * A92077             92077-18999   2340   --> 2401
  * BOOTEX             92077-16364   2340   --> 2401
  * EDIT.HLP           92074-17007   New    --> 2401
  * M92077             92077-18998   New    --> 2401
  * A92077             92077-18999   New    --> REV.
```

Manual Part#	Title	Type of Update
92077-90004	RTE-A Utilities Manual	Update 2
92077-90011	RTE-A Driver Reference Manual	Edition 3
92077-90034	RTE-A System Generation and Installation Manual	Update 3

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92077-90038   RTE-A Primary System Software Manual   Update 2
92077-90048   FCO Utility Manual   Update 1

Media   Part#   Media Option
-------------+---------------
    (no media changes)

3.37   (92078A)   RTE-A Virtual Code+ (VC+)

Filename	Part Number	Rev
#CICDS	92078-17010	2340
#CIXC	92078-17013	2340
#LOGON	92078-17005	2326
#OUTPT	92078-17003	2326
#PROMT	92078-17007	2326
#SMP	92078-17004	2326
#SP	92078-17001	2326
#SPGET	92078-17002	2326
#USERS	92078-17006	2326
$CDS	92078-12001	2340
$CRCDS	92078-12002	2340
%CDSFH	92078-16001	2326
%CICDS	92078-16016	2340
%CIXC	92077-16652	2340
%LOGON	92078-16013	2326
%OUTPT	92078-16005	2326
%PROMT	92078-16015	2326
%RPL62	92078-16008	2326
%RPL63	92078-16009	2326
%RPL72	92078-16010	2326
%RPL73	92078-16011	2326
%RPL91	92078-16012	2326
%SMP	92078-16007	2326
%SP	92078-16002	2326
%SPGET	92078-16004	2326
%SPOOL	92078-16003	2326
%SPRT	92078-16006	2326
%USERS	92078-16014	2326
?SP	92078-17011	2326
?USERS	92078-17009	2326
A92078	92078-17999	2340

3.38   (92080A)   Datacap/1000-II

Filename	Part Number	Rev
#DCIML	92080-18591	2140
#DCMON	92080-18212	2140
#DCRCV	92080-18590	2140
#RT4GN	92080-17003	2226
#RT6GN	92080-17004	2226
#TGP	92080-18321	2140
#TIME	92080-18209	2140
#TMPGN	92080-18412	2140
#TMSL4	92080-18604	2140
#TMSL6	92080-18605	2140
$GPLB4	92080-12001	2226
$TGPLB	92080-12300	2226
$TMGL1	92080-12401	2140
$TMGLB	92080-12400	2226
$TMSL1	92080-12101	2140
$TMSL4	92080-12002	2226
$TMSL6	92080-12003	2226
$TMSLB	92080-12100	2226
%DBMS	92069-12002	2213
%DCIMX	92080-16608	2226
%DCMNS	92080-16200	2226
%DCRCV	92080-16584	2226
%IOM70	92080-16560	2226
%IOM75	92080-16570	2226
%IOM82	92080-16607	2226
%LOCAL	92069-12006	2213
%OFLPO	92080-16580	2140
%R2140	92080-16582	2140
%STORA	92080-16540	2140
%STORB	92080-16550	2140
%TG10S	92080-16307	2140
%TG11S	92080-16308	2140
%TG12S	92080-16309	2226
%TG13S	92080-16310	2140
%TG14A	92080-16391	2226
%TGP	92080-16350	2226
%TGP0A	92080-16351	2140
%TGP1S	92080-16301	2226
%TGP2S	92080-16302	2140
%TGP3A	92080-16358	2140
%TGP4A	92080-16359	2140
%TGP5S	92080-16303	2226

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```
%TGP6S               92080-16304   2140
%TGP7S               92080-16311   2140
%TGP8S               92080-16305   2140
%TGP9S               92080-16306   2140
%TIME                92080-16213   2140
%TMG0A               92080-16452   2226
%TMG1A               92080-16453   2226
%TMG2A               92080-16454   2140
%TMG3A               92080-16455   2226
%TMG4A               92080-16456   2140
%TMG5A               92080-16457   2226
%TMPGN               92080-16451   2226
%TSE                 92080-16520   2226
%TSMG                92080-16530   2140
%XMLIM               92080-16594   2140
%ZTMP                92080-16510   2226
*DATCA               92080-18204   2140
*DCMTL               92080-18583   2140
*TYPE0               92080-18203   2140
/TGP                 92080-18319   2140
/TMPGN               92080-18410   2140
A92080               92080-18210   2226
\TGP                 92080-18320   2140
\TMPGN               92080-18413   2140
```

3.39   + (92081A)   Image/1000-II

Filename	Part Number	Rev	Change
Path: /IMAGE2/			
* "DBUTL	92081-17025	2321	--> 2401
* #DB6S1	92081-17027	2321	--> Deleted
* #DB6S2	92081-17028	2321	--> Deleted
* #DB6S3	92081-17029	2321	--> Deleted
* #DBARC	92081-17004	2321	--> Deleted
* #DBBLD	92081-17005	2321	--> Deleted
* #DBDS	92081-17006	2321	--> Deleted
* #DBLOD	92081-17007	2321	--> Deleted
* #DBMON	92081-17008	2330	--> Deleted
* #DBMS1	92081-17021	2321	--> Deleted
* #DBMS2	92081-17022	2321	--> Deleted
* #DBMS3	92081-17023	2321	--> Deleted
* #DBRBR	92081-17009	2321	--> Deleted
* #DBRFR	92081-17010	2321	--> Deleted
* #DBRST	92081-17011	2321	--> Deleted
* #DBSPA	92081-17012	2321	--> Deleted

- Software Update Notice -

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*  #DBSTR          92081-17014   2321   --> Deleted
*  #DBULD          92081-17015   2321   --> Deleted
*  #DBUTL          92081-17016   2321   --> Deleted
*  #DEMON          92081-17017   2321   --> Deleted
*  #QUERY          92081-17018   2321   --> Deleted
*  $DBEMA          92081-12010   2401   --> Deleted
*  $DBULL          92081-12011   2330   --> Deleted
*  $DMONL          92081-12009   2330   --> Deleted
*  $DSDB           92081-12006   2330   --> Deleted
*  $NO\DS          92081-12005   2330   --> Deleted
*  $QRYXL          92081-12012   2330   --> Deleted
*  %DBARC          92081-16630   2330   --> Deleted
*  %DBBLD          92081-16013   2330   --> Deleted
*  %DBBLL          92081-12007   2330   --> Deleted
*  %DBDS           92081-16014   2330   --> Deleted
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*  %DBMON          92081-16015   2330   --> Deleted
*  %DBMS           92081-12001   2330   --> Deleted
*  %DBRBR          92081-16016   2330   --> Deleted
*  %DBRFR          92081-16017   2330   --> Deleted
*  %DBRST          92081-16760   2330   --> Deleted
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*  %DBULD          92081-16780   2330   --> Deleted
*  %DBUTL          92081-16018   2330   --> Deleted
*  %DEMON          92081-16830   2330   --> Deleted
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*  %QUERY          92081-16019   2330   --> Deleted
*  %RDBA           92081-12003   2330   --> Deleted
*  %RDBAM          92081-16880   2330   --> Deleted
*  %RDBAP          92081-16020   2330   --> Deleted
*  %REMOT          92081-12004   2330   --> Deleted
*  %SAM6I          92081-16022   2321   --> Deleted
*  %SAMAI          92081-16021   2321   --> Deleted
*  %USNUM          92081-16577   2321   --> Deleted
   &ADD            92081-18831   2340
   &CCRSH          92081-18833   2340
   &CRASH          92081-18836   2340
   &LOGGR          92081-18835   2340
*  &OVRD           92081-16281   2330   --> Deleted
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*  &RFLL           92081-16560   2330   --> Deleted
   &SLOB           92081-18832   2340
   &TRADE          92081-18834   2340
*  *IMAGA          92081-17002   2321   --> Deleted
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*	A92081	92081-18999	New	--> 2420
	CMDZOO	92081-18837	2340	
*	DB6S1.CMD	92081-17027	New	--> 2401
*	DB6S2.CMD	92081-17028	New	--> 2401
*	DB6S3.CMD	92081-17029	New	--> 2401
*	DBARC.LOD	92081-17004	New	--> 2401
*	DBARC.REL	92081-16630	New	--> 2401
*	DBBLD.LOD	92081-17005	New	--> 2401
*	DBBLD.REL	92081-16013	New	--> 2401
*	DBBLL.LIB	92081-12007	New	--> 2401
*	DBDS.LOD	92081-17006	New	--> 2401
*	DBDS.REL	92081-16014	New	--> 2401
*	DBDSL.LIB	92081-12008	New	--> 2401
*	DBEMA.LIB	92081-12010	New	--> 2403
*	DBLOD.LOD	92081-17007	New	--> 2401
*	DBLOD.REL	92081-16670	New	--> 2401
*	DBMON.LOD	92081-17008	New	--> 2401
*	DBMON.REL	92081-16015	New	--> 2401
*	DBMS.REL	92081-12001	New	--> 2401
*	DBMS1.CMD	92081-17021	New	--> 2401
*	DBMS2.CMD	92081-17022	New	--> 2401
*	DBMS3.CMD	92081-17023	New	--> 2401
*	DBRBR.LOD	92081-17009	New	--> 2401
*	DBRBR.REL	92081-16016	New	--> 2401
*	DBRFR.LOD	92081-17010	New	--> 2401
*	DBRFR.REL	92081-16017	New	--> 2401
*	DBRST.LOD	92081-17011	New	--> 2401
*	DBRST.REL	92081-16760	New	--> 2401
*	DBSPA.LOD	92081-17012	New	--> 2401
*	DBSPA.REL	92081-16770	New	--> 2401
*	DBSPL.LOD	92081-17013	New	--> 2401
*	DBSPL.REL	92081-16775	New	--> 2401
*	DBSTR.LOD	92081-17014	New	--> 2401
*	DBSTR.REL	92081-16765	New	--> 2401
*	DBULD.LOD	92081-17015	New	--> 2401
*	DBULD.REL	92081-16780	New	--> 2401
*	DBULL.LIB	92081-12011	New	--> 2401
*	DBUTL.LOD	92081-17016	New	--> 2401
*	DBUTL.REL	92081-16018	New	--> 2401
*	DEMON.LOD	92081-17017	New	--> 2401
*	DEMON.REL	92081-16830	New	--> 2401
*	DMONL.LIB	92081-12009	New	--> 2401
*	DSDB.LIB	92081-12006	New	--> 2401
*	IMAGE6.CMD	92081-17001	New	--> 2420
*	IMAGEA.CMD	92081-17002	New	--> 2420
*	LOCAL.REL	92081-12002	New	--> 2401
*	NO\DS.REL	92081-12005	New	--> 2401
*	OVRD.REL	92081-16281	New	--> 2401
*	PASCAL.LIB	92833-16113	New	--> 2401
*	PASCAL_CDS.LIB	92833-16104	New	--> 2401

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```
*  QRYXL.LIB          92081-12012   New    --> 2401
   QSHELP             92081-17024   2321
*  QUERY.LOD          92081-17018   New    --> 2401
*  QUERY.REL          92081-16019   New    --> 2401
*  RDBA.REL           92081-12003   New    --> 2401
*  RDBAM.REL          92081-16880   New    --> 2401
*  RDBAP.REL          92081-16020   New    --> 2401
*  RDTB.REL           92081-16410   New    --> 2401
*  REMOT.REL          92081-12004   New    --> 2401
*  RFLL.LIB           92081-16560   New    --> 2401
*  SAM6I.REL          92081-16022   New    --> 2401
*  SAMAI.REL          92081-16021   New    --> 2401
*  USNUM.REL          92081-16577   New    --> 2401
   ZOOBLD             92081-18838   2340
   ZOORT              92081-18839   2340
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Manual Part#	Title	Type of Update
92081-90001	IMAGE/1000-II User Reference Manual	Update 2
92081-90003	IMAGE/1000-II Configuration Guide	Edition 2
5958-8110	Replace Pascal Library	

Media Part#	Media Option
92081-13301	022
92081-13401	044
92081-13402	044
92081-13403	044
92081-13404	044
92081-13405	044
92081-13406	044
92081-13407	044
92081-13501	050
92081-13502	051

3.40   (92082A)   Accel/1000

Filename	Part Number	Rev
$PRLIB	92082-12001	2001
%CPLOT	92082-16009	2001
%CTRAC	92082-16001	2001
%DVR36	13197-16001	1605
%MDEP	92061-16004	1634
%MDES	92061-16005	1926

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%MICRO                92061-16001   2013
%MONTR                92082-16008   2001
%MXREF                92061-16002   2013
%PTGEN                92061-16003   1813
%WLOAD                13197-16003   1813
A92082                92082-18999   2026
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3.41   (92083A)   Profile Monitor

Filename	Part Number	Rev
$PRLIB	92082-12001	2001
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%ATRAC	92083-16001	2226
%CPLOT	92082-16009	2001
%CTRAC	92082-16001	2001
%MONTR	92082-16008	2001
A92083	92083-18999	2226

3.42   + (92084A)   RTE-6/VM

Filename	Part Number	Rev	Change
!BCK10	92084-16736	2302	
!BCK11	92084-16736	2302	
!BCK12	92084-16736	2302	
!BCK13	92084-16736	2302	
!BCK14	92084-16736	2302	
!BCK01	92084-16736	2302	
!BCK02	92084-16736	2302	
!BCK03	92084-16736	2302	
!BCK04	92084-16736	2302	
!BCK05	92084-16736	2302	
!BCK06	92084-16736	2302	
!BCK07	92084-16736	2302	
!BCK08	92084-16736	2302	
!BCK09	92084-16736	2302	
!MTLDR	92067-16512	2126	
"CMD	92084-17004	2301	
"EDIT.	92074-17004	2340	
"FCHLP	92084-17150	2226	
"HELP	92084-17001	2340	
"M.ERR	92059-18025	2326	
"MACLB	92059-18026	2326	

#CI6	92084-17207	2340
#CIX	92084-17260	2340
#CLSDS	92084-17254	2340
#D.RTR	92084-17211	2340
#DL	92077-17028	2340
#DSRTR	92084-17212	2340
#ED1K6	92074-17003	2340
#FC6	92084-17151	2302
#FORMC	92084-17125	2340
#FORMT	92084-17029	2340
#FOWN	92084-17255	2340
#FPACK	92084-17256	2340
#FREES	92084-17257	2340
#FSCON	92084-17258	2340
#FVERI	92084-17259	2340
#LI	92077-17108	2340
#LINDX	92084-17209	2340
#LINK	92084-17210	2340
#MACRO	92059-17004	2340
#MERGE	92084-17208	2340
#MLLD6	92084-17189	2226
#OLDRE	92059-17002	2213
#PCOPY	92084-17152	2340
#PRSTR	92084-17154	2340
#PSAVE	92084-17153	2340
#PSPAR	92084-17155	2340
#READR	92084-17005	2340
#SAVER	92084-17006	2340
#SCOM	92084-17036	2340
#SGMTR	92084-17106	2121
#SWTCH	92084-17039	2340
#TF	92077-17102	2326
#TRFAS	92084-17253	2340
$6FCLB	92084-12035	2340
$6SYLB	92084-12001	2340
$ACCLB	92068-12018	2340
$BCKUP	92084-12050	2302
$BEGGT	92084-12051	2302
$CRLIB	92077-12025	2340
$DSCLB	92084-12062	2226
$DTCLB	92084-12053	2226
$ED1K6	92074-12005	2340
$EMCLB	92084-12002	2121
$FCL1	92084-12067	2340
$FCL2	92084-12068	2340
$FCLBA	92077-12023	2326
$FDSLB	24998-12004	2340
$FLIB	24998-12008	2340
$FMP6	92084-12071	2340
$FMPC	92077-12018	2340

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$FNDLB	24998-12005	2226
$FNEWF	24998-12010	2326
$FOLDF	24998-12009	2340
$IB6A	92084-12036	2340
$LDRLN	92084-12038	2340
$MATH	24998-12007	2326
$MLSLB	92084-12015	2121
$ONLIN	92084-12061	2121
$PLIB	92833-16005	2326
$PLIBN	92833-16054	2326
$RBLIB	92084-12018	2121
$RSLIB	92068-12006	2240
$SHSLB	92833-16006	2326
$TFLIB	92077-12020	2340
$UTLIB	92084-12033	2301
$VCLIB	92084-12016	2226
%$CNFG	92084-12011	2340
%$DVTB	12792-16005	2340
%$DVTN	12792-16009	2340
%$LDR	92084-12013	2226
%$TA32	92067-16507	2001
%$TB32	92067-16509	2001
%$TM33	92084-16652	2301
%0DV05	92001-16028	2140
%4AUTR	92067-16118	2340
%4DP43	92067-16004	1926
%4PVMP	92067-16001	1805
%6DA37	92084-16593	2340
%6DV37	92084-16592	2340
%6MTM	92084-12029	2121
%ACCTS	92067-16361	2340
%ATRAN	92059-16013	2226
%BMPG1	92084-12003	2340
%BMPG2	92084-12014	2340
%BMPG3	92084-12004	2340
%CI	92077-16445	2340
%CISU6	92084-16945	2340
%CIX	92077-16651	2340
%CLOAD	92084-16525	2121
%CLSDS	92077-16463	2326
%CMD	92084-12030	2121
%COMM	92084-16915	2212
%COMPL	92084-16524	2121
%CR6S1	92084-12024	2340
%CR6S2	92084-12025	2340
%CR6S3	92084-12026	2340
%CSERR	92084-12054	2121
%D.RTR	92077-16455	2340
%DBUGR	92084-12019	2121
%DDV05	12792-16003	2340

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%DDV12	12792-16004	2140
%DECAR	24306-60001	2340
%DL	92077-16447	2340
%DRREL	92084-12009	2226
%DRRPL	92084-12010	2121
%DSCHD	09580-16126	A
%DSRTR	92077-16462	2340
%DVA05	92084-16607	2121
%DVA12	92001-16020	1826
%DVA13	91200-16001	1648
%DVA32	92084-16708	2340
%DVB12	92062-16004	2340
%DVC12	92068-16110	2340
%DVC32	92084-16709	2340
%DVM00	12792-16002	2301
%DVM33	92084-16650	2302
%DVM72	09580-16079	2340
%DVN00	12792-16008	2301
%DVN33	92084-16651	2302
%DVP32	92084-16710	2340
%DVR00	92084-16637	2301
%DVR12	29028-60002	1805
%DVR23	92202-16001	2340
%DVR31	92084-16712	2121
%DVR32	92084-16711	2340
%DVR33	92084-16713	2121
%E.FFP	92084-16951	2340
%EDI6R	92084-16395	2140
%EDITA	92074-12001	2340
%EDITB	92074-12002	2340
%F.FFP	92084-16952	2340
%F.FPB	92084-16953	2340
%F.SIS	92084-16954	2340
%F.VIS	92084-16955	2340
%FC0	92084-12056	2340
%FC1	92084-12057	2340
%FC2	92084-12058	2340
%FC3	92084-12059	2340
%FC4	92084-12060	2340
%FC5	92084-12065	2340
%FC6	92084-12066	2340
%FCM6	92084-12055	2340
%FORMC	92084-16827	2302
%FORMT	92067-16554	2040
%FOWN	92077-16449	2326
%FPACK	92077-16451	2326
%FREES	92077-16450	2326
%FSCON	92077-16453	2326
%FVERI	92077-16454	2340
%GENIX	92084-12031	2121

%HELP	92084-12032	2121
%INDXR	92084-12006	2121
%KEYS	92060-16052	2340
%KYDMP	92060-16053	2340
%LGTAT	92084-16166	2301
%LI	92077-16646	2340
%LIF	24998-12006	2301
%LINDX	92077-12026	2340
%LINKA	92084-12070	2340
%LINKB	92084-16946	2340
%LINKC	92084-16947	2340
%LINKD	92084-16948	2340
%LINKE	92084-16949	2340
%LP31	92062-16003	1805
%LUPRN	92068-16125	2326
%M.FFP	92084-16950	2340
%M.LIB	92084-16362	2226
%MACR0	92059-16015	2340
%MACR1	92059-16016	2340
%MACR2	92059-16017	2340
%MACR3	92059-16018	2340
%MACR4	92059-16019	2340
%MACR5	92059-16020	2340
%MACR6	92059-16021	2340
%MACR7	92059-16022	2340
%MACRO	92059-16014	2340
%MERGE	92077-16431	2340
%MLLDA	92084-12064	2226
%MLLDB	92084-12063	2226
%MLLDR	92084-16361	2226
%MSAFD	92064-16086	2001
%NSESN	92084-12023	2121
%OLDRE	92059-16010	2226
%PCOPY	92084-16655	2121
%PRSTR	92084-16657	2302
%PSAVE	92084-16656	2302
%PSPAR	92084-16700	2301
%PVM00	12792-16001	2032
%READR	92068-16054	2240
%READT	92084-16568	2226
%RT6GN	92084-12007	2340
%RT60S	92084-16957	2340
%RT6VM	92084-16956	2340
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%SMON1	92084-12021	2340
%SMON2	92084-12022	2121
%SPOL1	92084-12027	2121
%SPOL2	92084-12028	2340

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%SSTCH	92084-12008	2340
%SXREF	92084-12017	2121
%T5IDM	92084-16528	2208
%TF	92077-16598	2340
%TRFAS	92077-16461	2326
%TVLIB	91200-16002	1648
%TVVER	91200-16004	1648
%VMACK	92084-16423	2121
%WHZAT	92084-16526	2340
%WRITT	92084-16569	2301
&$CMND	92084-18463	2121
&$TA32	92067-18507	2001
&$TB32	92067-18509	2001
&$TM33	92084-18652	2301
&4AUTR	92067-18456	2340
&C*TAB	92084-18135	2340
&D.BUF	92084-18394	2121
*BCKCT	92084-17158	2212
*BCKMT	92084-17156	2212
*COHLP	92084-17263	2340
*INCI	92084-17262	2340
*LODCI	92084-17261	2340
*PBULD	92084-17157	2121
=AVL2	92084-16943	2340
=EXT	92084-16941	2340
=FLAG	92084-16942	2340
=FPORT	92084-16944	2340
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=PRERS	92833-16053	2226
=SHSLB	92833-16052	2326
???	92077-17099	2326
?AG	92084-17213	2340
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?CI	92077-17045	2326
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?CN	92084-17217	2340
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?CRDIR	92077-17056	2326
?CU	92084-17218	2340
?DC	92077-17057	2326
?DL	92077-17058	2340
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?EX	92084-17222	2340
?FOWN	92077-17063	2326

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?FPACK	92084-17223	2340	
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?FVERI	92077-17064	2326	
?GO	92084-17224	2340	
?HE	92084-17225	2340	
?IN	92084-17226	2340	
?IT	92084-17227	2340	
?LI	92077-17069	2326	
?LINDX	92084-17228	2340	
?LINK	92084-17229	2340	
?LU	92084-17230	2340	
?MACRO	92059-17003	2326	
?MASK	92084-17231	2340	
?MC	92084-17232	2340	
?MERGE	92077-17073	2340	
?MO	92077-17074	2326	
?OF	92084-17233	2340	
?ON	92084-17234	2340	
?OWNER	92084-17235	2340	
?PR	92084-17236	2340	
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?QU	92084-17238	2340	
?RN	92077-17082	2326	
?RP	92084-17239	2340	
?RU	92084-17240	2340	
?SL	92084-17241	2340	
?SS	92084-17242	2340	
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?SZ	92084-17244	2340	
?TI	92084-17245	2340	
?TM	92084-17246	2340	
?TO	92084-17247	2340	
?TR	92077-17090	2326	
?UL	92084-17248	2340	
?UNPU	92077-17092	2326	
?UP	92084-17249	2340	
?UR	92084-17250	2340	
?VS	92077-17094	2326	
?WD	92077-17095	2340	
?WH	92084-17251	2340	
?WS	92084-17252	2340	
?XQ	92077-17098	2340	
A92084	92084-17999	2340	
* FORMT	92084-16737		--> 2301
* PCOPY	92084-16740		--> 2301
* PRSTR	92084-16739		--> 2301
* PSAVE	92084-16741		--> 2301
* PSPAR	92084-16738		--> 2301
SEP.6	92084-17205	2340	

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Manual Part#           Title                          Type of Update
------------+-------------------------------------+--------------
92084-90007  RTE-6/VM Utility Manual                 Update 1


Media  Part#    Media Option
-------------+---------------
    (no media changes)
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3.43   (92091A)   HPSPICE

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Filename            Part Number  Rev
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#SIMIN              92091-17007  2201
#SIMSP              92091-17001  2326
#SPICE              92091-17002  2201
#SPIIN              92091-17008  2201
#SYNIN              92091-17009  2201
#SYNTX              92091-17003  2201
%ACAN               92091-16007  2201
%COMMS              92091-16012  2201
%DCOP               92091-16006  2201
%DCTR1              92091-16005  2201
%DCTR2              92091-16022  2201
%ERRCD              92091-16014  2201
%ERRCK              92091-16003  2201
%GRAPH              92091-16016  2201
%HELPR              92091-16015  2201
%HPUTL              92091-16021  2201
%OVTPT              92091-16008  2201
%PARSR              92091-16013  2240
%READN              92091-16002  2201
%SETUP              92091-16004  2201
%SIMSP              92091-16001  2201
%SPICE              92091-16011  2326
%SYNTX              92091-16020  2201
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VERIF   92091-17004 2201

3.44   (92101A)   Basic/1000D

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#RTETG	92101-17002	2140
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%BAMLB	92101-12002	2140
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%BATG3	92101-16024	2013
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%BATGN	92101-16008	2013
%BBUFF	92101-16034	2140
%DTRAP	92101-16035	2140
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3.45   + (92130A)   QDM/1000

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*	#MANRD	92130-17089	New	--> 2303
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*	#PDGEN	92130-17123	New	--> 2340

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* <RD210	92130-17174	New	-->	2303
* <RD211	92130-17196	New	-->	2303
* <RD220	92130-17166	New	-->	2303
* <RD221	92130-17198	New	-->	2303
* <RD230	92130-17162	New	-->	2303
* <RD231	92130-17197	New	-->	2303
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* <RD250	92130-17206	New	-->	2303
* <SD010	92130-17124	New	-->	2303
* <SD011	92130-17125	New	-->	2303
* <SD020	92130-17126	New	-->	2303
* <SD030	92130-17127	New	-->	2303
* <SU010	92130-17095	New	-->	2303

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*  <SU011                  92130-17096   New   --> 2303
*  <SU020                  92130-17097   New   --> 2303
*  <SU021                  92130-17098   New   --> 2303
*  <SU030                  92130-17099   New   --> 2303
*  <SU031                  92130-17100   New   --> 2303
*  A92130                  92130-17999   New   --> 2340
*  CAFQ03                  92130-17249   New   --> 2303
*  CPFQ01                  92130-17250   New   --> 2303
*  HECEAV                  92130-17290   New   --> 2303
*  HECHID                  92130-17286   New   --> 2303
*  HECHUN                  92130-17289   New   --> 2303
*  HECHVL                  92130-17295   New   --> 2303
*  HECMAV                  92130-17291   New   --> 2303
*  HECOMM                  92130-17306   New   --> 2303
*  HEDEFW                  92130-17221   New   --> 2303
*  HEIDLN                  92130-17285   New   --> 2303
*  HEIDLS                  92130-17287   New   --> 2303
*  HEIDS                   92130-17219   New   --> 2303
*  HELINE                  92130-17288   New   --> 2303
*  HELNCH                  92130-17294   New   --> 2303
*  HELNCM                  92130-17292   New   --> 2303
*  HELNPA                  92130-17296   New   --> 2303
*  HELNPG                  92130-17293   New   --> 2303
*  HELP2D                  92130-17244   New   --> 2303
*  HELP2X                  92130-17243   New   --> 2303
*  HELPDL                  92130-17242   New   --> 2303
*  HELPXX                  92130-17241   New   --> 2303
*  HEMODH                  92130-17305   New   --> 2303
*  HEOPNM                  92130-17217   New   --> 2303
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*  HEPA2X                  92130-17299   New   --> 2303
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*  HEPAXX                  92130-17297   New   --> 2303
*  HEPB2D                  92130-17304   New   --> 2303
*  HEPB2X                  92130-17300   New   --> 2303
*  HEPBDL                  92130-17302   New   --> 2303
*  HEPBXX                  92130-17298   New   --> 2303
*  HEPROC                  92130-17215   New   --> 2303
*  HESTAN                  92130-17218   New   --> 2303
*  HESTEP                  92130-17216   New   --> 2303
*  HEUNIT                  92130-17222   New   --> 2303
*  HEVALU                  92130-17223   New   --> 2303
*  HEWAT1                  92130-17284   New   --> 2303
*  HEWATS                  92130-17220   New   --> 2303
*  HI.MGR                  92130-17315   New   --> 2303
*  PISENF                  92130-17320   New   --> 2303
*  Q1PANS                  92130-17282   New   --> 2340
*  Q1PLST                  92130-17283   New   --> 2340
*  QDSLUS                  92130-17325   New   --> 2303
*  QDSSPM                  92130-17324   New   --> 2303
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*  QDSSPW                    92130-17323  New   --> 2303
*  QDSSYS                    92130-17322  New   --> 2303
*  RMLOG                     92130-17321  New   --> 2303
*  RPCNTL                    92130-17237  New   --> 2303
*  RPHIST                    92130-17234  New   --> 2303
*  RPPCHT                    92130-17238  New   --> 2303
*  RPSCAT                    92130-17236  New   --> 2303
*  RPTAB                     92130-17235  New   --> 2303
*  RPTRCK                    92130-17239  New   --> 2303
*  SKBD01                    92130-17245  New   --> 2303
*  SKBD02                    92130-17246  New   --> 2303
*  SKBD03                    92130-17247  New   --> 2303
*  SKED01                    92130-17248  New   --> 2303
*  SPFQ02                    92130-17313  New   --> 2303
*  SPFQ03                    92130-17251  New   --> 2303
*  SYNEWS                    92130-17314  New   --> 2303
*  WELCOM                    92130-17233  New   --> 2303
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Manual Part#           Title                                   Type of Update
------------+------------------------------------------+---------------
    (no manual changes)
```

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Media  Part#     Media Option
-------------+---------------
92130-13301        022
92130-13303        022
92130-13501        050
92130-13504        050
92130-13502        051
92130-13505        051
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3.46   (92400A)   DAS Utility Library

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Filename              Part Number  Rev
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%BMEP                 09610-60025  B
%CDCOV                92404-60001  A
%CURFT                92405-60001  A
%HSRP                 92400-16001  2001
%HUMID                92402-60001  A
%INGRA                92407-60001  A
%INTER                92406-60001  A
%STANA                92403-60001  A
%THLIN                92401-60001  A
&BMEP                 09610-80025
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&CDCOV               92404-80001
&CURFT               92405-80001
&HSRP                92400-18001
&HUMID               92402-80001
&INGRA               92407-80001
&INTER               92406-80001
&STANA               92403-80001
&THLIN               92401-80001
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3.47   (92425C)   MTIS (ATS/1000)

Filename	Part Number	Rev
$TRPL5	92425-12001	2001
%ALLO5	92425-16059	2001
%CNFG5	92425-16063	2001
%DALO5	92425-16060	2001
%DRTX5	92425-16062	2001
%DTSX5	92425-16045	2001
%ERROR	09580-16021	A
%GTCX5	92425-16049	2001
%IBCF5	92425-16056	2001
%IBLU5	92425-16050	2001
%ISN5	92425-16043	2001
%LU2S5	92425-16052	2001
%LUDV5	92425-16051	2001
%STAR5	92425-16047	2001
%TIM5	92425-16064	2001
&DRTX5	92425-18062	2001
&DVIN5	92425-18061	2001
&TRTB5	92425-18069	2001
*BUIL5	92425-18053	2001
/DIR	92425-18071	2001
C92425	92425-18999	2001

3.48   (92427A)   Device Subroutine Library

Filename	Part Number	Rev
$F2A2F	92427-12001	2140
%AAASC	09580-16501	2126
%AARED	09580-16500	2126
%AASRC	09580-16497	2126
%AASRM	09580-16499	2126

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%AASWP	09580-16498	2126
%AC1	09580-16043	1840
%ACP	09580-16011	2001
%ACPS1	09580-16430	2126
%ACSEN	09580-16429	2001
%ACVSD	09580-16030	1840
%ADCSU	09580-16009	2026
%ANAGN	09580-16465	2026
%ANAME	09580-16467	2026
%ANARD	09580-16468	2026
%ANASU	09580-16464	2026
%ANASW	09580-16466	2026
%ARMF	09580-16017	2140
%ATTN	09580-16564	2226
%C45HF	09580-16460	2026
%C45IM	09580-16413	2001
%C45MF	09580-16463	2026
%C45OF	09580-16462	2026
%C45RD	09580-16290	2026
%C45SU	09580-16289	2026
%CDDL	09580-16578	2240
%CDPS	09580-16591	2240
%CDRY	09580-16577	2240
%CDSM	09580-16579	2240
%CDTU	09580-16139	1840
%CHANC	09580-16291	1840
%CHNAB	09580-16016	2140
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%CTRIM	09580-16129	2126
%CTRLF	09580-16013	2140
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%CTRST	09580-16131	2013
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%DCCDA	09580-16286	1840
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%DCPSV	09580-16163	1840
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%DCVDA	09580-16285	1840
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%DCVSH	09580-16038	2001
%DCVSL	09580-16039	2001
%DCWDA	09580-16538	2226
%DGNLD	09580-16450	2001
%DGTST	09570-16482	1830
%DIGIN	09580-16427	1926
%DIGOT	09580-16287	1840

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%DMMAS	09580-16528	2140
%DMMCL	09580-16523	2140
%DMMMU	09580-16526	2140
%DMMSA	09580-16525	2140
%DMMSU	09580-16524	2140
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%DSVSU	09580-16136	2001
%DTUTO	09580-16150	1840
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%DVMMU	09580-16041	1840
%DVMRE	09580-16132	1840
%DVMST	09580-16133	1926
%DVMSU	09580-16042	1840
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%FPSWL	09580-16146	1840
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%GPRIO	09580-16316	2013
%GRTST	09580-16010	2001
%GTRNG	09580-16036	1840
%HFGMY	09580-16370	1926
%HFGSU	09580-16369	1926
%IBGSC	09580-16452	2001
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%MODAS	09580-16515	2126
%MODES	09580-16015	2140
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%MSAS	09580-16563	2226
%MSCAL	09580-16553	2226
%MSCTL	09580-16561	2226
%MSDGA	09580-16581	2226

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%MSDGV	09580-16587	2226
%MSDGX	09580-16585	2226
%MSDL	09580-16548	2226
%MSDLT	09580-16562	2226
%MSHP	09580-16546	2226
%MSIN	09580-16544	2226
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%MSMD	09580-16549	2226
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%RRFFT	09580-16469	2101
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%SDLY	09580-16140	1840
%SETHI	09580-16151	1840
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%SFFUN	09580-16314	2126
%SFGEN	09580-16310	2226
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%SFGMY	09580-16309	2101
%SFMWC	09580-16449	2001
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%SGNLS	09580-16299	1926
%SGNMD	09580-16300	1926
%SGNMY	09580-16301	1840
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%SLFRQ	09580-16569	2240
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%SSGMK	09580-16506	2126
%SSGOF	09580-16503	2126
%SSGSW	09580-16505	2126
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%SWCID	09580-16048	2126
%SWCON	09580-16056	2126
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%SWSET	09580-16144	1840

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%SWTST	09580-16051	2126
%SWVHF	09580-16575	2240
%TIMRD	09580-16322	1926
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%TSYFM	09580-16453	2026
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%TSYSD	09580-16457	2001
%TSYSM	09580-16454	2001
%TSYTL	09580-16459	2001
%TSYTM	09580-16455	2001
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%UCFUN	09580-16537	2140
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%UCTRG	09580-16536	2140
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%XPSWL	09570-16557	1830
%XSCTL	09570-16559	1830
%XSERN	09570-16560	2001
%XSTAT	09570-16562	1830
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&AC1	09580-18043	1840

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&ACPS1	09580-18430	2126
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&ANAGN	09580-18465	2026
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&CHNAB	09580-18016	2140
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&DCVSH	09580-18038	2001
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&DIGIN	09580-18427	1926
&DIGOT	09580-18287	1840
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&FPSWL	09580-18146	1840
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&GRTST	09580-18010	2001
&GTRNG	09580-18036	1840
&HFGMY	09580-18370	1926
&HFGSU	09580-18369	1926
&IBGSC	09580-18452	2001
&INIT	09580-18141	1840
&ISWRP	09580-18014	2126
&LCRAS	09580-18522	2140
&LCRBS	09580-18518	2140
&LCRED	09580-18521	2240
&LCRFR	09580-18519	2140
&LCRMD	09580-18520	2140
&LCRMP	09580-18516	2140
&LCRSW	09580-18517	2140
&LETED	09580-18037	1840
&MATSW	09580-18052	1840
&MODAN	09580-18481	2126
&MODAS	09580-18515	2126
&MODES	09580-18015	2140
&MODSW	09580-18046	1840
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&MPGSC	09580-18288	1840
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&MSAS	09580-18563	2226
&MSCAL	09580-18553	2226
&MSCTL	09580-18561	2226
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&MSDGC	09580-18583	2226
&MSDGD	09580-18584	2226

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&MSDGF	09580-18580	2226
&MSDGI	09580-18589	2226
&MSDGO	09580-18588	2226
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&MSDGS	09580-18586	2226
&MSDGV	09580-18587	2226
&MSDGX	09580-18585	2226
&MSDL	09580-18548	2226
&MSDLT	09580-18562	2226
&MSHP	09580-18546	2226
&MSIN	09580-18544	2226
&MSINT	09580-18550	2226
&MSKEY	09580-18552	2226
&MSMD	09580-18549	2226
&MSRD	09580-18547	2226
&MSST	09580-18545	2226
&MSSWP	09580-18555	2226
&MSTF	09580-18559	2226
&MSTG	09580-18560	2226
&MSTXT	09580-18551	2226
&MSVI	09580-18557	2226
&MSVM	09580-18558	2226
&MSVP	09580-18556	2226
&MUXSW	09580-18053	1840
&NASU	09580-18270	1926
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&PGNSD	09580-18033	1840
&PGNSR	09580-18034	1840
&PGNSS	09580-18035	1840
&PINIT	09580-18153	1840
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&PPGMY	09580-18304	1926
&PPGOM	09580-18306	1926
&PPGSS	09580-18307	1926
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&PROIC	09580-18567	2226
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&PSP	09580-18031	1840
&PSPRG	09580-18319	1926
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&PWMMU	09580-18235	1840
&PWMSU	09580-18234	1840
&RASW	09580-18368	2001
&RCONF	09580-18149	1840
&RESIS	09580-18470	2101
&RFMOD	09580-18278	1840
&RFOSM	09580-18280	1840

&RFOSO	09580-18279	2001
&RFSU	09580-18277	1926
&RLCDM	09580-18276	1840
&RLCMU	09580-18268	2101
&RLCSU	09580-18267	1840
&RLCTM	09580-18275	1840
&RMSSU	09580-18294	2026
&RRFFT	09580-18469	2101
&RSTAT	09580-18142	1840
&RTX1	09580-18164	1840
&S3330	09580-18269	1840
&SCANC	09580-18055	1840
&SCAND	09580-18054	1840
&SCNSU	09580-18359	2001
&SDLY	09580-18140	1840
&SETHI	09580-18151	1840
&SETLU	09570-18528	
&SFAMP	09580-18311	2001
&SFFUN	09580-18314	2126
&SFGEN	09580-18310	2226
&SFGMD	09580-18312	1926
&SFGMY	09580-18309	2101
&SFMWC	09580-18449	2001
&SGNBU	09580-18302	1840
&SGNLS	09580-18299	1926
&SGNMD	09580-18300	1926
&SGNMY	09580-18301	1840
&SGNSU	09580-18298	2126
&SGNSW	09580-18303	1840
&SLAMP	09580-18570	2240
&SLFRQ	09580-18569	2240
&SLFUN	09580-18573	2240
&SLSTR	09580-18572	2240
&SLSWP	09580-18571	2240
&SSGAS	09580-18508	2126
&SSGFA	09580-18502	2126
&SSGMD	09580-18504	2126
&SSGMK	09580-18506	2126
&SSGOF	09580-18503	2126
&SSGSW	09580-18505	2126
&STGET	09580-18443	2013
&STREF	09580-18143	1840
&SWAID	09580-18050	2126
&SWCID	09580-18048	2126
&SWCON	09580-18056	2126
&SWFRQ	09580-18426	1926
&SWMAP	09580-18049	2126
&SWSET	09580-18144	1840
&SWTST	09580-18051	2126
&SWVHF	09580-18575	2240

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&TIMRD	09580-18322	1926
&TIMRS	09580-18321	1926
&TIPRB	09580-18292	1840
&TRIGF	09580-18018	2140
&TSASU	09580-18323	2013
&TSYCL	09580-18458	2001
&TSYFM	09580-18453	2026
&TSYOM	09580-18456	2026
&TSYSD	09580-18457	2001
&TSYSM	09580-18454	2001
&TSYTL	09580-18459	2001
&TSYTM	09580-18455	2001
&UCDSP	09580-18529	2140
&UCFUN	09580-18537	2140
&UCGAT	09580-18530	2226
&UCINP	09580-18531	2140
&UCMAT	09580-18532	2140
&UCRED	09580-18533	2226
&UCSPC	09580-18534	2226
&UCSTT	09580-18535	2140
&UCTRG	09580-18536	2140
&VARPG	09580-18308	1926
&VHFSW	09580-18047	1840
&VVM	09580-18272	1840
&WAVSA	09580-18318	2001
&WAVSU	09580-18317	2101
&WTEK	09580-18232	1840
&WTKLS	09580-18233	1840
&XCONF	09570-18547	A
&XDLY	09570-18548	B
&XDTU	09570-18549	B
&XNIT	09570-18551	A
&XPREF	09570-18555	A
&XPSUP	09570-18556	A
&XPSWL	09570-18557	A
&XSCTL	09570-18559	A
&XSERN	09570-18560	D
&XSTAT	09570-18562	A
&XTREF	09570-18563	1826
&XTUTO	09570-18568	A
&XULSE	09570-18569	B
&XWSET	09570-18572	A
A92427	92427-18999	2240

3.49   (92832A)   Pascal/1000 (RTE-IVB)

Filename	Part Number	Rev
"PERRS	92832-18511	2101
#PASCL	92832-18503	2101
#PCLF	92832-18505	2101
#PCLM	92832-18507	2101
#XREF1	92832-18513	2101
#XREF2	92832-18515	2101
$PLIB	92832-16700	2101
$SHSLB	92832-16701	2101
%..GER	92832-16302	2101
%FFRC	92832-16603	2101
%MAN	92832-16602	2101
%MFRC	92832-16604	2101
%MSC01	92832-16601	2101
%PASCL	92832-16070	2101
%PRERS	92832-16301	2101
%PSG01	92832-16600	2101
%TRACA	92832-16305	2101
%TRACB	92832-16310	2101
%TRACC	92832-16315	2101
%XREF1	92832-16800	2101
%XREF2	92832-16810	2101
**MSC	92832-18522	2101
**PSG	92832-18521	2101
*LDPAS	92832-18502	2101
*LDXF1	92832-18512	2101
*LDXF2	92832-18514	2101
*LOAD	92832-18501	2101
*OFPCL	92832-18510	2101
*OFXRF	92832-18518	2101
*PCLF	92832-18504	2101
*PCLM	92832-18506	2101
*PUPCL	92832-18509	2101
*PUXRF	92832-18517	2101
*SPPCL	92832-18508	2101
*SPXRF	92832-18516	2101
*UNL.C	92832-18519	2101
*UNL.T	92832-18520	2101
*UNLOA	92832-18500	2015
A92832	92832-18999	2101

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3.50   + (92833A)   Pascal/1000 (RTE-6/VM, RTE-A)

	Filename	Part Number	Rev	Change
*	"PERRS	92833-17018	2144	--> Deleted
*	#PCL	92833-17005	2340	--> Deleted
*	$ALB	92833-16059	2326	--> Deleted
*	$FMP	92833-16056	2326	--> Deleted
*	$NFS	92833-16057	2326	--> Deleted
*	$PLIB	92833-16005	2326	--> Deleted
*	$PLIBN	92833-16054	2326	--> Deleted
*	$SHSLB	92833-16006	2326	--> Deleted
*	$THUNK	92833-16060	2326	--> Deleted
*	$ULB	92833-16055	2326	--> Deleted
*	%ALTER	92833-16002	2144	--> Deleted
*	%CAT	92833-16013	2326	--> Deleted
*	%DCL	92833-16036	2326	--> Deleted
*	%ERR	92833-16034	2326	--> Deleted
*	%EV1	92833-16044	2326	--> Deleted
*	%EV2	92833-16045	2326	--> Deleted
*	%EV3	92833-16046	2326	--> Deleted
*	%EXP	92833-16041	2326	--> Deleted
*	%FORCE	92833-16015	2340	--> Deleted
*	%INT	92833-16035	2326	--> Deleted
*	%LOCK	92833-16016	2144	--> Deleted
*	%MAN	92833-16012	2340	--> Deleted
*	%OPT	92833-16032	2326	--> Deleted
*	%PASCL	92833-16001	2326	--> Deleted
*	%PASN	92833-16058	2340	--> Deleted
*	%PRERS	92833-16007	2226	--> Deleted
*	%PRG	92833-16038	2326	--> Deleted
*	%SCN	92833-16033	2326	--> Deleted
*	%SEGA1	92833-16050	2144	--> Deleted
*	%SG00P	92833-16021	2326	--> Deleted
*	%SG01P	92833-16022	2326	--> Deleted
*	%SG02P	92833-16023	2326	--> Deleted
*	%SG03P	92833-16024	2326	--> Deleted
*	%SG04P	92833-16025	2326	--> Deleted
*	%SG05P	92833-16026	2326	--> Deleted
*	%SG06P	92833-16027	2326	--> Deleted
*	%SG07P	92833-16028	2326	--> Deleted
*	%SG08P	92833-16029	2326	--> Deleted
*	%SG09P	92833-16030	2326	--> Deleted
*	%SG10P	92833-16031	2326	--> Deleted
*	%STD	92833-16042	2326	--> Deleted
*	%STM	92833-16040	2326	--> Deleted

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```
 *  %SWAP                92833-16017   2144   --> Deleted
 *  %TRACA               92833-16008   2144   --> Deleted
 *  %TRACB               92833-16009   2144   --> Deleted
 *  %TRACC               92833-16010   2144   --> Deleted
 *  %UNT                 92833-16037   2326   --> Deleted
 *  %UTL                 92833-16039   2326   --> Deleted
 *  %VMSEG               92833-16014   2144   --> Deleted
 *  %XFM                 92833-16043   2340   --> Deleted
 *  %XREF1               92833-16003   2144   --> Deleted
 *  %XREF2               92833-16004   2144   --> Deleted
 *  )ALTER               92833-17019   2326   --> Deleted
 *  *LOAD                92833-17001   2326   --> Deleted
 *  *LOADF               92833-17020   2326   --> Deleted
 *  =PLIB                92833-16051   2326   --> Deleted
 *  =PRERS               92833-16053   2226   --> Deleted
 *  =SHSLB               92833-16052   2326   --> Deleted

    Path: /PASCAL/
 *  A92833               92833-17998   New    --> 2401
 *  A92833               92833-17999   2340   --> Deleted
 *  CONFIG_GUIDE.DOC     92833-17085   New    --> 2401

    Path: /PASCAL/CMP/
 *  ALB.REL              92833-16061   New    --> 2401
 *  CDSOF.REL            92833-16063   New    --> 2401
 *  CDSON.REL            92833-16064   New    --> 2401
 *  DCT.REL              92833-16067   New    --> 2401
 *  PASCAL.ERR           92833-17021   New    --> 2401

    Path: /PASCAL/INSTALL/
 *  CONFIG_CMP           92833-17073   New    --> 2401
 *  INSTALL              92833-17071   New    --> 2401
 *  INSTALL_ALTER        92833-17083   New    --> 2401
 *  INSTALL_ALT_LIBS     92833-17089   New    --> 2401
 *  INSTALL_CDS_LIBS     92833-17087   New    --> 2401
 *  INSTALL_CMP          92833-17074   New    --> 2401
 *  INSTALL_ERR_FILE     92833-17090   New    --> 2401
 *  INSTALL_FMGR_LIBS    92833-17088   New    --> 2401
 *  INSTALL_LIBS         92833-17072   New    --> 2401
 *  INSTALL_STD_LIBS     92833-17086   New    --> 2401
 *  LINKSZ.LOD           92833-17098   New    --> 2401
 *  RESTORE_ALTER        92833-17094   New    --> 2401
 *  RESTORE_CDS_CMP      92833-17093   New    --> 2401
 *  RESTORE_LIBS         92833-17091   New    --> 2401
 *  RESTORE_STD_CMP      92833-17092   New    --> 2401
 *  SAMPLE.PAS           92833-17062   New    --> 2401
 *  SIZE_UP_LINK_6       92833-17097   New    --> 2401
 *  SIZE_UP_LINK_A       92833-17096   New    --> 2401
 *  SIZE_UP_LINK_C       92833-17095   New    --> 2401
 *  TEST_CDS             92833-17076   New    --> 2401
```

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```
*  TEST_STD                 92833-17075   New    --> 2401

   Path: /PASCAL/CMP/CDS/
*  CAT.REL                  92833-16171   New    --> 2401
*  DBG.REL                  92833-16172   New    --> 2401
*  DCL.REL                  92833-16173   New    --> 2401
*  DLB.REL                  92833-16174   New    --> 2401
*  ELB.REL                  92833-16175   New    --> 2401
*  ERW.REL                  92833-16176   New    --> 2401
*  EV1.REL                  92833-16177   New    --> 2401
*  EV2.REL                  92833-16178   New    --> 2401
*  EV3.REL                  92833-16179   New    --> 2401
*  EV4.REL                  92833-16180   New    --> 2401
*  EV5.REL                  92833-16181   New    --> 2401
*  EXP.REL                  92833-16182   New    --> 2401
*  FLD.REL                  92833-16183   New    --> 2401
*  INSTALL_C                92833-17077   New    --> 2401
*  INT.REL                  92833-16184   New    --> 2401
*  MAN.REL                  92833-16185   New    --> 2401
*  MEX.REL                  92833-16186   New    --> 2401
*  MIM.REL                  92833-16187   New    --> 2401
*  MNU.REL                  92833-16188   New    --> 2401
*  NFS.REL                  92833-16189   New    --> 2401
*  OPT.REL                  92833-16190   New    --> 2401
*  PASCAL.REL               92833-16191   New    --> 2401
*  PASCAL_C.LOD             92833-17048   New    --> 2401
*  PASCOMP_C.LOD            92833-17045   New    --> 2401
*  PRG.REL                  92833-16192   New    --> 2401
*  SAMER.REL                92833-16208   New    --> 2401
*  SCN.REL                  92833-16193   New    --> 2401
*  SG00P.REL                92833-16194   New    --> 2401
*  SG01P.REL                92833-16195   New    --> 2401
*  SLB.REL                  92833-16196   New    --> 2401
*  SSL.REL                  92833-16197   New    --> 2401
*  STF.REL                  92833-16198   New    --> 2401
*  STM.REL                  92833-16199   New    --> 2401
*  STP.REL                  92833-16200   New    --> 2401
*  SUM.REL                  92833-16226   New    --> 2401
*  TLM.REL                  92833-16201   New    --> 2401
*  ULB.REL                  92833-16202   New    --> 2401
*  UNT.REL                  92833-16203   New    --> 2401
*  UTL.REL                  92833-16204   New    --> 2401
*  XFM.REL                  92833-16205   New    --> 2401

   Path: /PASCAL/CMP/STD/
*  CAT.REL                  92833-16062   New    --> 2401
*  DBG.REL                  92833-16065   New    --> 2401
*  DCL.REL                  92833-16066   New    --> 2401
*  DCV.REL                  92833-16227   New    --> 2401
*  ERW.REL                  92833-16071   New    --> 2401
```

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```
* ETC.LIB          92833-16223   New   --> 2401
* EV1.REL          92833-16072   New   --> 2401
* EV2.REL          92833-16073   New   --> 2401
* EV3.REL          92833-16074   New   --> 2401
* EV4.REL          92833-16075   New   --> 2401
* EV5.REL          92833-16076   New   --> 2401
* EXP.REL          92833-16077   New   --> 2401
* FCB.REL          92833-16137   New   --> 2401
* FDUBL.REL        92833-16069   New   --> 2401
* FLD.REL          92833-16078   New   --> 2401
* FORCE.REL        92833-16131   New   --> 2401
* GO.REL           92833-16132   New   --> 2401
* INSTALL_6        92833-17079   New   --> 2401
* INSTALL_A        92833-17078   New   --> 2401
* INT.REL          92833-16079   New   --> 2401
* MAN.REL          92833-16080   New   --> 2401
* MEU.REL          92833-16133   New   --> 2401
* MEX.REL          92833-16081   New   --> 2401
* MIM.REL          92833-16082   New   --> 2401
* MSC.LIB          92833-16134   New   --> 2401
* NOTEL.REL        92833-16135   New   --> 2401
* NUM.REL          92833-16136   New   --> 2401
* OPT.REL          92833-16085   New   --> 2401
* PASCAL.REL       92833-16103   New   --> 2401
* PASCAL_6.LOD     92833-17047   New   --> 2401
* PASCAL_A.LOD     92833-17046   New   --> 2401
* PASCOMP_6.LOD    92833-17033   New   --> 2401
* PASCOMP_A.LOD    92833-17032   New   --> 2401
* PASS.LIB         92833-16138   New   --> 2401
* PCIOF.REL        92833-16140   New   --> 2401
* PCIOR.REL        92833-16139   New   --> 2401
* PICK.LIB         92833-16141   New   --> 2401
* PRG.REL          92833-16086   New   --> 2401
* SAM6.REL         92833-16142   New   --> 2401
* SAMA.REL         92833-16143   New   --> 2401
* SAMER.REL        92833-16207   New   --> 2401
* SCN.REL          92833-16087   New   --> 2401
* SEGTB.REL        92833-16144   New   --> 2401
* SG00P.REL        92833-16088   New   --> 2401
* SG01P.REL        92833-16089   New   --> 2401
* SG02P.REL        92833-16145   New   --> 2401
* SG03P.REL        92833-16146   New   --> 2401
* SG04P.REL        92833-16147   New   --> 2401
* SG05P.REL        92833-16148   New   --> 2401
* SG06P.REL        92833-16149   New   --> 2401
* SG07P.REL        92833-16150   New   --> 2401
* SG08P.REL        92833-16151   New   --> 2401
* SG09P.REL        92833-16152   New   --> 2401
* SG10P.REL        92833-16153   New   --> 2401
* SG11P.REL        92833-16154   New   --> 2401
```

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```
*  SG12P.REL              92833-16155   New    --> 2401
*  SG13P.REL              92833-16156   New    --> 2401
*  SG14P.REL              92833-16157   New    --> 2401
*  SG15P.REL              92833-16158   New    --> 2401
*  SG16P.REL              92833-16159   New    --> 2401
*  SG17P.REL              92833-16160   New    --> 2401
*  SG18P.REL              92833-16161   New    --> 2401
*  SG19P.REL              92833-16224   New    --> 2401
*  SSC.REL                92833-16163   New    --> 2401
*  STF.REL                92833-16092   New    --> 2401
*  STM.REL                92833-16093   New    --> 2401
*  STP.REL                92833-16094   New    --> 2401
*  SUM.REL                92833-16225   New    --> 2401
*  TLM.REL                92833-16095   New    --> 2401
*  TRACE.REL              92833-16164   New    --> 2401
*  TRACE1.REL             92833-16165   New    --> 2401
*  UNT.REL                92833-16097   New    --> 2401
*  UTL.REL                92833-16098   New    --> 2401
*  XFM.REL                92833-16099   New    --> 2401

   Path: /PASCAL/ETC/ALTER/
*  ALTER.DAT              92833-17049   New    --> 2401
*  ALTER.DOC              92833-17100   New    --> 2401
*  ALTER.LOD              92833-17050   New    --> 2401
*  ALTER.REL              92833-16209   New    --> 2401

   Path: /PASCAL/LIB/CDS/
*  PASCAL_CDS.LIB         92833-16104   New    --> 2401
*  PASCAL_CERR.REL        92833-16167   New    --> 2401
*  PASCAL_CTRA.REL        92833-16116   New    --> 2401

   Path: /PASCAL/LIB/STD/
*  PASCAL.LIB             92833-16113   New    --> 2401
*  PASCAL_ERR.REL         92833-16125   New    --> 2401
*  PASCAL_ERR_ALT.REL     92833-16222   New    --> 2401
*  PASCAL_FMGR.LIB        92833-16107   New    --> 2401
*  PASCAL_FMGR_ALT.LIB    92833-16210   New    --> 2401
*  PASCAL_LH2.REL         92833-16117   New    --> 2401
*  PASCAL_TRA.REL         92833-16168   New    --> 2401
*  PASCAL_TRB.REL         92833-16169   New    --> 2401
*  PASCAL_TRC.REL         92833-16170   New    --> 2401
*  SHSLB.LIB              92833-16220   New    --> 2401
*  SHSLB_ALT.LIB          92833-16221   New    --> 2401
```

Manual Part#	Title	Type of Update
92833-90001	PASCAL/1000 Reference Manual	Edition 2
5958-8110	Replace Pascal Library	

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```
Media   Part#      Media Option
-------------+---------------
92833-13320       022
92833-13481       041
92833-13482       041
92833-13483       041
92833-13484       041
92833-13485       041
92833-13431       042
92833-13432       042
92833-13433       042
92833-13434       042
92833-13435       042
92833-13436       042
92833-13437       042
92833-13438       042
92833-13439       042
92833-13440       042
92833-13441       042
92833-13442       042
92833-13443       042
92833-13444       042
92833-13445       042
92833-13446       042
92833-13447       042
92833-13448       042
92833-13449       042
92833-13461       044
92833-13462       044
92833-13463       044
92833-13464       044
92833-13465       044
92833-13466       044
92833-13467       044
92833-13468       044
92833-13469       044
92833-13470       044
92833-13471       044
92833-13472       044
92833-13473       044
92833-13474       044
92833-13475       044
92833-13476       044
92833-13477       044
92833-13478       044
92833-13479       044
92833-13511       050
92833-13512       051
```

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3.51   (92834A)   Fortran-4X

Filename	Part Number	Rev
"FTN4X	92834-17001	2226
#FTN4X	92834-17002	2226
$F4XCS	92834-12001	2303
%F4X1	92834-16002	2226
%F4X2	92834-16003	2303
A92834	92834-17999	2303

3.52   (92835A)   Signal/1000

Filename	Part Number	Rev
$HPFFT	92835-12001	
&CFFT	92835-18002	
&CFFT1	92835-18003	
&FFTRP	92835-18004	
&RFFT	92835-18001	
&S0.1	92835-18007	2140
&S0.2	92835-18008	2140
&S0.3	92835-18009	2140
&S0.4	92835-18010	
&S1.1	92835-18011	
&S1.2	92835-18012	2140
&S1.3	92835-18013	
&S1.4	92835-18014	2140
&S1.5	92835-18015	
&S1.5S	92835-18016	
&S1.6	92835-18017	
&S1.7	92835-18018	2140
&S1.8	92835-18019	
&S1.9E	92835-18021	
&S1.9M	92835-18020	
&S1.9S	92835-18022	
&S2.1	92835-18023	2140
&S2.2	92835-18024	2140
&S2.3	92835-18025	2140
&S3.1	92835-18027	2140
&S3.1T	92835-18026	
&S4.1	92835-18028	2140
&S4.2	92835-18029	

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&S4.3	92835-18030	2140
&S5.1	92835-18031	2140
&S5.2	92835-18032	
&S5.3	92835-18033	2140
&S5.4	92835-18034	2140
&S6.1	92835-18035	
&S6.11	92835-18036	2140
&S6.12	92835-18037	2140
&S6.13	92835-18038	2140
&S6.14	92835-18039	2140
&S6.15	92835-18040	2140
&S6.1S	92835-18041	2140
&S6.2	92835-18042	2140
&S6.3	92835-18043	2140
&S6.4	92835-18044	
&S7.1	92835-18045	
&S7.2	92835-18046	
&S8.1	92835-18047	
&S8.2	92835-18048	2140
&S8.3	92835-18049	
&SDIAG	92835-18006	
&SGCAL	92835-18005	
*L1.1	92835-17002	2140
*L1.2	92835-17003	2140
*L1.3	92835-17004	2140
*L1.4	92835-17005	2140
*L1.5	92835-17006	2140
*L1.6	92835-17007	2140
*L1.7	92835-17008	2140
*L1.8	92835-17009	2140
*L1.9E	92835-17011	2140
*L1.9M	92835-17010	2140
*L2.1	92835-17012	2140
*L2.2	92835-17013	2140
*L2.3	92835-17014	2140
*L3.1	92835-17015	2140
*L3.1T	92835-17016	2140
*L4.1	92835-17017	2140
*L4.2	92835-17018	2140
*L4.3	92835-17019	2140
*L5.1	92835-17020	2140
*L5.2	92835-17021	2140
*L5.3	92835-17022	2140
*L5.4	92835-17023	2140
*L6.1	92835-17024	2140
*L6.2	92835-17025	2140
*L6.3	92835-17026	2140
*L6.4	92835-17027	2140
*L7.1	92835-17028	2140
*L7.2	92835-17029	2140

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```
*L8.1                    92835-17030   2140
*L8.2                    92835-17031   2140
*L8.3                    92835-17032   2140
*LDIAG                   92835-17001   2140
@D1.3                    92835-18051
@D1.6                    92835-18052
@D1.7                    92835-18053
@D1.9M                   92835-18054
@D2.1                    92835-18055
@D2.2                    92835-18056
@D2.3                    92835-18057
@D3.1                    92835-18058
@D3.11                   92835-18059
@D5.1                    92835-18060
@D5.2                    92835-18061
@D5.3                    92835-18062
@D5.4                    92835-18063
@D6.11                   92835-18064
@D6.12                   92835-18065
@D6.13                   92835-18066
@D6.14                   92835-18067
@D6.15                   92835-18068
@D6.2                    92835-18069
@D6.3                    92835-18070
@D6.4                    92835-18071
@D8.1                    92835-18072
@D8.2                    92835-18073
@D8.3                    92835-18074
DIREC                    92835-18050   2140
```

3.53   + (92836A)   Fortran-77

Filename	Part Number	Rev	Change
"FTN7X	92836-17001	2340	
* #FTN7X	92836-17002	2340	--> 2401
* $F7XCS	92836-12001	2340	--> 2401
* %F7X1	92836-16002	2340	--> 2401
* %F7X2	92836-16003	2340	--> 2401
%FRPLS	92836-16004	2326	
&FRPLS	92836-18004	2326	
* A92836	92836-17999	2340	--> 2401

Manual Part#	Title	Type of Update
(no manual changes)		

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```
Media  Part#      Media Option
------------+----------------
92836-13301       020
92836-13302       020
92836-13304       020
92836-13303       022
92836-13401       041
92836-13402       042
92836-13403       044
92836-13501       050
92836-13502       051
```

3.54   (92840A)   Graphics/1000

```
Filename            Part Number  Rev
------------------- -----------  ----
%DCT02              92840-16005  1940
%DCT03              92840-16006  1913
%DCT08              92840-16009  1913
%DCT23              92840-16020  1940
%DVG01              92840-16003  2001
%DVG02              92840-16004  1940
%DVG04              92840-16010  2213
%DVG05              92840-16011  2213
%DVG06              92840-16008  2013
%DVG07              92840-16007  1913
%DVZ12              92840-16012  2213
%GCBIM              92840-16002  2013
%GPSC1              92840-16001  2213
%GPSC2              92840-16021  2013
&DLTBL              92840-18136  2001
&GPSBM              92840-18137  2213
A92840              92840-18114  2226
FONT1               92840-16013
FONT2               92840-16014
FONT3               92840-16015
FONT4               92840-16016
FONT5               92840-16017
FONT6               92840-16018
```

3.55   (92841A)   Graphics/1000-II DGL

Filename	Part Number	Rev
#RTRAN	92841-18536	2140
$A0001	92841-12003	2301
$A0017	92841-12032	2140
$B0001	92841-12004	2301
$B0004	92841-12013	2140
$B0017	92841-12033	2140
$D0001	92841-12002	2326
$D0002	92841-12009	2301
$D0003	92841-12012	2301
$D0006	92841-12019	2301
$D0007	92841-12022	2301
$D0008	92841-12023	2301
$D0009	92841-12024	2301
$D0010	92841-12025	2301
$D0015	92841-12026	2301
$D0016	92841-12027	2301
$D0018	92841-12044	2301
$D0019	92841-12028	2326
$D0021	92841-12045	2301
$D0026	92841-12038	2301
$D0027	92841-12048	2301
$D0028	92841-12049	2301
$D0029	92841-12050	2301
$D0030	92841-12051	2301
$D0031	92841-12053	2301
$D0032	92841-12055	2301
$D0036	92841-12058	2326
$DIDD1	92841-12057	2326
$DIDD2	92841-12047	2326
$K0001	92841-12005	2301
$K0017	92841-12034	2140
$L0001	92841-12006	2301
$L0002	92841-12010	2226
$L0004	92841-12014	2226
$L0005	92841-12017	2301
$L0006	92841-12020	2226
$L0017	92841-12035	2140
$L0018	92841-12046	2226
$L0019	92841-12029	2301
$L0027	92841-12052	2226
$L0031	92841-12054	2226
$L0032	92841-12056	2226

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$P0001	92841-12007	2301
$P0002	92841-12011	2226
$P0004	92841-12015	2226
$P0005	92841-12018	2226
$P0006	92841-12021	2226
$P0017	92841-12036	2140
$P0019	92841-12030	2301
$RTRB1	92841-12039	2301
$RTRB2	92841-12041	2301
$RTRB3	92841-12042	2301
$RTRBN	92841-12040	2301
$V0001	92841-12008	2301
$V0004	92841-12016	2226
$V0017	92841-12037	2140
$V0019	92841-12031	2301
%COLDM	92841-12059	2301
%MOCOM	92841-16161	2326
%PGNDM	92841-16702	2301
%RMAIN	92841-12043	2140
%RTRA1	92841-16461	2140
%RTRA2	92841-16462	2140
%RTRA3	92841-16463	2140
&CHRT1	24998-18468	2040
&CHRT2	24998-18469	2040
&GRAF1	24998-18466	2040
&GRAF2	24998-18467	2040
&M1NAM	92841-18535	2140
&T1INT	92841-18707	2301
&Z0BFR	92841-18343	2040
&Z1CTB	92841-18790	2301
&Z1PTB	92841-18743	2301
*CART	92841-18358	2301
*CTRNS	24998-18465	2040
*DIDD	92841-18690	2213
*FLOP	92841-18357	2301
*FTRNS	24998-18474	2040
*MDGL	92841-18689	2213
*MFLOP	92841-18313	2301
*MFTRN	24998-18479	2126
*MTRNS	24998-18475	2040
*RTRAN	92841-18537	2140
*TAPE	92841-18356	2301
A92841	92841-18999	2326
[PDGL1	92841-18344	2301
[PDGL2	92841-18345	2301

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3.56   (92842A)   Graphics/1000-II AGP

Filename	Part Number	Rev
$UPLI1	92042-12003	2301
$UPLI2	92842-12004	2326
$UPLI3	92842-12005	2301
$WSPL1	92842-12006	2301
$WSPL2	92842-12007	2301
%COM	92842-12008	2301
%SDUM	92842-12009	2301
%WPGDM	92842-12011	2301
%WSP	92842-16349	2040
%ZMNTL	92842-12002	2326
%ZMNTR	92842-12001	2301
&CHRT3	24998-13547	2301
&CHRT4	24998-13548	2301
&HOUSE	24998-18463	2040
&HOUSP	24998-18464	2301
&KONTB	92842-18454	2140
&K0PAG	92842-18376	2040
&K0SDF	92842-18377	2040
&K1FIL	92842-18464	2301
&VIEW	24998-18462	2140
&WSP	92842-18349	2040
*CTUS	24998-18459	2301
*FLOPY	92842-18436	2301
*FLP	24998-18460	2301
*MAG	92842-18435	2301
*MAGP3	92842-18458	2213
*MFLP	24998-18478	2301
*MFLPY	92842-18446	2301
*MINI	92842-18434	2301
*MT	24998-18458	2301
*UPLIB	92842-18442	2040
*WSPLB	92842-18441	2040
A92842	92842-18999	2326
FONT1	92842-16428	2040
FONT2	92842-16429	2040
FONT3	92842-16430	2040
FONT4	92842-16431	2040
FONT5	92842-16432	2040
FONT6	92842-16433	2040
[PAGP1	92842-18447	2301
[PAGP2	92842-18448	2301
[PAGP3	92842-18449	2301

3.57   (92843X)   Graphics/1000-II Device Handlers

Filename	Part Number	Rev
"SPINE	92843-18001	
#ALPHA	92843-18113	
#BUTTN	92843-18114	
#DISPL	92843-18115	
#DTEMP	92843-18116	
#KEYBD	92843-18117	
#LOCTR	92843-18118	
#PICK	92843-18119	
#VALU	92843-18120	
%TDPAT	92843-16139	2340
%TDRED	92843-16142	2340
%TFILL	92843-16140	2340
%TPGCP	92843-16143	2340
%ZPGDI	92843-16141	2340
&M0IXX	92843-18002	
&MIDXX	92843-18003	
&TBEGE	92843-18004	
&TCMAP	92843-18122	2340
&TECHO	92843-18005	
&TEDRW	92843-18006	
&TENDE	92843-18007	
&THCLP	92843-18008	
&TICTB	92843-18123	2340
&Z0ACD	92843-18009	
&Z0ADV	92843-18010	
&Z0AIN	92843-18011	
&Z0BCD	92843-18012	
&Z0BDV	92843-18013	
&Z0BIN	92843-18014	
&Z0CTB	92843-18124	2340
&Z0DCD	92843-18015	
&Z0DCT	92843-18125	2340
&Z0DDV	92843-18016	
&Z0DIN	92843-18017	
&Z0DLM	92843-18018	
&Z0ESC	92843-18059	d
&Z0EXT	92843-18126	2340
&Z0IXX	92843-18019	
&Z0KCD	92843-18020	
&Z0KDV	92843-18021	
&Z0KIN	92843-18022	
&Z0LCD	92843-18023	

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&ZOLDV	92843-18024	
&ZOLIN	92843-18025	
&ZOLLM	92843-18026	
&ZONAT	92843-18027	
&ZONCA	92843-18127	2340
&ZONPA	92843-18128	2340
&ZOPCD	92843-18028	
&ZOPDV	92843-18029	
&ZOPIN	92843-18030	
&ZOPLM	92843-18031	
&ZOVCD	92843-18032	
&ZOVDV	92843-18033	
&ZOVIN	92843-18034	
&ZAEND	92843-18035	
&ZAINT	92843-18036	
&ZALPH	92843-18037	
&ZBEND	92843-18038	
&ZBINT	92843-18039	
&ZBUTN	92843-18040	
&ZCOLR	92843-18041	
&ZCSIZ	92843-18042	
&ZDCOL	92843-18129	2340
&ZDEND	92843-18043	
&ZDINT	92843-18044	2340
&ZDRAW	92843-18045	
&ZHIGH	92843-18046	
&ZIACS	92843-18047	2340
&ZICOL	92843-18130	2340
&ZIESC	92843-18048	
&ZKEND	92843-18049	
&ZKEND	92843-18050	d
&ZKINT	92843-18050	2340
&ZKYBD	92843-18051	
&ZLEND	92843-18052	
&ZLINT	92843-18053	
&ZLSTL	92843-18054	
&ZLWID	92843-18055	
&ZMARK	92843-18056	2340
&ZMOVE	92843-18057	
&ZNEWF	92843-18058	
&ZOESC	92843-18059	2340
&ZPEND	92843-18060	
&ZPGDD	92843-18131	2340
&ZPICK	92843-18061	
&ZPINT	92843-18062	
&ZPOLY	92843-18063	
&ZSLOC	92843-18064	
&ZSVAL	92843-18065	
&ZTEXT	92843-18066	
&ZVEND	92843-18067	

&ZVINT	92843-18068	
&ZWLOC	92843-18069	
&ZWVAL	92843-18070	
*ALPHA	92843-18071	
*BUTTN	92843-18072	
*DISPL	92843-18073	
*KEYBD	92843-18074	
*LOCTR	92843-18075	
*PICK	92843-18076	
*VALU	92843-18077	
A92843	92843-18999	2340
[ALIAS	92843-18121	2340
[M0IOT	92843-18078	
[M0IXX	92843-18079	
[Z0ACD	92843-18080	
[Z0ADV	92843-18081	
[Z0AIN	92843-18082	
[Z0BCD	92843-18083	
[Z0BDV	92843-18084	
[Z0BFI	92843-18085	
[Z0BIN	92843-18086	
[Z0BUF	92843-18087	
[Z0CAT	92843-18088	
[Z0CON	92843-18089	
[Z0COR	92843-18090	
[Z0CPA	92843-18132	2340
[Z0CTB	92843-18133	2340
[Z0DCD	92843-18091	
[Z0DCT	92843-18134	2340
[Z0DDV	92843-18092	
[Z0DIN	92843-18093	
[Z0DLM	92843-18094	
[Z0EXT	92843-18135	2340
[Z0IXX	92843-18095	
[Z0KCD	92843-18096	
[Z0KDV	92843-18097	
[Z0KIN	92843-18098	
[Z0LCD	92843-18099	
[Z0LDV	92843-18100	
[Z0LIN	92843-18101	
[Z0LLM	92843-18102	
[Z0NAT	92843-18103	
[Z0NCA	92843-18137	2340
[Z0NPA	92843-18138	2340
[Z0PCD	92843-18104	
[Z0PDV	92843-18105	
[Z0PIN	92843-18106	
[Z0PLM	92843-18107	
[Z0PTB	92843-18136	2340
[Z0SYS	92843-18108	

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```
       [ZOVCD                 ς2843-18109   2126
       [ZOVDC                 ς2843-18109   d
       [ZOVDV                 ς2843-18110
       [ZOVIN                 ς2843-18111
       [ZOWRK                 ς2843-18112
```

3.58   + (92857A)   Basic/1000C

Filename	Part Number	Rev	Change
Path: /BASIC/			
* "BERRS	ς2857-17009		--> 2401
* #BAS.6	ς2857-17002		--> Deleted
* #BAS.A	ς2857-17001	2326	--> Deleted
* #BBMG	ς2857-17003		--> Deleted
* #BDAT	ς2857-17018		--> Deleted
* #CBA.6	ς2857-17013		--> Deleted
* #CBA.A	ς2857-17014	2326	--> Deleted
* #LNK.E	ς2857-17015	2326	--> Deleted
* #LNK.L	ς2857-17016	2326	--> Deleted
* #LNK.V	ς2857-17017	2326	--> Deleted
* #MERGC	ς2857-17021		--> Deleted
* #MRBAS	ς2857-17011		--> Deleted
* #MRRBX	ς2857-17012		--> Deleted
* #RBX.6	ς2857-17006		--> Deleted
* #RBX.A	ς2857-17005	2326	--> Deleted
* #RINTR	ς2857-17004		--> Deleted
* $ALIB	ς2857-12012	2326	--> Deleted
* $BASCL	ς2857-12013	2326	--> Deleted
* $BCALL	ς2857-16132		--> Deleted
* $BLIB1	ς2857-12006	2326	--> Deleted
* $BLIB2	ς2857-12007	2326	--> Deleted
* $LBMGL	ς2857-12002	2326	--> Deleted
* $RLIB1	ς2857-12008	2326	--> Deleted
* $RLIB2	ς2857-12009	2326	--> Deleted
* $RLIB3	ς2857-12001	2326	--> Deleted
* %B$T12	ς2857-16131		--> Deleted
* %B.EIO	ς2857-16291		--> Deleted
* %B.EMA	ς2857-16249		--> Deleted
* %B.VMA	ς2857-16250		--> Deleted
* %BDAT	ς2857-16239		--> Deleted
* %BEXEC	ς2857-16215		--> Deleted
* %BMSKL	ς2857-12003	2326	--> Deleted
* %BSSKL	ς2857-12004	2326	--> Deleted
* %CBA.1	ς2857-12010	2326	--> Deleted
* %CBA.2	ς2857-12011	2326	--> Deleted

* %F.EMA	92857-16240		-->	Deleted
* %FOX.6	92857-16144		-->	Deleted
* %FOX.A	92857-16145	2326	-->	Deleted
* %IB.XX	92857-16241		-->	Deleted
* %L.EMA	92857-16242		-->	Deleted
* %LINKA	92077-16001		-->	Deleted
* %LINKB	92077-16002		-->	Deleted
* %LINKC	92077-16003		-->	Deleted
* %LINKD	92077-16004		-->	Deleted
* %LNKD6	92077-16113	2226	-->	Deleted
* %LNKDA	92077-16112	2226	-->	Deleted
* %LNKR6	92077-16108	2226	-->	Deleted
* %LNKRA	92077-16107	2226	-->	Deleted
* %MMGT2	92857-16243		-->	Deleted
* %RINTR	92857-16128		-->	Deleted
* %RT.6M	92857-16244		-->	Deleted
* %RT.AM	92857-16245		-->	Deleted
* %RXSKL	92857-12005	2326	-->	Deleted
* %S.EMA	92857-16246		-->	Deleted
* %SAM.6	92857-16151		-->	Deleted
* %SAM.A	92857-16152		-->	Deleted
* %SAM6C	92857-16248		-->	Deleted
* %SAMAC	92857-16247		-->	Deleted
* &IB.XX	92857-18241		-->	Deleted
* &S.EMA	92857-18246		-->	Deleted
* *B.MLE	92857-17022		-->	Deleted
* *B.MLV	92857-17023		-->	Deleted
* *BAS.6	92857-17008	2326	-->	Deleted
* *BAS.A	92857-17007	2326	-->	Deleted
* *CBA.6	92857-17019		-->	Deleted
* *CBA.A	92857-17020		-->	Deleted
* A92857	92857-17999	2326	-->	Deleted
* A92857.SNF	92857-17999	New	-->	2420
* BASIC_ERRORS.SRC	92857-17010	New	-->	2401
* PASCAL.LIB	92833-16113	New	-->	2401
* PASCAL_CDS.LIB	92833-16104	New	-->	2401

Path: /BASIC/COMPILER/

* BDAT.LOD	92857-17018	New	-->	2401
* BDAT.REL	92857-16239	New	-->	2401
* B_EIO.REL	92857-16291	New	-->	2401
* B_EMA.REL	92857-16249	New	-->	2401
* B_MLE.EDIT	92857-17022	New	-->	2401
* B_MLV.EDIT	92857-17023	New	-->	2401
* B_VMA.REL	92857-16250	New	-->	2401
* CBASIC1.REL	92857-12013	New	-->	2420
* CBASIC2.REL	92857-12016	New	-->	2401
* CBASIC_CDS1.REL	92857-12014	New	-->	2420
* CBASIC_CDS2.REL	92857-12017	New	-->	2401
* CBASIC_CDS_LIB.MERG	92857-17029	New	-->	2401

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```
*  CBASIC_CMP.LIB       92857-12012  New   --> 2401
*  CBASIC_LIB.MERG      92857-17028  New   --> 2401
*  CBA_1.REL            92857-12010  New   --> 2401
*  CBA_123.MERG         92857-17021  New   --> 2401
*  CBA_2.REL            92857-12011  New   --> 2401
*  CBA_3.REL            92857-12015  New   --> 2401
*  CDSOF.REL            92857-16379  New   --> 2401
*  CDSON.REL            92857-16378  New   --> 2401
*  CDS_B_EIO.REL        92857-16380  New   --> 2401
*  CDS_B_EMA.REL        92857-16381  New   --> 2401
*  CDS_B_VMA.REL        92857-16382  New   --> 2401
*  CDS_FMPSTUFF.REL     92857-16305  New   --> 2401
*  CDS_IB_XX.MAC        92857-18302  New   --> 2401
*  CDS_IB_XX.REL        92857-16302  New   --> 2401
*  CDS_L_EMA.REL        92857-16383  New   --> 2401
*  CDS_MMGT2.REL        92857-16303  New   --> 2401
*  CDS_RT_AM.REL        92857-16304  New   --> 2401
*  FMPSTUFF.REL         92857-16306  New   --> 2401
*  F_EMA.REL            92857-16240  New   --> 2401
*  IB_XX.MAC            92857-18241  New   --> 2401
*  IB_XX.REL            92857-16241  New   --> 2401
*  INSTALL_6.CMD        92857-17019  New   --> 2420
*  INSTALL_6.LOD        92857-17013  New   --> 2401
*  INSTALL_A.CMD        92857-17020  New   --> 2420
*  INSTALL_A.LOD        92857-17014  New   --> 2401
*  INSTALL_AC.CMD       92857-17025  New   --> 2420
*  LINK_E.LOD           92857-17015  New   --> 2401
*  LINK_E_CDS.LOD       92857-17027  New   --> 2401
*  LINK_L.LOD           92857-17016  New   --> 2401
*  LINK_L_CDS.LOD       92857-17026  New   --> 2401
*  LINK_V.LOD           92857-17017  New   --> 2401
*  LINK_V_CDS.LOD       92857-17024  New   --> 2401
*  L_EMA.REL            92857-16242  New   --> 2401
*  MMGT2.REL            92857-16243  New   --> 2401
*  RT_6M.REL            92857-16244  New   --> 2401
*  RT_AM.REL            92857-16245  New   --> 2401
*  SAM6C.REL            92857-16248  New   --> 2401
*  SAMAC.REL            92857-16247  New   --> 2401
*  S_EMA.MAC            92857-18246  New   --> 2401
*  S_EMA.REL            92857-16246  New   --> 2401

   Path: /BASIC/INTERPRETER/
*  BAS_6.LOD            92857-17002  New   --> 2401
*  BAS_A.LOD            92857-17001  New   --> 2401
*  BBMG.LOD             92857-17003  New   --> 2401
*  BCALL.LIB            92857-16132  New   --> 2401
*  BEXEC.REL            92857-16215  New   --> 2401
*  BLIB1.LIB            92857-12006  New   --> 2401
*  BLIB2.LIB            92857-12007  New   --> 2401
*  BMSKL.REL            92857-12003  New   --> 2401
```

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```
*  BSSKL.REL            92857-12004   New   --> 2401
*  B_T12.REL            92857-16131   New   --> 2401
*  FOX_6.REL            92857-16144   New   --> 2401
*  FOX_A.REL            92857-16145   New   --> 2401
*  INSTALL_6_BAS.CMD    92857-17008   New   --> 2420
*  INSTALL_A_BAS.CMD    92857-17007   New   --> 2420
*  LBMGL.LIB            92857-12002   New   --> 2401
*  MRBAS.MER            92857-17011   New   --> 2401
*  MRRBX.MER            92857-17012   New   --> 2401
*  RBX_6.LOD            92857-17006   New   --> 2401
*  RBX_A.LOD            92857-17005   New   --> 2401
*  RINTR.LOD            92857-17004   New   --> 2401
*  RINTR.REL            92857-16128   New   --> 2401
*  RLIB1.LIB            92857-12008   New   --> 2401
*  RLIB2.LIB            92857-12009   New   --> 2401
*  RLIB3.LIB            92857-12001   New   --> 2401
*  RLIB4.LIB            92857-12018   New   --> 2401
*  RXSKL.REL            92857-12005   New   --> 2401
*  SAM_6.REL            92857-16151   New   --> 2401
*  SAM_A.REL            92857-16152   New   --> 2401
```

Manual Part#	Title	Type of Update
92857-90001	BASIC/1000C Reference Manual	Update 1
92857-90002	BASIC/1000C Configuration Guide	Update 3
92857-90003	BASIC/1000C Quick Reference Guide	Update 1
92857-90005	Special Installation Instructions	
5958-8110	Replace Pascal Library	

Media Part#	Media Option
92857-13301	022
92857-13401	041
92857-13402	041
92857-13403	041
92857-13420	041
92857-13421	041
92857-13404	042
92857-13405	042
92857-13406	042
92857-13407	042
92857-13408	042
92857-13409	042
92857-13410	042
92857-13411	042
92857-13422	042
92857-13423	042
92857-13424	042

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```
92857-13428              042
92857-13431              042
92857-13432              042
92857-13435              042
92857-13436              042
92857-13412              044
92857-13413              044
92857-13414              044
92857-13415              044
92857-13416              044
92857-13417              044
92857-13418              044
92857-13419              044
92857-13425              044
92857-13426              044
92857-13427              044
92857-13429              044
92857-13433              044
92857-13434              044
92857-13437              044
92857-13438              044
92857-13501              050
92857-13502              051
```

3.59   + (92860A)   Symbolic Debug/1000

	Filename	Part Number	Rev	Change
*	"DEBUG	92860-17003	2340	--> Deleted
*	#BLDN6	92860-17006	2340	--> Deleted
*	#BLDNA	92860-17007	2340	--> Deleted
*	#DEBN6	92860-17001	2340	--> Deleted
*	#DEBNA	92860-17005	2340	--> Deleted
*	%BDLIB	92860-16045	2340	--> Deleted
*	%BLDDB	92860-16040	2340	--> Deleted
*	%BLOCK	92860-16041	2340	--> Deleted
*	%BUIL0	92860-16042	2340	--> Deleted
*	%BUIL1	92860-16043	2340	--> Deleted
*	%BUIL2	92860-16044	2340	--> Deleted
*	%CONT	92860-16038	2340	--> Deleted
*	%DEBU0	92860-16009	2340	--> Deleted
*	%DEBU1	92860-16015	2340	--> Deleted
*	%DEBU2	92860-16019	2340	--> Deleted
*	%DEBU3	92860-16013	2340	--> Deleted
*	%DEBU4	92860-16020	2340	--> Deleted
*	%DEBU5	92860-16033	2340	--> Deleted
*	%DEBU6	92860-16034	2340	--> Deleted

```
*  %DEBU7          92860-16035   2340   --> Deleted
*  %DEBU8          92860-16036   2340   --> Deleted
*  %DEBU9          92860-16037   2340   --> Deleted
*  %DEBUG          92860-16002   2340   --> Deleted
*  %DEST6          92860-16003   2340   --> Deleted
*  %DESTL          92860-16022   2340   --> Deleted
*  %DPACK          92860-16018   2340   --> Deleted
*  %FLNEW          92860-16028   2340   --> Deleted
*  %FLOLD          92860-16029   2340   --> Deleted
*  %GETVL          92860-16007   2340   --> Deleted
*  %GKLIB          92860-16008   2340   --> Deleted
*  %GKNEW          92860-16026   2340   --> Deleted
*  %GKOLD          92860-16027   2340   --> Deleted
*  %GSORT          92860-16021   2340   --> Deleted
*  %INIT6          92860-16012   2340   --> Deleted
*  %INITL          92860-16023   2340   --> Deleted
*  %INITS          92860-16014   2340   --> Deleted
*  %MDATA          92860-16001   2340   --> Deleted
*  %OFMP           92860-16032   2340   --> Deleted
*  %POKE6          92860-16004   2340   --> Deleted
*  %POKEA          92860-16030   2340   --> Deleted
*  %POKEL          92860-16025   2340   --> Deleted
*  %PREP6          92860-16011   2340   --> Deleted
*  %PREPL          92860-16024   2340   --> Deleted
*  %RDVAL          92860-16017   2340   --> Deleted
*  %RMOVD          92860-16010   2340   --> Deleted
*  %SETB           92860-16039   2340   --> Deleted
*  %SINIT          92860-16046   2340   --> Deleted
*  %SWAPI          92860-16005   2340   --> Deleted
*  %SWICH          92860-16006   2340   --> Deleted
*  %WRVAL          92860-16016   2340   --> Deleted
*  A92860          92860-17999   2340   --> Deleted

   Path: /DEBUG/
*  DEBUG.ERR       92860-17003   New    --> 2401
*  DEBUG.ISTL      92860-17008   New    --> 2401
*  DEBUG.SNF       92860-17999   New    --> 2401

   Path: /DEBUG/LOAD_COMMAND/
*  BLDDB.LOD       92860-17007   New    --> 2401
*  DEBUG_NEW6.LOD  92860-17001   New    --> 2401
*  DEBUG_NEWA.LOD  92860-17005   New    --> 2401

   Path: /DEBUG/RELOC/
*  BDLIB.REL       92860-16045   New    --> 2401
*  BDREV.REL       92860-16069   New    --> 2401
*  BILDS.REL       92860-16062   New    --> 2401
*  BLDDB.REL       92860-16040   New    --> 2401
*  BLOCK.REL       92860-16041   New    --> 2401
*  BUIL0.REL       92860-16042   New    --> 2401
```

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```
*  BUIL1.REL            92860-16043   New    --> 2401
*  BUIL2.REL            92860-16044   New    --> 2401
*  CDS_ON_6.REL         92860-16080   New    --> 2401
*  CONT.REL             92860-16038   New    --> 2401
*  CRAM.REL             92860-16053   New    --> 2401
*  DBREV.REL            92860-16048   New    --> 2401
*  DEBU0.REL            92860-16009   New    --> 2401
*  DEBU1.REL            92860-16015   New    --> 2401
*  DEBU2.REL            92860-16019   New    --> 2401
*  DEBU3.REL            92860-16013   New    --> 2401
*  DEBU4.REL            92860-16020   New    --> 2401
*  DEBU5.REL            92860-16033   New    --> 2401
*  DEBU6.REL            92860-16034   New    --> 2401
*  DEBU7.REL            92860-16035   New    --> 2401
*  DEBU9.REL            92860-16037   New    --> 2401
*  DEBUG.REL            92860-16002   New    --> 2401
*  DEBUG_DATA.REL       92860-16070   New    --> 2401
*  DEBUX.REL            92860-16047   New    --> 2401
*  DEST6.REL            92860-16003   New    --> 2401
*  DESTL.REL            92860-16022   New    --> 2401
*  DISASSEMBLE.REL      92860-16068   New    --> 2401
*  DPACK.REL            92860-16018   New    --> 2401
*  FMPNAMR.REL          92860-16067   New    --> 2401
*  GETVAR.REL           92860-16060   New    --> 2401
*  GETVL.REL            92860-16007   New    --> 2401
*  GKLIB.REL            92860-16008   New    --> 2401
*  GSORT.REL            92860-16021   New    --> 2401
*  GTFLD.REL            92860-16050   New    --> 2401
*  HISTOGRAM.REL        92860-16079   New    --> 2401
*  INIT6.REL            92860-16012   New    --> 2401
*  INITL.REL            92860-16023   New    --> 2401
*  INITS.REL            92860-16014   New    --> 2401
*  LINKU.REL            92860-16063   New    --> 2401
*  MDATA.REL            92860-16001   New    --> 2401
*  OUTRC.REL            92860-16065   New    --> 2401
*  POKE6.REL            92860-16004   New    --> 2401
*  POKEA.REL            92860-16030   New    --> 2401
*  POKEL.REL            92860-16025   New    --> 2401
*  PREP6.REL            92860-16011   New    --> 2401
*  PREPL.REL            92860-16024   New    --> 2401
*  PUTIM.REL            92860-16064   New    --> 2401
*  RDVAL.REL            92860-16017   New    --> 2401
*  RMOVD.REL            92860-16010   New    --> 2401
*  SCREEN_IO.REL        92860-16066   New    --> 2401
*  SETB.REL             92860-16039   New    --> 2401
*  SET_RMPARMS.REL      92860-16061   New    --> 2401
*  SINIT.REL            92860-16046   New    --> 2401
*  SSTEP.REL            92860-16049   New    --> 2401
*  SSTEP_DATA.REL       92860-16055   New    --> 2401
*  SSTEP_PCAL6.REL      92860-16052   New    --> 2401
```

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```
* SSTEP_PCALA.REL       92860-16051   New   --> 2401
* STEPB_DATA.REL        92860-16057   New   --> 2401
* STEPB_PCAL6.REL       92860-16059   New   --> 2401
* STEPB_PCALA.REL       92860-16058   New   --> 2401
* SWAPI.REL             92860-16005   New   --> 2401
* SWICH.REL             92860-16006   New   --> 2401
* WRVAL.REL             92860-16016   New   --> 2401
```

Manual Part#	Title	Type of Update
92860-90001	Symbolic Debug/1000 User`s Manual	Update 1
92860-90002	Symbolic Debug/1000 Configuration Guide	Update 1

Media Part#	Media Option
(no media changes)	

3.60   + (92861A)   Graphics/1000-II DGL Version 2.0

```
     Filename              Part Number   Rev    Change
--------------------    -----------   ----   --------
* A0000.LIB             92861-12121   New   --> 2420
* A0000_CDS.LIB         92861-12122   New   --> 2420
* A0001.LIB             92861-12003   New   --> 2420
* A0001_CDS.LIB         92861-12070   New   --> 2420
* A0017.LIB             92861-12032   New   --> 2420
* A0017_CDS.LIB         92861-12115   New   --> 2420
* A92861                92861-18999   New   --> 2420
* B0000.LIB             92861-12123   New   --> 2420
* B0000_CDS.LIB         92861-12124   New   --> 2420
* B0001.LIB             92861-12004   New   --> 2420
* B0001_CDS.LIB         92861-12071   New   --> 2420
* B0004.LIB             92861-12013   New   --> 2420
* B0004_CDS.LIB         92861-12072   New   --> 2420
* B0017.LIB             92861-12033   New   --> 2420
* B0017_CDS.LIB         92861-12116   New   --> 2420
* CHART_DGL.FTN         24998-18579   New   --> 2420
* COLDM.REL             92861-12145   New   --> 2420
* COLDM_CDS.REL         92861-12146   New   --> 2420
* D0001.LIB             92861-12002   New   --> 2420
* D0001_CDS.LIB         92861-12073   New   --> 2420
* D0002.LIB             92861-12009   New   --> 2420
* D0002_CDS.LIB         92861-12074   New   --> 2420
* D0003.LIB             92861-12012   New   --> 2420
* D0003_CDS.LIB         92861-12075   New   --> 2420
```

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* D0006.LIB	92861-12019	New	--> 2420
* D0006_CDS.LIB	92861-12076	New	--> 2420
* D0007.LIB	92861-12022	New	--> 2420
* D0007_CDS.LIB	92861-12077	New	--> 2420
* D0008.LIB	92861-12023	New	--> 2420
* D0008_CDS.LIB	92861-12078	New	--> 2420
* D0009.LIB	92861-12024	New	--> 2420
* D0009_CDS.LIB	92861-12079	New	--> 2420
* D0010.LIB	92861-12025	New	--> 2420
* D0010_CDS.LIB	92861-12080	New	--> 2420
* D0015.LIB	92861-12026	New	--> 2420
* D0015_CDS.LIB	92861-12081	New	--> 2420
* D0016.LIB	92861-12027	New	--> 2420
* D0016_CDS.LIB	92861-12082	New	--> 2420
* D0018.LIB	92861-12044	New	--> 2420
* D0018_CDS.LIB	92861-12083	New	--> 2420
* D0019.LIB	92861-12028	New	--> 2420
* D0019_CDS.LIB	92861-12084	New	--> 2420
* D0020.LIB	92861-12127	New	--> 2420
* D0020_CDS.LIB	92861-12128	New	--> 2420
* D0021.LIB	92861-12045	New	--> 2420
* D0021_CDS.LIB	92861-12085	New	--> 2420
* D0026.LIB	92861-12137	New	--> 2420
* D0026_CDS.LIB	92861-12138	New	--> 2420
* D0027.LIB	92861-12048	New	--> 2420
* D0027_CDS.LIB	92861-12110	New	--> 2420
* D0028.LIB	92861-12049	New	--> 2420
* D0028_CDS.LIB	92861-12111	New	--> 2420
* D0029.LIB	92861-12050	New	--> 2420
* D0029_CDS.LIB	92861-12112	New	--> 2420
* D0030.LIB	92861-12051	New	--> 2420
* D0030_CDS.LIB	92861-12113	New	--> 2420
* D0031.LIB	92861-12053	New	--> 2420
* D0031_CDS.LIB	92861-12087	New	--> 2420
* D0032.LIB	92861-12055	New	--> 2420
* D0032_CDS.LIB	92861-12088	New	--> 2420
* D0036.LIB	92861-12058	New	--> 2420
* D0036_CDS.LIB	92861-12089	New	--> 2420
* D0046.LIB	92861-12129	New	--> 2420
* D0046_CDS.LIB	92861-12130	New	--> 2420
* D0047.LIB	92861-12131	New	--> 2420
* D0047_CDS.LIB	92861-12132	New	--> 2420
* D0048.LIB	92861-12133	New	--> 2420
* D0048_CDS.LIB	92861-12134	New	--> 2420
* D0053.LIB	92861-12139	New	--> 2420
* D0053_CDS.LIB	92861-12140	New	--> 2420
* D0054.LIB	92861-12141	New	--> 2420
* D0054_CDS.LIB	92861-12142	New	--> 2420
* D0055.LIB	92861-12143	New	--> 2420
* D0055_CDS.LIB	92861-12144	New	--> 2420

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* DEMOS_DGL.TXT	24998-19009	New	-->	2420
* DIDD.LIB	92861-12109	New	-->	2420
* DIDD_CDS.LIB	92861-12069	New	-->	2420
* GRAPH_DGL.FTN	24998-18578	New	-->	2420
* K0000.LIB	92861-12125	New	-->	2420
* K0000_CDS.LIB	92861-12126	New	-->	2420
* K0001.LIB	92861-12005	New	-->	2420
* K0001_CDS.LIB	92861-12090	New	-->	2420
* K0017.LIB	92861-12034	New	-->	2420
* K0017_CDS.LIB	92861-12117	New	-->	2420
* L0001.LIB	92861-12006	New	-->	2420
* L0001_CDS.LIB	92861-12091	New	-->	2420
* L0002.LIB	92861-12010	New	-->	2420
* L0002_CDS.LIB	92861-12092	New	-->	2420
* L0004.LIB	92861-12014	New	-->	2420
* L0004_CDS.LIB	92861-12093	New	-->	2420
* L0005.LIB	92861-12017	New	-->	2420
* L0005_CDS.LIB	92861-12094	New	-->	2420
* L0006.LIB	92861-12020	New	-->	2420
* L0006_CDS.LIB	92861-12095	New	-->	2420
* L0017.LIB	92861-12035	New	-->	2420
* L0017_CDS.LIB	92861-12118	New	-->	2420
* L0018.LIB	92861-12046	New	-->	2420
* L0018_CDS.LIB	92861-12096	New	-->	2420
* L0019.LIB	92861-12029	New	-->	2420
* L0019_CDS.LIB	92861-12097	New	-->	2420
* L0027.LIB	92861-12052	New	-->	2420
* L0027_CDS.LIB	92861-12114	New	-->	2420
* L0031.LIB	92861-12054	New	-->	2420
* L0031_CDS.LIB	92861-12098	New	-->	2420
* L0032.LIB	92861-12056	New	-->	2420
* L0032_CDS.LIB	92861-12099	New	-->	2420
* L0046.LIB	92861-12135	New	-->	2420
* L0046_CDS.LIB	92861-12136	New	-->	2420
* MOCOM.REL	92861-16161	New	-->	2420
* MANUAL_SET	02861-00001	New	-->	2420
* P0001.LIB	92861-12007	New	-->	2420
* P0001_CDS.LIB	92861-12100	New	-->	2420
* P0002.LIB	92861-12011	New	-->	2420
* P0002_CDS.LIB	92861-12101	New	-->	2420
* P0004.LIB	92861-12015	New	-->	2420
* P0004_CDS.LIB	92861-12102	New	-->	2420
* P0005.LIB	92861-12018	New	-->	2420
* P0005_CDS.LIB	92861-12103	New	-->	2420
* P0006.LIB	92861-12021	New	-->	2420
* P0006_CDS.LIB	92861-12104	New	-->	2420
* P0017.LIB	92861-12036	New	-->	2420
* P0017_CDS.LIB	92861-12119	New	-->	2420
* P0019.LIB	92861-12030	New	-->	2420
* P0019_CDS.LIB	92861-12105	New	-->	2420

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```
*  PDGL1.PASI           ς2861-18344   New   --> 2420
*  PDGL2.PASI           ς2861-18345   New   --> 2420
*  PGNDM.REL            ς2861-16901   New   --> 2420
*  PGNDM_CDS.REL        ς2861-16902   New   --> 2420
*  T1INT.FTN            ς2861-18707   New   --> 2420
*  V0001.LIB            ς2861-12008   New   --> 2420
*  V0001_CDS.LIB        ς2861-12106   New   --> 2420
*  V0004.LIB            ς2861-12016   New   --> 2420
*  V0004_CDS.LIB        ς2861-12107   New   --> 2420
*  V0017.LIB            ς2861-12037   New   --> 2420
*  V0017_CDS.LIB        ς2861-12120   New   --> 2420
*  V0019.LIB            ς2861-12031   New   --> 2420
*  V0019_CDS.LIB        ς2861-12108   New   --> 2420
*  Z0BFR.FTN            ς2861-18343   New   --> 2420
*  Z1CTB.FTN            ς2861-18790   New   --> 2420
*  Z1PTB.FTN            ς2861-18743   New   --> 2420
```

```
Manual Part#          Title                                    Type of Update
------------+-------------------------------------------+--------------
24998-90010   Instr. for DGL/AGP Prod. Demos
92861-90001   DGL Version 2.0 Supplement
92861-90003   Device Handlers Manual
97084-90000   DGL Programmer's Ref Man
```

```
Media  Part#      Media Option
-------------+---------------
    (no media changes)
```

3.61   + (92862A)   Graphics/1000-II AGP Version 2.0

```
   Filename             Fart Number   Rev   Change
--------------------- -----------   ----  --------
*  A92862               92862-18999   New   --> 2420
*  MANUAL_SET           02862-00001   New   --> 2420

   Path: /GRAPHICS/DEMOS/
*  CHART_AGP.FTN        24998-18580   New   --> 2420
*  DEMOS_AGP.TXT        24998-19010   New   --> 2420
*  HOUSE_AGP.FTN        24998-18582   New   --> 2420
*  HOUSE_AGP.PAS        24998-18583   New   --> 2420
*  VIEW_AGP.FTN         24998-18581   New   --> 2420

   Path: /GRAPHICS/LIBRARIES/
*  COM.REL              92862-12020   New   --> 2420
*  FONT1.DAT            92862-16428   New   --> 2420    .
```

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```
* FONT2.DAT          92862-16429   New   --> 2420
* FONT3.DAT          92862-16430   New   --> 2420
* FONT4.DAT          92862-16431   New   --> 2420
* FONT5.DAT          92862-16432   New   --> 2420
* FONT6.DAT          92862-16433   New   --> 2420
* KONTB.FTN          92862-18454   New   --> 2420
* KOPAG.FTN          92862-18376   New   --> 2420
* KOSDF.FTN          92862-18377   New   --> 2420
* K1FIL.FTN          92862-18464   New   --> 2420
* PAGP1.PASI         92862-18447   New   --> 2420
* PAGP2.PASI         92862-18448   New   --> 2420
* PAGP3.PASI         92862-18449   New   --> 2420
* SDUM.REL           92862-12021   New   --> 2420
* SDUM_CDS.REL       92862-12022   New   --> 2420
* UPLIB.LIB          92862-12016   New   --> 2420
* UPLIB_CDS.LIB      92862-12017   New   --> 2420
* WPGDM.REL          92862-12023   New   --> 2420
* WPGDM_CDS.REL      92862-12024   New   --> 2420
* WSP.FTN            92862-18349   New   --> 2420
* WSP.REL            92862-16349   New   --> 2420
* WSPLB.LIB          92862-12018   New   --> 2420
* WSPLB_CDS.LIB      92862-12019   New   --> 2420
* WSP_CDS.REL        92862-16642   New   --> 2420
* ZMNTL.REL          92862-12002   New   --> 2420
* ZMNTR.REL          92862-12001   New   --> 2420
```

Manual Part#	Title	Type of Update
24998-90010	Instr. for DGL/AGP Prod. Demos	
92862-90001	AGP Version 2.0 Supplement	
97085-90001	AGP User's Guide	
97085-90005	AGP Programmer's Ref Man	

Media Part#	Media Option
(no media changes)	

3.62   Current Firmware Revisions

A-Series Firmware History

(updated 1 January 1984)

A600 CPU FIRMWARE
==================

12101-60001
12101-80002 (U0706)
12101-80003 (U0806)
12101-80004 (U1006)   Revision 4000
12101-80005 (U0506)   Original Release
12101-80006 (U0606)
12101-80007 (U1106)   # These parts are bundled in with
12101-80008 (U0906)   the 12101-60001 processor board.
12101-80009 (U0305)   The 12101-60002 assembly no
12101-80010 (U0505)   longer includes these PROMs.
12101-80011 (U0605)#
12101-80012 (U0705)#
12101-80013 (U0805)#
12101-80014 (U1005)#

==================

12101-60001
12101-80002 (U0706)
12101-80003 (U0806)
12101-80021 (U1006)*   * Changed to fix bug. .FDIV with
12101-80005 (U0506)   E-Register set returns incorrect
12101-80006 (U0606)   results.
12101-80007 (U1106)   (See S/N 12101A-01)
12101-80008 (U0906)
12101-80009 (U0305)   Revision 4000
12101-80010 (U0505)
12101-80011 (U0605)#   # These parts are bundled in with
12101-80012 (U0705)#   the 12101-60001 processor board.
12101-80013 (U0805)#   The 12101-60002 assembly no
12101-80014 (U1005)#   longer includes these PROMs.

CURRENT REVISIONS (FIRMWARE)

```
===================

12101-60002
12101-80024 (U0706)*
12101-80025 (U0806)*
12101-80027 (U1006)*
12101-80022 (U0506)*        * Update 12101-60001 to 12101-60002
12101-80023 (U0606)*          by removing four socketed mapping
12101-80028 (U1106)*          PROMs (12101-80011, 80012,80013,
12101-80026 (U0906)*          and 80014).  Firmware adds Data2
12101-80029 (U0305)*          map instructions.
12101-80030 (U0505)*
12101-80031 (U0605)*          REQUIRED TO RUN RTE-A.
12101-80032 (U0705)*
12101-80033 (U0805)*          Revision 401
12101-80013 (U1005)*


===================

12101-60002
12101-80024 (U0706)
12101-80025 (U0806)
12101-80027 (U1006)
12101-80022 (U0506)         * Changed to fix bug.  .PWR2 causes
12101-80023 (U0606)           Unimplemented Instruction Trap
12101-80028 (U1106)           Interrupt
12101-80026 (U0906)
12101-80034 (U0305)*          (See S/N 2106AK-01)
12101-80035 (U0505)*
12101-80031 (U0605)           Revision 401
12101-80032 (U0705)
12101-80033 (U0805)
12101-80013 (U1005)


===================

12101-60002
12101-80037 (U0706)*
12101-80025 (U0806)
12101-80027 (U1006)
12101-80022 (U0506)         * Changed to fix bug.  Power Fail
12101-80036 (U0606)*          routine is not executed at power
12101-80028 (U1106)           fail.
12101-80026 (U0906)
12101-80034 (U0305)           (See S/N 2106AK-01)
12101-80035 (U0505)
12101-80031 (U0605)           Revision 401
12101-80032 (U0705)
12101-80033 (U0805)
12101-80013 (U1005)
```

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CURRENT REVISIONS (FIRMWARE)

===================

12101-60002
12101-80040 (U0706)*
12101-80041 (U0806)*
12101-80043 (U1006)*   * .FDV produces incorrect results
12101-80038 (U0506)*   for certain operands.
12101-80039 (U0606)*
12101-80044 (U1106)*   (See S/N 2106AK-04)
12101-80042 (U0906)*
12101-80034 (U0305)   This firmware is included in
12101-80035 (U0505)   upgrade kits 12101-60045 and
12101-80031 (U0605)   12101-60046.
12101-80032 (U0705)
12101-80033 (U0805)   Revision 1001
12101-80013 (U1005)

CURRENT REVISIONS (FIRMWARE)

A600+ CPU FIRMWARE
==================

12105-80002 (U0405)
12105-80003 (U0505)
12105-80004 (U0605)   Original Release
12105-80005 (U0705)
12105-80006 (U0805)
12105-80007 (U0905)
12105-80008 (U1005)
12105-80009 (U0308)
12105-80010 (U0808)

CURRENT REVISIONS (FIRMWARE)

A600/A600+ VCP HISTORY
======================

5180-0173 (U606)   Original Release
5180-0174 (U706)
                                    Revision 4

================

5180-0189 (U606)*   * Changed to fix bugs. Two power
5180-0190 (U706)*   fails in quick succession may
                                      result in an incorrect auto-
                                      restart. Booting remotely over
                                      FDL causes system to hang.
                                      Erroneous parity error message
                                      if memory is lost. Also several
                                      inconveniences are fixed and
                                      enhancements added.

                                    Revision 6

                                    (See S/N 12102A-01)

==================

12102-80003 (U606)*   * Changed to run with VC+. Also
12102-80004 (U706)*   adds boot loaders for 1600 BPI
                                      Mag Tape, 3.5" Micro Floppy,
                                      and 10 MB mini-winchester disc.
                                      VCP size is 8K and resides in
                                      EPROM.
                                      Included in 12107A A600+ Upgrade
                                      Kit.

                                    (See S/N 2106AK-3)

                                    Revision 4001

================

5180-4253 (U606)*   * Changed to fix bug. If system
5180-4254 (U706)*   disc and CPU are powered up
                                      simultaneously the CPU will
                                      not auto boot.

                                    (See S/N 2106AK-6A)

                                    Revision level 4004

CURRENT REVISIONS (FIRMWARE)

A700 BASE SET HISTORY
======================

12152-80011 (U91)
12152-80012 (U101)   Original Release
12152-80013 (U111)
12152-80014 (U121)

==================

12152-80031 (U91)*
12152-80032 (U101)*   * Changed to fix bug. DDS will
12152-80033 (U111)*   skip incorrectly.
12152-80034 (U121)*

==================

12152-80035 (U91)*   * Add Code and Data Separation
12152-80036 (U101)*   Instructions. Also several
12152-80037 (U111)*   bugs were fixed. .LWD1 and
12152-80038 (U121)*   .LWD2 are not priviledged
                               instructions. Any instruction
                               in the A/B registers which
                               causes an MP violation freezes
                               the computer.

                               REQUIRED TO RUN VC+

                               (See S/N 2107AK-01)

                               This firmware is included in
                               upgrade kit 12152-60043.

A700 FLOATING POINT HISTORY
============================

12156-80005
12156-80006
12156-80007
12156-80008

===========

12156-80013
12156-80014
12156-80015
12156-80016

===========

12156-80017
12156-80018
12156-80019
12156-80020

===========

12156-80021
12156-80022
12156-80023
12156-80024

===========

12156-80025
12156-80026
12156-80027
12156-80028

===========

12156-80029
12156-80030
12156-80031
12156-80032

===========

12156-80033
12156-80034   (See S/N 2107AK-1)
12156-80035
12156-80036

A700 VCP HISTORY
=================

5180-0173 (U15)   Original Release
5180-0174 (U35)
                                    Revision 4

=================

5180-0189 (U15)*   * Changed to fix bugs. Two power
5180-0190 (U35)*   fails in quick succession may
                                      result in an incorrect auto-
                                      restart. Booting remotely over
                                      FDL causes system to hang.
                                      Erroneous parity error message
                                      if memory is lost. Also several
                                      inconveniences are fixed and
                                      enhancements added.

                                    Revision 6

                                    (See S/N 12102A-01)

===================

12152-80039 (U15)*   * Changed to run with VC+. Also
12152-80040 (U35)*   adds boot loaders for 1600 BPI
12152-80041 (U55)*   Mag Tape, 3.5" Micro Floppy,
12152-80042 (U65)*   and 10 MB mini-winchester disc.

                                    Revision 4001

                                    (See S/N 2107AK-01)

==================

12152-80043 (U15)*   * Changed to fix bug. If system
12152-80044 (U35)*   disc and CPU are powered up
12152-80045 (U55)*   simultaneously, the CPU will
12152-80046 (U65)*   not auto boot.

                                    Included in Upgrade Kit
                                    12152-60043.

                                    Revision 4004

                                    (See S/N 2107AK-2A)

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A900 FIRMWARE HISTORY
======================

12201-80003 (U0803)
12201-80004 (U0802)
12201-80005 (U0801)
12201-80006 (U1103)
12201-80007 (U1102)
12201-80008 (U1101)
12201-80009 (U0703)   Original Release
12201-80010 (U0702)
12201-80011 (U0701)
12201-80012 (U1003)
12201-80013 (U1002)
12201-80014 (U1001)
12201-80015 (U0603)
12201-80016 (U0602)
12201-80017 (U0601)
12201-80018 (U0903)
12201-80019 (U0902)
12201-80020 (U0901)   .
12201-80021 (U1407)
12201-80022 (U1607)

===================

12201-80024 (U0803)*
12201-80025 (U0802)*
12201-80026 (U0801)*
12201-80027 (U1103)*
12201-80028 (U1102)*   * Rewrite firmware to execute
12201-80029 (U1101)*   Code and Data Separation
12201-80030 (U0703)*   Instructions. Firmware change
12201-80031 (U0702)*   must be accompanied by a
12201-80032 (U0701)*   new Cache Control Board:
12201-80033 (U1003)*   12203-60004.
12201-80034 (U1002)*
12201-80035 (U1001)*   REQUIRED TO RUN RTE-A AND VC+.
12201-80036 (U0603)*
12201-80037 (U0602)*
12201-80038 (U0601)*   This firmware is included in
12201-80039 (U0903)*   the 12203A Opt 001 Retrofit Kit.
12201-80040 (U0902)*
12201-80041 (U0901)*
12201-80042 (U1407)*
12201-80043 (U1607)*

```
====================
```

12201-80024 (U0803)
12201-80044 (U0802)*
12201-80026 (U0801)
12201-80027 (U1103)
12201-80028 (U1102)
12201-80029 (U1101)
12201-80030 (U0703)
12201-80031 (U0702)
12201-80032 (U0701)
12201-80033 (U1003)
12201-80034 (U1002)
12201-80035 (U1001)
12201-80036 (U0603)
12201-80037 (U0602)
12201-80038 (U0601)
12201-80039 (U0903)
12201-80040 (U0902)
12201-80041 (U0901)
12201-80042 (U1407)
12201-80043 (U1607)

```
====================
```

12201-80045 (U0803)*
12201-80046 (U0802)*
12201-80047 (U0801)*
12201-80048 (U1103)*
12201-80049 (U1102)*
12201-80050 (U1101)*
12201-80030 (U0703)
12201-80031 (U0702)
12201-80032 (U0701)
12201-80033 (U1003)
12201-80034 (U1002)
12201-80035 (U1001)
12201-80036 (U0603)
12201-80037 (U0602)
12201-80038 (U0601)
12201-80039 (U0903)
12201-80040 (U0902)
12201-80041 (U0901)
12201-80042 (U1407)
12201-80043 (U1607)

* Computer does not Power Fail
   Auto restart. When power is
   restored, the computer comes
   up in VCP mode.

   (See S/N 2139A-01)

* If negative indicies for EMA
   arrays are used, incorrect
   addresses are generated. This
   may appear as a Memory Protect
   error.

   (See S/N 2139A-2)

CURRENT REVISIONS (FIRMWARE)

====================

12201-80052 (U0803)*
12201-80053 (U0802)*
12201-80054 (U0801)*
12201-80055 (U1103)*
12201-80056 (U1102)*   * Changed to fix bug. Computers
12201-80057 (U1101)*   with battery backup will not
12201-80030 (U0703)   auto restart. Also, a compare
12201-80031 (U0702)   byte instruction (CBT)
12201-80032 (U0701)   incorrectly clears the
12201-80033 (U1003)   X-register.
12201-80034 (U1002)
12201-80035 (U1001)   (See S/N 2139a-2)
12201-80036 (U0603)
12201-80037 (U0602)
12201-80038 (U0601)
12201-80039 (U0903)
12201-80040 (U0902)
12201-80041 (U0901)
12201-80042 (U1407)
12201-80043 (U1607)

====================

12201-80060 (U0803)*
12201-80053 (U0802)
12201-80054 (U0801)
12201-80055 (U1103)   * A900 TBG runs too slow. The
12201-80061 (U1102)*   TBG loses approximately 24
12201-80062 (U1101)*   seconds per day due to a
12201-80030 (U0703)   firmware bug.
12201-80031 (U0702)
12201-80032 (U0701)   (See S/N 2139A-4)
12201-80033 (U1003)
12201-80034 (U1002)   This firmware is included in
12201-80035 (U1001)   Upgrade Kit 12201-60051.
12201-80036 (U0603)
12201-80037 (U0602)   Revision 11
12201-80038 (U0601)
12201-80039 (U0903)
12201-80040 (U0902)
12201-80041 (U0901)
12201-80042 (U1407)
12201-80043 (U1607)

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CURRENT REVISIONS (FIRMWARE)

====================

12201-80060 (U0803)
12201-80053 (U0802)
12201-80054 (U0801)
12201-80055 (U1103)
12201-80061 (U1102)
12201-80062 (U1101)
12201-80063 (U0703)*
12201-80064 (U0702)*
12201-80065 (U0701)*
12201-80066 (U1003)*
12201-80067 (U1002)*
12201-80068 (U1001)*
12201-80036 (U0603)
12201-80037 (U0602)
12201-80038 (U0601)
12201-80039 (U0903)
12201-80040 (U0902)
12201-80041 (U0901)
12201-80042 (U1407)
12201-80043 (U1607)

* Changed to fix bug.
  Erroneous results returned
  when .FPWR is followed by
  .FAD in MACRO code. This
  code is generated by the
  FORTRAN compiler in the
  expression   B=2*A**3

  (See S/N 2139A-6)

  This firmware is included in
  Upgrade Kit 12201-60069.

  Revision number ???????

A900 VCP FIRMWARE HISTORY
=========================

12203-80002 (U0908)   Original Release
12203-80003 (U1208)

===================

12203-80005 (U0908)*   * REQUIRED TO RUN RTE-A AND VC+
12203-80006 (U1208)*
                                Included in the 12203A Opt. 001
                                Retrofit Kit.

===================

12203-80007 (U0908)*   * Add boot loaders for 1600 BPI
12203-80008 (U1208)*   Mag Tape, 3.5" Microfloppy, and
                                10MB mini-winchester disc.
                                VCP is now in 8K eproms.

                                (See S/N 2139A-3)

==================

12203-80009 (U0908)*   * Changed to fix bug. If system
12203-80010 (U1208)*   disc and CPU are powered up
                                simultaneously, the CPU will
                                not auto boot.

                                Revision 4004

                                (See S/N 2139A-2)

```
+----------------------------------------------------+------------------+
|                                                    |                  |
|    GENERATION & INSTALLATION CONSIDERATIONS        |   CHAPTER  4     |
|                                                    |                  |
+----------------------------------------------------+------------------+
```

This chapter discusses both software and firmware considerations for generation and installation that have been introduced by the this software update.

4.1   Software Considerations

The following are products that require changes to the generation or loading procedures. For detailed descriptions refer to the appropriate manuals for the product.

4.1.1   (91750) DS/1000-IV

A new driver, DVB65, was created to improve SAM allocation. The driver recognizes two new subchannel types: 30B and 31B. NOTE: DVB65 is special and works only in specific network topology. See Section 2.2.1 and the DS/1000-IV Network Mangager's manual Volume 1 (91750-90010) for more details.

Two libraries were added: $D3X25 AND $D3N25. These libraries were added to correct error recovery problems. See Section 2.2.2, KRP 5000007344 for more detail.

4.1.2   (91751A) DSN/X.25 1000

The name of the LINK command files used to load the DSN/X.25 1000 product were changed to replace the "/" (conflict with the new file system) by a "*". In addition, on the A-Series, the transfer file names were changed to reflect their use on RTE-A only.

4.1.3   (92077A)   RTE-A

Due to the increased size of the RTE-A operating system caused by the enhancements mentioned in chapter 2, the minimum 128k byte memory system is no longer supported.

Customers with Pascal/1000 (92833A) should check the configuration guide shipped with that product (CONFIG_GUIDE.DOC, 92833-17085) to decide which Pascal library to generate into their system. Customers without Pascal should continue to generate $PLIBN (92833-16054) as before.

The generation information for the 9133XV and 9134XV was left out of the System Generation and Installation manual. The default generation for the 9134XV is four LU's using Model name M9134X. The 9133XV is the same with the addition of on LU for the micro-floppy. An example of generating the 9133XV using default parameters follows.

```
*        Micro-floppy LU, HPIB Address 3
DVT,%DD.30,M7902,LU:lu,DP:1:3:0:0:0,DP:5:2:66:16:2
*        First Disc LU, HPIB Address 0
DVT,%DD.30,M9134X:0,LU:lu,DP:1:0
*        Second Disc LU, HPIB Address 0
DVT,%DD.30,M9134X:1,LU:lu,DP:1:0
*        Third Disc LU, HPIB Address 0
DVT,%DD.30,M9134X:2,LU:lu,DP:1:0
*        Fourth Disc LU, HPIB Address 0
DVT,%DD.30,M9134X:3,LU:lu,DP:1:0
```


4.1.4   (92833A)   Pascal/1000

Pascal was enhanced to generate CDS code. The compiler itself is provided in both CDS and Standard versions. See the file CONFIG_GUIDE.DOC (92833-17083) that is shipped with Pascal/1000 for more details.

The old pascal library $PLIBN has been deleted. There are now two new libraries: PASCAL.LIB and PASCAL_CDS.LIB. See the file CONFIG_GUIDE.DOC (92833-17083) for more details.

4.1.5   (92857A) Basic/1000C

Basic/1000C   was   enhanced   to   support   matrix   statements,   the
hierarchical file system, and compiler generated CDS code.

Three libraries increased in size and were required to be broken up
as follows.
        (1) RLIB3.LIB into RLIB3.LIB and RLIB4.LIB
        (2) CBASIC.LIB into CBASIC1.REL AND CBASIC2.REL,
        (3) CBASIC_CDS.LIB into CBASIC_CDS1.REL and CBASIC_CDS2.REL.

4.1.6   (92860A) Symbolic Debug/1000

To allow for more free space, Debug is now limited to a total of 25
break/tracepoints. See section 2.10.2 for more details.

4.2   RP List for Firmware

This section will list the RP's for the HP/1000 M-Series, HP/1000
E-Series and the HP/1000 F-Series, and will specify which RP's are
Operating System dependent.   The following conventions have been
chosen:

^ = Applies only to RTE-IVB and RTE-6/VM Op-Systems; it indicates
    that the specified RP does not need to be included in the
    Generation Answer File because it is part of the module RPLIB in
    the system library.

+ = Applies only to RTE-6/VM Op-System.

- = Applies only to RTE-IVB Op-System.

4.2.1   RP's for the HP/1000 M-Series

```
********************************************************
*                                                      *
*           ENTRY POINT CHANGES                        *
*           FOR THE HP/1000 M-Series                   *
*                                                      *
********************************************************
*
*      ***** INTEGER ARITHMETIC ENTRY POINTS *****
*
.MPY,RP, 100200^       * INTEGER MULTIPLY
.DIV,RP, 100400^       * INTEGER DIVIDE
.DLD,RP, 104200^       * DOUBLE LOAD
.DST,RP, 104400^       * DOUBLE STORE
*
*      ***** EAU AND HFP ENTRY POINTS *****
*
.FAD,RP, 105000^       * FLOATING POINT ADD
.FSB,RP, 105020^       * FLOATING POINT SUBTRACT
.FMP,RP, 105040^       * FLOATING POINT MULTIPLY
.FDV,RP, 105060^       * FLOATING POINT DIVIDE
IFIX, RP,105100^       * REAL TO INTEGER FIX
FLOAT,RP,105120^       * INTEGER TO REAL FLOAT
*
*      ***** MOVE & COMPARE WORDS ******
*
.MVW,RP, 105777^       * MOVE WORDS
.CMW,RP, 105776^       * COMPARE WORDS
*
*      ***** BIT & BYTE INSTRUCTIONS *****
*
.CBT,RP, 105766^       * COMPARE BYTES
.LBT,RP, 105763^       * LOAD BYTE
.SBT,RP, 105764^       * STORE BYTE
.MBT,RP, 105765^       * MOVE BYTES
.SFB,RP, 105767^       * SCAN FOR BYTE
.CBS,RP, 105774^       * CLEAR BITS
.SBS,RP, 105773^       * SET BITS
.TBS,RP, 105775^       * TEST BITS
```

```
*
*     *****    MISCELLANEOUS    ******
*
*     CLRIO IS GENERATED BY THE COMPILER, BUT IS NOT USED IN
*     RTE.  THEREFORE THIS ENTRY POINT IS MERELY AN RSS
*     (UNCONDITIONAL SKIP).
*
CLRIO,RP,2001          * NOTE: THE CLRIO ROUTINE IS USED BY QUERY
*                      *   SO COMMENT OUT THE RP IF USING 92063A IMAGE
*
*     Z$INT AND Z$LPP ARE ENTRY POINTS USED BY FTN4X COMPILER.
*
Z$INT,RP,1             * INTEGERS ARE STORED IN 1 WORD (DEFAULT=1)
Z$LPP,RP,73            *  OF LINES/PAGE (DEFAULT=73 OCTAL/59 DECIMAL)
*
*     Z$DBL IS AN ENTRY POINT USED BY THE FTN4 COMPILER (REV 1901
*       OR LATER)
*     IF IT CONTAINS 3, DOUBLE PRECISION VALUES WILL BE 3 WORDS
*     IF IT CONTAINS 4, DOUBLE PRECISION VALUES WILL BE 4 WORDS
*
Z$DBL,RP, 3
*
*     FOR RP'S NEEDED BY THE FTN7X COMPILER, USE %FRPLS
*     (92836-16004)
*
*
*     ***** FFP ENTRY POINTS *****
*
DBLE, RP,105201        * CONVERT REAL TO EXTENDED REAL
SNGL, RP,105202        * CONVERT EXTENDED REAL TO REAL
.DFER,RP,105205        * 3 WORD MOVE (EXTENDED REAL TRANSFER)
.XPAK,RP,105206        * NORMALIZE, ROUND AND PACK WITH EXPONENT
*                      *   AN EXTENDED REAL MANTISSA
.XCOM,RP,105215        * COMPLEMENT AN EXTENDED REAL UNPACKED
*                      *   MANTISSA IN PLACE
..DCM,RP,105216        * COMPLEMENT AN EXTENDED REAL
DDINT,RP,105217        * TRUNCATE AN EXTENDED REAL
.XFER,RP,105220        * 3 WORD MOVE (EXTENDED REAL TRANSFER)
.GOTO,RP,105221        * TRANSFER CONTROL TO LOCATION
..MAP,RP,105222        * CAL THE ADR OF A 2 OR 3D ARRAY ELEMENT
.ENTR,RP,105223        * TRANSFER THE TRUE ADDRESS OF PARAMETERS
*                      *   USED IN A SUBROUTINE CALL
.ENTP,RP,105224        * SAME AS .ENTR, EXCEPT MUST BE THIRD
*                      *   INSTRUCTION AFTER THE ENTRY POINT
.PWR2,RP,105225        * CALCULATE REAL X AND INTEGER N, Y=X*2**N
.FLUN,RP,105226        * UNPACK REAL (EXPONENT IN A, LOWER PART OF
*                      *   MANTISSA IN B)
*
$SETP,RP,105227        * SET UP A LIST OF POINTERS
*                      * NOTE: $SETP REPLACES .SETP AS OF 1913
```

```
*
.PACK,RP,105230        * CONVERT SIGNED MANTISSA OF REAL INTO
*                      *   NORMALIZE REAL FORMAT
.XADD,RP,105213        * EXTENTED REAL ADDITION
*                      *   (IN E AND M SERIES ONLY)
.XSUB,RP,105214        * EXTENDED REAL SUBTRACTION
*                      *   (IN E AND M SERIES ONLY)
.XMPY,RP,105203        * EXTENDED REAL MULTIPLY
*                      *   (IN E AND M SERIES ONLY)
.XDIV,RP,105204        * EXTENDED REAL DIVIDE
*                      *   (IN E AND M SERIES ONLY)
*
**********************************************************************
*
*     XADD, XSUB, XMPY AND XDIV ARE USED FOR FTN INTERFACES
*
XADD,RP,105207         * EXTENDED REAL ADDITION
*                      *   (IN E AND M SERIES ONLY)
XSUB,RP,105210         * EXTENDED REAL SUBTRACTION
*                      *   (IN E AND M SERIES ONLY)
XMPY,RP,105211         * EXTENDED REAL MULTIPLICATION
*                      *   (IN E AND M SERIES ONLY)
XDIV,RP,105212         * EXTENDED REAL DIVISION
*                      *   (IN E AND M SERIES ONLY)
*
**********************************************************************
```

4.2.2   RP's for the HP/1000 E-Series

```
********************************************************
*                                                      *
*          ENTRY POINT CHANGES                         *
*          FOR THE HP/1000 E-Series                    *
*                                                      *
********************************************************
*
*     The RP's in an E-Series CPU are Op-System dependent.
*     Conforming to the conventions specified at the beginning
*     of this section:
*                    "+"   indicates RTE-6/VM,  and
*                    "-"   indicates RTE-IVB.
```

```
*
*       ***** INTEGER ARITHMETIC ENTRY POINTS *****
*
.MPY, RP,100200^       * INTEGER MULTIPLY
.DIV, RP,100400^       * INTEGER DIVIDE
.DLD, RP,104200^       * DOUBLE LOAD
.DST, RP,104400^       * DOUBLE STORE
*
*       ***** EAU ENTRY POINTS *****
*
.FAD, RP,105000^       * FLOATING POINT ADD
.FSB, RP,105020^       * FLOATING POINT SUBTRACT
.FMP, RP,105040^       * FLOATING POINT MULTIPLY
.FDV, RP,105060^       * FLOATING POINT DIVIDE
IFIX, RP,105100^       * REAL TO INTEGER FIX
FLOAT,RP,105120^       * INTEGER TO REAL FLOAT
*
*     ***** MOVE & COMPARE WORDS ******
*
.MVW, RP,105777^       * MOVE WORDS
.CMW, RP,105776^       * COMPARE WORDS
*
*     ***** BIT & BYTE INSTRUCTIONS *****
*
.CBT,RP, 105766^       * COMPARE BYTES
.LBT,RP, 105763^       * LOAD BYTE
.SBT,RP, 105764^       * STORE BYTE
.MBT,RP, 105765^       * MOVE BYTES
.SFB,RP, 105767^       * SCAN FOR BYTE
.CBS,RP, 105774^       * CLEAR BITS
.SBS,RP, 105773^       * SET BITS
.TBS,RP, 105775^       * TEST BITS
*
*     *****   MISCELLANEOUS   ******
*
*     CLRIO IS GENERATED BY THE COMPILER, BUT IS NOT USED IN
*     RTE.  THEREFORE THIS ENTRY POINT IS MERELY AN RSS
*     (UNCONDITIONAL SKIP).
*
CLRIO,RP,2001          * NOTE: THE CLRIO ROUTINE IS USED BY QUERY
*                      *   SO COMMENT OUT THE RP IF USING 92063A IMAGE
*
*     Z$INT AND Z$LPP ARE ENTRY POINTS USED BY FTN4X COMPILER.
*
Z$INT,RP,1             * INTEGERS ARE STORED IN 1 WORD (DEFAULT=1)
Z$LPP,RP,73            *  OF LINES/PAGE (DEFAULT=73 OCTAL/59 DECIMAL)
```

```
*
*       Z$DBL IS AN ENTRY POINT USED BY THE FTN4 COMPILER (REV
*         1901 OR LATER)
*         IF IT CONTAINS 3, DOUBLE PRECISION VALUES WILL BE 3 WORDS
*         IF IT CONTAINS 4, DOUBLE PRECISION VALUES WILL BE 4 WORDS
*
Z$DBL,RP,3               * DOUBLE PRECISION VALUES ARE STORED ON 3
*                        *     WORDS.
*
*       FOR RP'S NEEDED BY THE FTN7X COMPILER, USE %FRPLS
*         (92836-16004)
*
*
*       ***** FFP ENTRY POINTS *****
*
DBLE, RP,105201         * CONVERT REAL TO EXTENDED REAL
SNGL, RP,105202         * CONVERT EXTENDED REAL TO REAL
.DFER,RP,105205         * 3 WORD MOVE (EXTENDED REAL TRANSFER)
.XPAK,RP,105206         * NORMALIZE, ROUND AND PACK WITH EXPONENT
*                        *     AN EXTENDED REAL MANTISSA
.XCOM,RP,105215         * COMPLEMENT AN EXTENDED REAL UNPACKED
*                        *     MANTISSA IN PLACE
..DCM,RP,105216         * COMPLEMENT AN EXTENDED REAL
DDINT,RP,105217         * TRUNCATE AN EXTENDED REAL
.XFER,RP,105220         * 3 WORD MOVE (EXTENDED REAL TRANSFER)
.GOTO,RP,105221         * TRANSFER CONTROL TO LOCATION
..MAP,RP,105222         * CAL THE ADR OF A 2 OR 3D ARRAY ELEMENT
.ENTR,RP,105223         * TRANSFER THE TRUE ADDRESS OF PARAMETERS
*                        *     USED IN A SUBROUTINE CALL
.ENTP,RP,105224         * SAME AS .ENTR, EXCEPT MUST BE THIRD
*                        *     INSTRUCTION AFTER THE ENTRY POINT
.PWR2,RP,105225         * CALCULATE REAL X AND INTEGER N, Y=X*2**N
.FLUN,RP,105226         * UNPACK REAL (EXPONENT IN A, LOWER PART OF
*                        *     MANTISSA IN B)
*
$SETP,RP,105227         * SET UP A LIST OF POINTERS
*                        * NOTE: $SETP REPLACES .SETP AS OF 1913
*
.PACK,RP,105230         * CONVERT SIGNED MANTISSA OF REAL INTO
*                        *     NORMALIZE REAL FORMAT
.CFER,RP,105231         * MOVE 4 WORDS (COMPLEX TRANSFER)
.XADD,RP,105213         * EXTENDED REAL ADDITION
*                        *     (IN E AND M SERIES ONLY)
.XSUB,RP,105214         * EXTENDED REAL SUBTRACTION
*                        *     (IN E AND M SERIES ONLY)
.XMPY,RP,105203         * EXTENDED REAL MULTIPLY
*                        *     (IN E AND M SERIES ONLY)
.XDIV,RP,105204         * EXTENDED REAL DIVIDE
*                        *     (IN E AND M SERIES ONLY)
*****************************************************************
```

```
*
*      XADD, XSUB, XMPY AND XDIV ARE USED FOR FTN INTERFACES
*
XADD,RP,105207      * EXTENDED REAL ADDITION
*                   *    (IN E AND M SERIES ONLY)
XSUB,RP,105210      * EXTENDED REAL SUBTRACTION
*                   *    (IN E AND M SERIES ONLY)
XMPY,RP,105211      * EXTENDED REAL MULTIPLICATION
*                   *    (IN E AND M SERIES ONLY)
XDIV,RP,105212      * EXTENDED REAL DIVISION
*                   *    (IN E AND M SERIES ONLY)
*
*******************************************************************
*
*
*   ***** EMA ENTRY POINTS (F AND E SERIES IN RTE-IVB ONLY) *****
*
.EMAP,RP,105257-    * RESOLVE REFERENCES TO EMA ELEMENTS
.EMIO,RP,105240-    * USED FOR I/O FROM EMA ARRAYS
MMAP, RP,105241-    * MAPS PHYSICAL PAGES INTO LOGICAL ADR SPACE
*
*
*******************************************************************
*
*   **** VMA/EMA ENTRY POINTS (F AND E SERIES IN RTE-6/VM ONLY) **
*
.PMAP,RP,105240+    * MAP EMA/VMA PAGE IN MAP REGISTER
$LOC ,RP,105241+    * MEMORY RESIDENT NODES LOAD ON CALL
.IMAP,RP,105250+    * SINGLE INT FTN4X ARRAY CALC + MAP
.IMAR,RP,105251+    * SINGLE INT SUBSCRIPT ARRAY CALC.
.JMAP,RP,105252+    * DOUBLE INT FTN4X ARRAY CALC. + MAP
.JMAR,RP,105253+    * DOUBLE INT SUBSCRIPT ARRAY CALC.
.LPXR,RP,105254+    * TWO DEF POINTER ADD & MAP
.LPX ,RP,105255+    * A&BREG POINTER + DEF OFFSET & MAP
.LBPR,RP,105256+    * ONE DEF POINTER & MAP
.LBP ,RP,105257+    * MAP POINTER IN A&BREG
*
*   **** USER CALLABLE OP SYS ENTRY POINTS
*        (F AND E SERIES IN RTE-6/VM ONLY)     ******
*
$LIBR,RP,105340+    * EMULATE SYSTEM ENTRY $LIBR
$LIBX,RP,105341+    * EMULATE SYSTEM ENTRY $LIBX
*$SIP ,RP,0     +    * USE $SIP,RP,0 ONLY IF THE SYSTEM
*                   *    IS PRIVILEGED OR A MICROINSTRUCTION
*                   *    IS STORED IN A TRAP CELL
.FNW ,RP,105345+    * FIND WORD WITH USER INCREMENT
.LLS ,RP,105347+    * LINKED LIST SEARCH
```

```
.CPM ,RP,105352+    * COMPARE WORDS IN MEMORY
.ENTN,RP,105354+    * ENTRY POINT RESOLVER
.ENTC,RP,105356+    * ENTRY POINT RESOLVER
*
******************************************************************
```

4.2.3   RP's for the HP/1000 F-Series

```
****************************************************
*                                                  *
*           ENTRY POINT CHANGES                     *
*           FOR THE HP/1000 F-Series                *
*                                                  *
****************************************************
*
*       The RP's in an F-series CPU are Op-System dependent.
*       Conforming to the conventions specified at the beginning
*       of this chapter:
*                       "+"  indicates RTE-6/VM,  and
*                       "-"  indicates RTE-IVB.
*
*       ***** INTEGER ARITHMETIC ENTRY POINTS *****
*
.MPY, RP,100200^    * INTEGER MULTIPLY
.DIV, RP,100400^    * INTEGER DIVIDE
.DLD, RP,104200^    * DOUBLE LOAD
.DST, RP,104400^    * DOUBLE STORE
*
*       ***** EAU AND HFP ENTRY POINTS *****
*
.FAD, RP,105000^    * FLOATING POINT ADD
.FSB, RP,105020^    * FLOATING POINT SUBTRACT
.FMP, RP,105040^    * FLOATING POINT MULTIPLY
.FMP, RP,105040^    * FLOATING POINT MULTIPLY
.FDV, RP,105060^    * FLOATING POINT DIVIDE
IFIX, RP,105100^    * REAL TO INTEGER FIX
FLOAT,RP,105120^    * INTEGER TO REAL FLOAT
.FIXD,RP,105104     * REAL TO DOUBLE INTEGER FIX
*                   *  (IN F SERIES ONLY)
.FLTD,RP,105124     * REAL TO DOUBLE INTEGER FLOAT
*                   *  (IN F SERIES ONLY)
*
*       ***** MOVE & COMPARE WORDS ******
*
.MVW,RP, 105777^    * MOVE WORDS
.CMW,RP, 105776^    * COMPARE WORDS
```

                        - Software Update Notice -

```
*
*       ***** BIT & BYTE INSTRUCTIONS *****
*
.CBT,RP, 105766^       * COMPARE BYTES
.LBT,RP, 105763^       * LOAD BYTE
.SBT,RP, 105764^       * STORE BYTE
.MBT,RP, 105765^       * MOVE BYTES
.SFB,RP, 105767^       * SCAN FOR BYTE
.CBS,RP, 105774^       * CLEAR BITS
.SBS,RP, 105773^       * SET BITS
.TBS,RP, 105775^       * TEST BITS
*
*       *****   MISCELLANEOUS   **********
*
*       CLRIO IS GENERATED BY THE COMPILER, BUT IS NOT USED IN
*       RTE.  THEREFORE THIS ENTRY POINT IS MERELY AN RSS
*       (UNCONDITIONAL SKIP).
*
CLRIO,RP,2001          * NOTE: THE CLRIO ROUTINE IS USED BY QUERY
*                      *   SO COMMENT OUT THE RP IF USING 92063A IMAGE
*
*       Z$INT AND Z$LPP ARE ENTRY POINTS USED BY FTN4X COMPILER.
*
Z$INT,RP,1             * INTEGERS ARE STORED IN 1 WORD (DEFAULT=1)
Z$LPP,RP,73            *   OF LINES/PAGE (DEFAULT=73 OCTAL/59 DECIMAL)
*
*       Z$DBL IS AN ENTRY POINT USED BY THE FTN4 COMPILER (REV 1901
*          OR LATER).
*       IF IT CONTAINS 3, DOUBLE PRECISION VALUES WILL BE 3 WORDS
*       IF IT CONTAINS 4, DOUBLE PRECISION VALUES WILL BE 4 WORDS
*
Z$DBL,RP,3
*
*       FOR RP'S NEEDED BY THE FTN7X COMPILER, USE %FRPLS
*       (92836-16004)
*
*
*       ***** FFP ENTRY POINTS *****
*
DBLE, RP,105201        * CONVERT REAL TO EXTENDED REAL
SNGL, RP,105202        * CONVERT EXTENDED REAL TO REAL
.DFER,RP,105205        * 3 WORD MOVE (EXTENDED REAL TRANSFER)
.XPAK,RP,105206        * NORMALIZE, ROUND AND PACK WITH EXPONENT
*                      *   AN EXTENDED REAL MANTISSA
.XCOM,RP,105215        * COMPLEMENT AN EXTENDED REAL UNPACKED
*                      *   MANTISSA IN PLACE
..DCM,RP,105216        * COMPLEMENT AN EXTENDED REAL
DDINT,RP,105217        * TRUNCATE AN EXTENDED REAL
.XFER,RP,105220        * 3 WORD MOVE (EXTENDED REAL TRANSFER)
.GOTO,RP,105221        * TRANSFER CONTROL TO LOCATION
```

```
..MAP,RP,105222      * CAL THE ADR OF A 2 OR 3D ARRAY ELEMENT
.ENTR,RP,105223      * TRANSFER THE TRUE ADDRESS OF PARAMETERS
*                    *    USED IN A SUBROUTINE CALL
.ENTP,RP,105224      * SAME AS .ENTR, EXCEPT MUST BE THIRD
*                    *    INSTRUCTION AFTER THE ENTRY POINT
.PWR2,RP,105225      * CALCULATE REAL X AND INTEGER N, Y=X*2**N
.FLUN,RP,105226      * UNPACK REAL (EXPONENT IN A, LOWER PART OF
*                    *    MANTISSA IN B)
*
$SETP,RP,105227      * SET UP A LIST OF POINTERS
*                    * NOTE: $SETP REPLACES .SETP AS OF 1913
*
.PACK,RP,105230      * CONVERT SIGNED MANTISSA OF REAL INTO
*                    *    NORMALIZE REAL FORMAT
.CFER,RP,105231      * MOVE 4 WORDS (COMPLEX TRANSFER)
*
*                    * ..FCM, ..TCM, .BLE, AND .NGL ARE AS OF REV 1926
*
..FCM,RP,105232      * COMPLEMENT A REAL
*                    *    (IN F SERIES ONLY)
..TCM,RP,105233      * NEGATE A DOUBLE REAL
*                    *    (IN F SERIES ONLY)
.BLE, RP,105207      * CONVERT REAL TO DOUBLE REAL
*                    *    (IN F SERIES ONLY)
.NGL, RP,105214      * CONVERT DOUBLE REAL TO REAL
*                    *    (IN F SERIES ONLY)
*
*
*      ***** 3-WORD ENTRY POINTS (IN F SERIES ONLY) *****
*
.XADD,RP,105001      * EXTENDED REAL ADDITION
.XSUB,RP,105021      * EXTENDED REAL SUBTRACTION
.XMPY,RP,105041      * EXTENDED REAL MULTIPLICATION
.XDIV,RP,105061      * EXTENDED REAL DIVISION
.XFXS,RP,105101      * EXTENDED REAL TO INTEGER FIX
.DINT,RP,105101      * EXTENDED REAL TO INTEGER FIX (NOTE .DINT FOR
*                    *    FTN INTERFACE, SAME ENTRY POINT AS .XFXS
.XFXD,RP,105105      * EXTENDED REAL TO DOUBLE INTEGER FIX
.XFTS,RP,105121      * INTEGER TO EXTENDED REAL FLOAT
.IDBL,RP,105121      * INTEGER TO EXTENDED REAL FLOAT  (NOTE: FTN
*                    *    INTERFACE SAME ENTRY POINT AS .XFTS)
.XFTD,RP,105125      * DOUBLE INTEGER TO EXTENDED REAL FLOAT
*
*      ***** 4-WORD ENTRY POINTS (IN F SERIES ONLY) *****
*
.TADD,RP,105002      * DOUBLE REAL ADDITION
.TSUB,RP,105022      * DOUBLE REAL SUBTRACTION
.TMPY,RP,105042      * DOUBLE REAL MULTIPLY
.TDIV,RP,105062      * DOUBLE REAL DIVIDE
.TFXS,RP,105102      * DOUBLE REAL TO INTEGER FIX
```

```
       .TINT,RP,105102      '' DOUBLE REAL TO INTEGER FIX  (NOTE: FTN
       *                    ''    INTERFACE SAME ENTRY POINT AS .TFXS)
       .TFXD,RP,105106      '' DOUBLE REAL TO DOUBLE INTEGER FIX
       .TFTS,RP,105122      '' INTEGER TO DOUBLE REAL FLOAT
       .ITBL,RP,105122      '' INTEGER TO DOUBLE REAL FLOAT (NOTE: FTN
       *                    ''    INTERFACE SAME ENTRY POINT AS .TFTS)
       .TFTD,RP,105126      '' DOUBLE INTEGER TO DOUBLE REAL FLOAT
       *
       * **** DOUBLE INTEGER ENTRY POINTS (FFP) (IN F SERIES ONLY) *****
       *
       .DAD ,RP,105014      '' DOUBLE INTEGER ADDITION
       .DSB ,RP,105034      '' DOUBLE INTEGER SUBTRACTION
       .DMP ,RP,105054      '' DOUBLE INTEGER MULTIPLICATION
       .DDI ,RP,105074      '' DOUBLE INTEGER DIVISION
       .DSBR,RP,105114      '' DOUBLE INTEGER SUBTRACTION (REVERSED)
       .DDIR,RP,105134      '' DOUBLE INTEGER DIVISION (REVERSED)
       .DNG ,RP,105203      '' DOUBLE INTEGER NEGATE
       .DIN ,RP,105210      '' DOUBLE INTEGER INCREMENT
       .DDE ,RP,105211      '' DOUBLE INTEGER DECREMENT
       .DIS ,RP,105212      '' DOUBLE INTEGER INCREMENT AND SKIP IF 0
       .DDS ,RP,105213      '' DOUBLE INTEGER DECREMENT AND SKIP IF 0
       .DCO ,RP,105204      '' DOUBLE INTEGER COMPARE
       *
       *     ***** SIS ENTRY POINTS (IN F SERIES ONLY) *****
       *
       TAN  ,RP,105320      '' TANGENT
       SQRT ,RP,105321      '' SQUARE ROOT
       ALOG ,RP,105322      '' NATURAL LOGARITHM LN(X)
       ATAN ,RP,105323      '' ARCTANGENT
       COS  ,RP,105324      '' COSINE
       SIN  ,RP,105325      '' SINE
       EXP  ,RP,105326      '' EXPONENTIAL E**X
       ALOGT,RP,105327      '' LOGARITHM LOG10(X)
       TANH ,RP,105330      '' HYPERBOLIC TANGENT
       *
       TRNL ,RP,105331      '' EVALUATE THE QUOTIENT OF 2 POLYNOMIALS IN
       *                    '' DOUBLE PRECISION
       DPOLY,RP,105331      '' EVALUATE THE QUOTIENT OF 2 POLYNOMIALS IN
       *                    '' DOUBLE PRECISION
       *                    '' NOTE: DPOLY REPLACES TRNL AS OF 1926 (SAME
       *                    '        ROUTINE DPOLY IS USED IN OTHER SUB-
       *                    '        ROUTINES SUCH AS DCOS AND DSIN)
```

```
*
*                      * /CMRT, /ATLG, .FPWR, AND .TPWR ARE AS OF
*                      *   REV 1926
*
/CMRT,RP,105332       * RANGE REDUCTION FUNCTION
/ATLG,RP,105333       * COMPUTE (1-X)/(1+X) IN DOUBLE PRECISION
.FPWR,RP,105334       * COMPUTE X**I FOR REAL X AND UNSIGNED INTEGER I
.TPWR,RP,105335       * COMPUTE X**I FOR DOUBLE REAL X AND UNSIGNED
*                      *   INTEGER I
*
*********************************************************************
*
*       ***** VIS ENTRY POINTS (F SERIES IN RTE-IVB ONLY) *****
*
.VECT,RP,101460-      * FIRST OF TWO WORDS (USED BY SOFTWARE IN %VLIB
*                      *   TO GET TO TWO WORD OPCODES)
VPIV ,RP,101461-      * PIVOT ROUTINE
VABS ,RP,101462-      * ABSOLUTE VALUE ROUTINE
VSUM ,RP,101463-      * SUM THE ARRAY ELEMENTS
VNRM ,RP,101464-      * SUM THE ABSOLUTE VALUE OF THE ELEMENTS
VDOT ,RP,101465-      * DOT PRODUCT ROUTINE
VMAX ,RP,101466-      * FIND THE LARGEST  ARRAY ELEMENT
VMAB ,RP,101467-      * FIND THE LARGEST  ARRAY ELEMENT(ABSOLUTE VALUE)
VMIN ,RP,101470-      * FIND THE SMALLEST ARRAY ELEMENT
VMIB ,RP,101471-      * FIND THE SMALLEST ARRAY ELEMENT(ABSOLUTE VALUE)
VMOV ,RP,101472-      * COPY AN ARRAY INTO AN OTHER ARRAY
VSWP ,RP,101473-      * EXCHANGE ELEMENTS OF TWO ARRAYS
.ERES,RP,101474-      * CAL 2 WORD OFFSET FOR EMA ARRAY ELEMENTS
.VSET,RP,101476-      * CAL MAP TABLE FORM .ERES INFORMATION
.ESEG,RP,101475-      * PERFORM THE MAPPING FROM THE MAP TABLE
*                      *   FOUND WITH .VSET
.DVCT,RP,105460-      * FIRST OF TWO WORDS (USED BY SOFTWARE IN %VLIB
*                      *   TO GET TO TWO WORD OPCODES)
DVPIV,RP,105461-      * PIVOT ROUTINE FOR DOUBLE REAL ARRAYS
DVABS,RP,105462-      * ABSOLUTE VALUE ROUTINE FOR DOUBLE REAL ARRAYS
DVSUM,RP,105463-      * SUM THE ARRAY ELEMENTS FOR DOUBLE REAL ARRAYS
DVNRM,RP,105464-      * SUM THE ABSOLUTE VALUE OF THE ELEMENTS IN A
*                      *   DOUBLE REAL ARRAY
DVDOT,RP,105465-      * DOT PRODUCT ROUTINE FOR DOUBLE REAL ARRAYS
DVMAX,RP,105466-      * FIND THE LARGEST ARRAY ELEMENT IN A DOUBLE
*                      *   REAL ARRAY
DVMAB,RP,105467-      * FIND THE LARGEST ARRAY ELEMENT IN A DOUBLE
*                      *   REAL ARRAY (ABSOLUTE VALUE)
DVMIN,RP,105470-      * FIND THE SMALLEST ARRAY ELEMENT IN A DOUBLE
*                      *   REAL ARRAY
DVMIB,RP,105471-      * FIND THE SMALLEST ARRAY ELEMENT IN A DOUBLE
*                      *   REAL ARRAY (ABSOLUTE VALUE)
DVMOV,RP,105472-      * COPY A DOUBLE REAL ARRAY INTO ANOTHER DOUBLE
*                      *   REAL ARRAY
```

```
DVSWP,RP,105473-    * EXCHANGE ELEMENTS OF TWO DOUBLE REAL ARRAYS
*
*
*    **** EMA ENTRY POINTS (F AND E SERIES IN RTE-IVB ONLY) ****
*
*
.EMAP,RP,105257-    * RESOLVE REFERENCES TO EMA ELEMENTS
.EMIO,RP,105240-    * USED FOR I/O FROM EMA ARRAYS
MMAP, RP,105241-    * MAPS PHYSICAL PAGES INTO LOGICAL ADR SPACE
*
*****************************************************************
*
*    ***** VIS ENTRY POINTS (F SERIES IN RTE-6/VM ONLY) *****
*
.VECT,RP,101460+    * FIRST OF TWO WORDS (USED BY SOFTWARE IN %VLIB)
*                   *   TO GET TO TWO WORD OPCODES
VPIV ,RP,101461+    * PIVOT ROUTINE
VABS, RP,101462+    * ABSOLUTE VALUE ROUTINE
VSUM ,RP,101463+    * SUM THE ARRAY ELEMENTS
VNRM ,RP,101464+    * SUM THE ABSOLUTE VALUE OF THE ELEMENTS
VDOT ,RP,101465+    * DOT PRODUCT ROUTINE
VMAX ,RP,101466+    * FIND THE LARGEST  ARRAY ELEMENT
VMAB ,RP,101467+    * FIND THE LARGEST  ARRAY ELEMENT(ABSOLUTE VALUE)
VMIN ,RP,101470+    * FIND THE SMALLEST ARRAY ELEMENT
VMIB ,RP,101471+    * FIND THE SMALLEST ARRAY ELEMENT(ABSOLUTE VALUE)
VMOV ,RP,101472+    * COPY AN ARRAY INTO AN OTHER ARRAY
VSWP ,RP,101473+    * EXCHANGE ELEMENTS OF TWO ARRAYS
.DVCT,RP,105460+    * FIRST OF TWO WORDS (USED BY SOFTWARE IN %VLIB
*                   *   TO GET TO TWO WORD OPCODES)
DVPIV,RP,105461+    * PIVOT ROUTINE FOR DOUBLE REAL ARRAYS
DVABS,RP,105462+    * ABSOLUTE VALUE ROUTINE FOR DOUBLE REAL ARRAYS
DVSUM,RP,105463+    * SUM THE ARRAY ELEMENTS FOR DOUBLE REAL ARRAYS
DVNRM,RP,105464+    * SUM THE ABSOLUTE VALUE OF THE ELEMENTS IN A
*                   *   DOUBLE REAL ARRAY
DVDOT,RP,105465+    * DOT PRODUCT ROUTINE FOR DOUBLE REAL ARRAYS
DVMAX,RP,105466+    * FIND THE LARGEST  ARRAY ELEMENT IN A DOUBLE
*                   *   REAL ARRAY
DVMAB,RP,105467+    * FIND THE LARGEST  ARRAY ELEMENT IN A DOUBLE
*                   *   REAL ARRAY (ABSOLUTE VALUE)
DVMIN,RP,105470+    * FIND THE SMALLEST ARRAY ELEMENT IN A DOUBLE
*                   *   REAL ARRAY
DVMIB,RP,105471+    * FIND THE SMALLEST ARRAY ELEMENT IN A DOUBLE
*                   *   REAL ARRAY (ABSOLUTE VALUE)
DVMOV,RP,105472+    * COPY A DOUBLE REAL ARRAY INTO ANOTHER DOUBLE
*                   *   REAL ARRAY
DVSWP,RP,105473+    * EXCHANGE ELEMENTS OF TWO DOUBLE REAL ARRAYS
*
```

```
*
*    ***   VMA/EMA ENTRY POINTS (F SERIES IN RTE-6/VM ONLY)   ****
*
.PMAP,RP,105240+      * MAP EMA/VMA PAGE IN MAP REGISTER
$LOC ,RP,105241+      * MEMORY RESIDENT NODES LOAD ON CALL
.IMAP,RP,105250+      * SINGLE INT FTN4X ARRAY CALC. + MAP
.IMAR,RP,105251+      * SINGLE INT SUBSCRIPT ARRAY CALC.
.JMAP,RP,105252+      * DOUBLE INT FTN4X ARRAY CALC. + MAP
.JMAR,RP,105253+      * DOUBLE INT SUBSCRIPT ARRAY CALC.
.LPXR,RP,105254+      * TWO DEF POINTER ADD & MAP
.LPX ,RP,105255+      * A&BREG POINTER + DEF OFFSET & MAP
.LBPR,RP,105256+      * ONE DEF POINTER & MAP
.LBP ,RP,105257+      * MAP POINTER IN A&BREG
*
*         *** USER CALLABLE OP SYS ENTRY POINTS
*             (F AND E SERIES IN RTE-6/VM ONLY)   *****
*
$LIBR,RP,105340+      * EMULATE SYSTEM ENTRY $LIBR
$LIBX,RP,105341+      * EMULATE SYSTEM ENTRY $LIBX
*$SIP ,RP,0     +      * USE $SIP,RP,0 ONLY IF THE SYSTEM IS
*                      *   PRIVILEGED OR A MICROINSTRUCTION
*                      *   IS STORED IN A TRAP CELL
.FNW ,RP,105345+      * FIND WORD WITH USER INCREMENT
.LLS ,RP,105347+      * LINKED LIST SEARCH
.CPM ,RP,105352+      * COMPARE WORDS IN MEMORY
.ENTN,RP,105354+      * ENTRY POINT RESOLVER
.ENTC,RP,105356+      * ENTRY POINT RESOLVER
*********************************************************************
```

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+-----------------------------------------------+------------------+
|                                               |                  |
|   UPDATE PROCEDURES                           |   CHAPTER  5     |
|                                               |                  |
+-----------------------------------------------+------------------+
```

Customers on Support Services, CSS/SSS, will receive updates to
software on paper tape, minicartridges, mag tape, flexible discs or
CTDs, depending on the options they have ordered. This chapter
contains information concerning the format of update media and
suggested procedures for updating software from this media.

5.1   General Information

To update your software:

1. *BACK UP YOUR DISC BEFORE PROCEEDING.*
   This will insure that you can always return to your original
   system and start over.

2. *VERIFY YOUR BACKUP COPY.*
   It is suggested that you make two copies and verify them both.

3. The typical procedure for updating your system is to replace the
   existing files on your system with the files supplied on the
   media. You may, when it's possible, want to store the new file to
   disc on a different CRN or volume.   Then, when you're sure it has
   transferred correctly, purge your old copy.   This is just to
   ensure that you get a good copy of the new file before you destroy
   your old one.

After you have updated your software:

1. Generate your new system right away. If there have been any errors in the transfer process, they probably will be detected this way.

2. Check the revision codes of your software as they appear in the generation map against those listed in the software numbering catalog or file, and make sure you have not left out any modules.

3. Boot, initialize and use your newly generated system to make sure that it works correctly.

4. Make backup copies of your newly generated system. Use a new tape to backup your system. Keep the old copy until it's time to update once again, and then use it to backup the next 'new' system. This way you will keep at least two revisions backed-up by rotating your media.

5. Keep the update media together with your old backup media. If you discover problems later, you will always be able to get back to where you started and go through the update procedure again.

NOTE: If Operating System software has not changed and there are no changes affecting your generation (e.g., generated-in libraries), then regeneration is not necessary and on-line reloading will be sufficient. Otherwise regeneration is necessary before reloading on-line.

5.2   Media Content

All the updates to the software for a product are distributed on the media requested by the customer. Depending on the product, there will be differences in what software is included on the media. The following table provides an overview of the different configurations possible with respect to software content and format:

Media Option	Format	Operating Systems	Subsystems
010 Paper Tape	FMGR 'ST'	(A)	(A)
020 Minicartridge	READR/SAVER	(A)	(B)
	FMGR 'ST'	(A)	(B)
	CI 'CO'	-	(C)*
022 CS/80 CTD	FC	(C)	(C)
	TF	(C)	(C)
	VCP Bootable	-	(B)**
041 Floppy Disc	Mountable FMGR CRN	(B)	(B)
	Mountable CI volume	-	(C)*
042 Mini-Floppy	Mountable FMGR CRN	(B)	(B)
	Mountable CI volume	-	(C)*
044 Micro-Floppy	Mountable FMGR CRN	(B)	(B)
	Mountable CI volume	-	(C)*
050 Mag Tape 800	READR/SAVER	(C)	(C)
	FC	(C)	(C)
	FMGR 'ST'	(A)	(B)
	TF	-	(C)
051 Mag Tape 1600	READR/SAVER	(C)	(C)
	FC	(C)	(C)
	FMGR 'ST'	(A)	(B)
	TF	-	(C)

(A) Only the files that have changed will be included on the media.

(B) Each individual media part no. (i.e. one minicartridge, one disc, one mag tape) contains a certain subset of the files belonging to a product. If one or more of these files change, the entire media part containing that file or files will be shipped. For example, suppose the following media part numbers for a product contain the following files:

    9xxxx-1xx01 - File A, File B, File C
    9xxxx-1xx02 - File D, File E
    9xxxx-1xx03 - File F, File G, File H

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If file B, file F, and file H are updated, the customer
receiving this option would receive the media part numbers
9xxxx-1xx01 and 9xxxx-1xx03. Notice that the customer would
also get files A, C, and G even though these files haven't
changed.

(C) All the files belonging to the product will be sent.

  * This update only. Next update will be (B).
 ** Restored Off-line

5.3   Update Procedures

Updated software is stored on media in one of several formats. The
above table shows the formats currently being used for different
media types. Note that each physical media carries a label
identifying the part number of the media, a description and a
revision code.

On media with files to be restored to hard disc (e.g., all floppies;
TF, FC, Saver, Writt, and FMGR 'ST' (store) tapes; and
mini-cassettes) there is a new file called "HPHPHP" which describes
each of the software parts. Information provided for each part
includes:

        Part number
        Software revision code
        Module number
        File type
        File name

Each media piece (each tape, mini-cartridge, floppy, etc.) with a
revision code after 2340 (all software updated at C.83 is 2401 or
greater) will have an HPHPHP file.

The information in HPHPHP is helpful to the user who wants to know
what files are on the medium. For example, if the medium was missing
a software module that was listed in HPHPHP, the user would call his/
her support office and request the missing software.

On each tape or mini-cartridge, HPHPHP is the first file. On
floppies, HPHPHP is the first file appearing in the directory
listing.

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The HPHPHP file has no part number.

Diagnostics and primary systems do not require an HPHPHP file.

5.3.1   Paper Tape

- A single file is stored on the tape in FMGR 'ST' format.
- The file type of this file must be determined from the specific
  Software Numbering Catalog, Configuration Guide or Reference Manual
  for the product.
- The file is restored by using the FMGR 'ST' command
  (ex.   :ST,4,FILEA:RT:32767::-1,BR).

5.3.2   Minicartridge in READR/SAVER format

- SAVER stores the software on to the tape file-by-file in a packed
  format.

- The tape can only be read using the READR utility; refer to the
  READR/SAVER Utility Reference Manual for detailed information on
  how to update your files. The recommended procedure is to use the
  UPdate function of READR to replace existing files on the system
  with new files from tape.

- With this update there are two library files for RTE-6/VM which
  cannot fit on a single minicartridge. The files each have been
  split into two parts. The files and their parts are

           The file: ...has been split into:

           $TFLIB   ---> $TFLB1, $TFLB2
           $FMP6   ---> $FMP6X, $FMP6Y

It will be necessary for customers receiving updates in this format
to use the MERGE utility (refer to the RTE-6/VM Utilities Reference
Manual (92084-90007) to merge the pieces back into the original
libraries.

5.3.3   Minicartridge in FMGR 'ST' format

- Three or more files are stored on a minicartridge; the first file
  is the HPHPHP file, the second file is a directory of all the files
  on the medium. NOTE: This used to be the first file.   The
  directory (second) file has entries of 128 words for each file on
  the medium. The format is as follows.
      words 1-3: file name
            4: type   S - AS (ASCII)
                         R - BR (relocatable)
                         A - BA (binary absolute)
                         D - BN (data)
            5: blank
            6-128: description.

  All the files, including the directory, are stored on tape in FMGR
  'ST' format in the order in which they appear in the directory.

- Files may be restored by the '&UPDAT' FMGR transfer file (in an
  RTE-II, IVA and IVB environment only); this utility is described in
  the RTE Utility Programs Reference Manual.
      Basically &UPDAT works as follows:
      . the directory is stored into a file called &DRCTY,
      . RDNAM is loaded from the relocatable %RDNAM::32767,
      . RDNAM reads &DRCTY and passes to &UPDAT the file names,
      . &UPDAT purges these files (it expects the files on CRN
        32767 with security code RT),
      . &UPDAT uses the transfer file &PKDIS to pack CRN 32767,
      . &UPDAT stores each file off the minicartridge to disc.

      Note that &UPDAT and &PKDIS expect the minicartridge
      to be on LU 5 and all files to be stored onto CRN
      32767 with security code RT.

      To use a different LU:
      . edit &UPDAT to modify all references to LU 5, or
      . do an LU switch (system LU command or session SL
        command) to point LU 5 to the desired device EQT
        and subchannel before executing &UPDAT.

      To use a different CRN or Security Code:
      . edit &UPDAT and &PKDIS to provide the correct CRN
        and security code for the existing files as follows:

        - in &UPDAT, edit the line at the beginning of the

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transfer file that sets global 1G to RT and/or global
2G to 32767 (globals referenced throughout &UPDAT);
- in &PKDIS, edit the PK command to pack the appropriate
CRN.

- It is also possible (necessary for users in an RTE-L, XL, A and 6
environment) for the user to read the directory (it is an ASCII
file) and store the files individually onto disc with FMGR 'ST'
commands, giving the disc files the file names specified in the
directory file.   When creating the disc files, use the file type
according to the type given in the directory file. Also, it's
recommended that a file size of -1 be specified so FMGR can make
the file as big as it needs.
    For example:

Directory Entry	FMGR Command
FILEA S	:ST,5,FILEA:RT:32767::-1,AS
FILEB R	:ST,5,FILEB:RT:32767::-1,BR
FILEC A	:ST,5,FILEC:RT:32767::-1,BA
FILED D	:ST,5,FILED:RT:32767::-1,BN

Remember, when restoring the tape individually, either purge the
existing copy of the file before storing the new one to disc, or
store the file to a different CRN and purge the old file after the
transfer is successful.

5.3.4   Minicartridge in CI 'CO' format

To restore files from mini-cartridges in CI COpy format to disc, use
the following procedures:
    Step 1:

    CI> CO 4 HPHPHP   (copy the first file from LU 4)
         -or-
    CI> CN 4 FF   (skip the first file)

    Step 2:

    CI> CO 4 filename   (copy the second file - transfer file)

    Step 3:

    CI> LI,filename   (list and review the transfer file to
                            check all the values needed for globals
                            used in Step 4)

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Step 4:

CI> TR filename globals...
                        (transfer to the file to restore
                         the remaining files to the disc LU)

***** WARNING *****

*CI MINI-CARTRIDGES (CARTRIDGE TAPE UNITS) CANNOT
BE READ ON MUX TERMINALS. SYMBOLIC DEBUG/1000
(92860A #020) IS THE ONLY PRODUCT CURRENTLY
DISTRIBUTED ON CI MINI-CARTRIDGES.*

5.3.5   CS/80 CTD in 'FC' format

- Consult the Utilities Reference Manual on how to use the 'FC' utility.
- A CTD tape contains one or more products, each product being identified by a CRN (Graphics may have more than one CRN).
- The comment file created by FC on the CTD identifies which subsystems are stored on tape, what files belong to each subsystem, their revision code, their file type and their CRN. To list the comment file do:

    :RU,FC
    FC:LL,list device LU
    FC:LC,CTD LU
    FC:EX

- Example on how to use 'FC':

    :RU,FC
    FC:CO,-LU{::xx},::yy,V

         where   -LU = negative LU of the CTD
                      xx = CRN identifying the files for a given
                            product on CTD (reported by the "LC"
                            command under "FC").
                      yy = CRN on your disc.
                      V   = verify

    This will copy all the files from CTD with reference to CRN 'XX' onto the disc on CRN 'YY' and will verify each transfer. Files

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with duplicate name will not be copied and FMGR-002 errors will occur.

- This update will also include the addition of customized CTD's where each tape will include multiple subsystem updates. Information on updating, in addition to appearing here, is included in the FC comment file along with the CRN's and the customer order number. Each customized tape may contain files from one or more CRNs. In order to remove these, do the following:

   :RU,FC

   FC: CL,-xx   Command to list CRNs stored on FC tape, where xx is the source tape lu (e.g. CL,-13 if CS80 tape lu is 13).

   FC: GR
   FC: CO,-xx{::nnnnn},ddddd,VF   Commands to move CRNs from tape
      .   .   .   .   to destination disc cartridge.
      .   .   .   .   (e.g. CO,-13{::32754},30,VF
      .   .   .   .   moves CRN 32754 from tape to
      .   .   .   .   disc CRN 30). Use a CO command
   FC: CO,-xx{::nnnnn},ddddd,VF   for each CRN that is to be
   FC: EG   removed from tape.

"nnnnn" is the CRN on tape that you wish to move to disc, and "ddddd" is the destination disc CRN or LU on which the information will be stored (refer to Utilities Reference manual for more information on the FC program).

5.3.6 CS/80 CTD in 'TF' format

- Consult the Utilities Reference Manual on how to use the 'TF' utility.
- Consult the subsystem or language configuration guide. At A.84, there are no custom tapes. Therefore, only one product per tape.
- Each CTD tape contains only one product; different products are on different CTD's. Each product is under a different global directory.
- The HPHPHP file contains a list of all files on that tape.

- Example on how to use 'TF':

    CI> TF
    TF: CO,lu{/global1/@},/global2/@,V

              where   lu   = LU of the CTD
                         global1 = Global directory identifying the
                                     files for a given product on CTD.
                         global2 = Global directory on your system
                         V   = verify

This will copy all the files from CTD with global directory
/global1 onto the disc on directory /global2 and will verify each
transfer (If the directory names are the same, the second parameter
can be just "@"). Files with duplicate name will not be copied and
duplicate file errors will occur.   To replace duplicate files, use
the 'D' option.

Optionally, you could use the following.

    CI> TF
    TF: CO,lu,,V

This would copy all files from the tape(lu) to your disc under the
directory name that the files are stored on the tape.

5.3.7   CS/80 CTD in "VCP BOOTABLE" format

- Consult the appropriate Diagnostic Manual.

- "VCP BOOTABLE" means that these files are loaded directly from tape
  into memory, then executed by following the instructions   in the
  appropriate diagnostic manual. The CTD media update in this format
  replaces the older version of the media.

5.3.8   Diskettes in "Mountable FMGR CRN" format

- Mount the floppy with the FMGR 'MC' command.

5.3.9   Diskettes in "MOUNTABLE CI Volume" format

On CI floppies, /F/RESTORE_FLOPPY, a CI transfer file will restore
the floppy to hard disc. In addition, all CI floppies have /F as the
only global directory. This means that if the user is supposed to be
sent   a   file   /PASCAL/PASCAL.LIB,   he   will   instead   be   sent
/F/PASCAL/PASCAL.LIB.   All directories are subordinated to /F to
allow the CI transfer file, RESTORE_FLOPPY to put files in the
correct directory without having a duplicate directory error.

Restore software from a CI floppy to hard disc using the following
procedure.

    1.   Make sure the directory /F does not already exist on any CI
         mounted volume. If so, rename the directory.   The floppy
         has a /F global directory and if a /F already exists and is
         mounted before the user mounts his new floppy, CI will
         issue the message:

         Duplicate Directory /F

         and the contents of the floppy will be inaccessible.

    2.   CI> MC lu   mount the floppy lu
         CI> LI /F/RESTORE_FLOPPY   list and review the transfer f
                                      to check the value needed for
                                      global in the next step
         CI> TR /F/RESTORE_FLOPPY,CI_volume   transfer to RESTORE_FL
         CI> DC lu   dismount the floppy lu

         The transfer file will overwrite any software that already
         exists by the same name and destination path. Save or
         rename files that should not be overwritten.

         When the user transfers to RESTORE_FLOPPY, files are
         restored from the floppy to the hard disc. Files disc will
         NOT have the /F global directory.

         The user may ignore duplicate directory errors from the CI
         CRDIR commands.

The rationale for the /F scheme is as follows: Suppose a floppy is
sent without the /F directory and the top directory is called
/PASCAL. Now the user wants to restore the floppy to disc. The
destination directory can not be called /PASCAL because only one
/PASCAL can exist at one time. So, the user will have to call the

destination directory something else.   The /F scheme will prevent
this problem.

Products Affected, options 040-04x: 92081A Image/1000-II
                                    92833A Pascal/1000
                                    92857A Basic/1000C
                                    92860A Symbolic Debug/1000

Special note for 92861A DGL/1000 Version 2 and 92862A AGP/1000
Version 2: The above /F scheme was not implemented for the A.84 PCO
cycle.

5.3.10   Mag Tape in READR/SAVER format

- See above section "Minicartridge in READR/SAVER format".

5.3.11   Mag Tape in 'FC' format

- Consult the Utility Programs Reference Manual on how to use the
  'FC' utility.

- A Mag Tape contains only one product.

- Example on how to use 'FC':

    :RU,FC
    FC:CO,-8,-disc LU,V

  This will copy all the files for the product from the MT to the
  disc LU (or CRN) and will verify each transfer. Note that if files
  exist on that disc LU with identical names, those files will not be
  copied from the tape and FMGR-002 errors will occur.

5.3.12   Mag Tape in FMGR 'ST' format

- See above section "Minicartridge in FMGR 'ST' format".

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- &UPDAT was designed with minicartridges specifically in mind, but it can also be used on mag tapes if:

  . LU 5 is the mag tape LU, or
  . LU 5 is switched to point to the mag tape EQT, or
  . the user edits &UPDAT.

- The user can also store the files off the tape individually using the file names and types given in the directory.

- Note that some products may have a transfer file or other means for storing files off mag tape. See the appropriate Configuration Guide or Reference Manual for specific information.

5.3.13   Mag Tape in 'TF' format

- Consult the Utility Programs Reference Manual on how to use the 'TF' utility.

- A Mag Tape contains only one product.

- For an example of how to use 'TF', refer to the section CS/80 CTD in 'TF' format.