Welcome to the HP Measurement Coprocessor system revision D.00.03.
This system enables you to use your personal computer to develop and
run programs in one of the most powerful, yet flexible instrumentation
BASIC environments available.

If you are already familiar with the HP Measurement Coprocessor,
please note that this is a significant revision of the software to
support the version 6.2 of HP BASIC. It also fully supports the
BASIC PLUS product, which adds powerful graphical user interface
statements to HP BASIC. This software also fully supports both the
HP82300 Measurement Coprocessor and the HP82324 High Performance Meas-
urement Coprocessor.

This file is organized into the following sections:

        PRODUCT NOTES: information on configuring and running the
                                    HP Measurement Coprocessor Software.

        DOCUMENTATION CHANGES: up-to-date product information that wasn't
                                    included in the manual set.

        REVISION HISTORY: information on this and previous revisions
                                    of the software.

        KNOWN BUGS/LIMITATIONS: known problems with the software and
                                    workarounds for them.

We recommend that you read the important notes below to learn about
proper operation procedures, limitations, and new features.

**************************** PRODUCT NOTES ****************************

* The best way to get your system up and running is to insert Disk
  One into drive A: and type INSTALL. Then follow the process and
  respond to the prompts as required. If you encounter problems,
  refer to chapter 2 in the "Installing and Using HP BASIC/DOS 6.2"
  manual.

* EISA bus machines (such as the HP Vectra 486) have a configuration
  program to manage hardware resources. Disk 1 contains two EISA
  configuration files: !HWP1430.CFG for the 82300 Measurement Co-
  processor, and !HWP1470.CFG for the 82324 High Performance Meas-
  urement Coprocessor. Using these files may simplify installation
  of your measurement coprocessor. Do this before running the
  installation program as described above!

* If you have a HP82324 High Performance Measurement Coprocessor,
  previous versions of this software required you to configure
  your system to avoid addressing conflicts with a memory-mapped
  I/O channel on the Coprocessor. Because of continued support
  issues, this release does not use that I/O channel. PLEASE
  NOTE THAT THIS WILL NOT AFFECT THE PERFORMANCE OF YOUR SYSTEM.

* If you require the use of HP-HIL peripherals with your program
  other than an HP-HIL mouse, then you will need to read the
  "README.HIL" file on this diskette. If you have an HP-HIL

mouse, make sure the correct mouse driver is loaded before running BASIC.

* We have had reports of problems with accessing HP-LIF floppy diskettes on some of the newer PC's. If you experience difficulties, refer to the "README.LIF" file on this diskette.

* Some memory resident programs (TSR's) such as SIDEKICK(c), SUPERKEY(c) do not work when HP BASIC is running in the foreground. Also, concurrent operation with Novell NetWare(c) or Microsoft Windows is not supported.

* Programs supplied with your display system to blank the screen while not in use (HGC.COM, HPEGA.COM, etc.) should not be used when operating with HP BASIC. The screen may inadvertently be turned off and left off until the user returns to DOS (using <CTRL>F10) and strikes a key.

* Users of the VGA Monochrome display please note that gray-scale summing (the transformation of red-green-blue values into gray-scale values) is disabled in the default configuration. This is done to prevent the default alpha screen (ALPHA PEN 4) from appearing too dim. To enable gray-scale summing copy the file NTSC.CON in your installation directory onto BLP.CON, also in the same directory, and reboot BASIC. After that, you will probably want to change the alpha pen to 1 .(white).

* The HP Measurement Coprocessor software includes the utility LIFINIT for initialization of LIF floppy disks of any size and capacity. A description of this utility as well as examples of its use can be found in the file LIFINIT.DOC on the "Manual Examples, LIFINIT, and Selected CSUBs and Utilities" disks.

* BASIC programs that perform I/O on DOS files while running in BACKGROUND mode may conflict with certain foreground applications. See your manuals and the file BACKGND.DOC on the "Manual Examples, LIFINIT, Selected CSUBS" disk for more information on supported applications and possible limitations.

* The CRT commands ALPHA HEIGHT <n> and KEY LABELS OFF may produce incorrect results if executed in background. To guarantee correct results, execute the appropriate commands to restore the desired screen when re-entering BASIC.

* If you are upgrading from an old version of the HP BASIC Language Processor and are an SRM user set the PC I/O devices to Int Level 6 using the CONF utility (factory default is level 6 for PC HPIB and PC Serial beginning with release C.00.00).

* Serial TRANSFERs or interrupts are not supported. Instead, ENTERs and OUTPUTs are recommended. However, live keyboard operation may interfere with serial I/O and should be avoided. The live keyboard may be disabled before serial ENTER and OUTPUT statements with a CONTROL 2,7;0 command, and enabled thereafter with a CONTROL 2,7;1 command. For example

```
10   CONTROL 2,7;0      ! Disable keyboard
20   ENTER 9;A$         ! Enter a string from SC 9
30   CONTROL 2,7;1      ! Enable keyboard
```

Revision D.00.03 defect fixes and enhancements:

- The boot loader program B0.EXE no longer uses the memory-mapped
  I/O channel. This simplifies system configuration and does not
  affect emulator performance. Boot code loading takes about 3
  seconds instead of 1.5.
- The HPBLP.SYS device driver does a less intrusive card test when
  looking for coprocessors in the system. This fixes problems
  with SCSI controllers at I/O address 330h.
- Fixed: Pressing CAPS LOCK or NUM LOCK on certain old Compaq
  machines would hang the system.
- Fixed the SET CHAR statement in the CRTX binary.
- Fixed: On some slower (286, 386SX) machines, the keyboard's
  typematic function would lose track of the NUM LOCK status.
- On machines with a disk caching program installed (such as
  SMARTDRV.EXE), the INSTALL program's auto-reboot feature would
  reboot the machine before the changes to AUTOEXEC.BAT and
  CONFIG.SYS were written to disk. The INSTALL program now
  prompts the user to press CTRL+ALT+DEL.
- To reduce the probability of keyboard-related problems, the
  HIL-loop emulation code is disabled by default. Users who
  require support of non-mouse HIL devices can remove a line
  from BLP.CON to re-enable this code.
- An alternative method of accessing the ROM BIOS for LIF floppy
  access is provided by adding a line to the BLP.CON file. This
  fixes problems with some new BIOS versions (such as in the
  Toshiba portables), but breaks older BIOS versions (such as
  the older Compaq DeskPros). The older method is enabled by
  default for compatibility.

Revision D.00.00 defect fixes and enhancements:

- HP BASIC 6.2 with wildcards and HP BASIC PLUS fully supported
- Mouse support improved -- all PC mice should work properly
- EXECUTE, QUIT, and BYE keywords, plus new SYSTEM$() functions
  supercede DOS command port (select code 19) functionality
- Some DOS 5.0 configurations would hang during HPBLP.SYS initiali-
  zation due to a bug in HIMEM.SYS; HPBLP.SYS now has a workaround
  for this situation.
- HPBLP.SYS device driver will no longer hang if pause key pressed
- Boot display fixed for Hercules monochrome display adapter

Revision C.01.01 defect fixes and enhancements:

- The B0.EXE boot loader program no longer hangs the system when
  Upper Memory Blocks (UMB's) are used in DOS 5.0 (and other
  memory managers implementing the XMS 2.0 specification).
- The D1171B HP-HIL card is now supported in the Vectra 286/12.
- The GRiD GRiDCASE 1535 portable with enhanced CGA-compatible LCD
  display is now supported.

Revision C.01.00 defect fixes and enhancements:

- The new Vectra 386/25 and Vectra 486 models are fully supported.
- The new 82324A High-Performance Measurement Coprocessor is fully
  supported.
- Systems on SRM or external HP-IB disks are now found reliably on
  fast PC's (20Mhz+).
- The HP-HIL barcode reader no longer drops characters.

* The performance of a serial ENTER statement may be greatly enhanced
  by executing the following once at the beginning of your program:

          10 STATUS 9,10;Sts   ! Clear UART error and status flags

* With the enhanced 101/102 key European localized keyboards,
  certain characters on the front face of keys and to the right side
  of the key caps are accessed using the CTRL key in BASIC (hold down
  CTRL and also press the desired key). These keys are accessed using
  the ALT modifier in DOS. Additionally, to display all extended
  characters in the combined modes the BASIC command "CONTROL CRT,11;1"
  should be executed to disable the default CRT character mapping.
  See chapter 5 in the manual "Installing and Using HP BASIC/DOS 6.2".

* The default keyboard mapping for the HP-Vectra Swiss keyboards
  is Swiss/German. To change to Swiss/French you should copy the
  file SWISFREN.CON in the installation directory onto BLP.CON.

*********************** DOCUMENTATION CHANGES *************************

Language Reference, Vol 2.:

    P. S-110:   SYSTEM$("CRT ID") returns "6: 80HCGB15 " for both
                 color and monochrome VGA displays. Single-plane
                 displays (such as Hercules) return with a space
                 instead of the letter "M". (This preserves compat-
                 ibility with previous releases.)

    P. S-112:   SYSTEM$("SYSTEM ID") always returns "PC300 " instead
                 of "PC300" for the 82300 and "PC300:30" for the 83234.
                 (Again, this is to preserve compatibility with previous
                 releases.) Use SYSTEM$("VERSION:MCP_HW") to determine
                 which Measurement Coprocessor is being used.

                 Also, SYSTEM$("SERIAL NUMBER") returns "111111111"
                 instead of the null string when no HP HIL ID module
                 is present.

    P. S-114:   The following SYSTEM$ keyword has been added (for
                 RMB/DOS 6.2 only):

                 GETENV:<varname>   Returns value of a DOS environment
                                     variable; if varname has not been
                                     set, a null string is returned.

                 For example, SYSTEM$("GETENV:PATH") returns your
                 DOS path (e.g. "C:\DOS;C:\BLP").

Installing and Using RMB/DOS 6.2:

    All pages: Many references are made to the "Manual Examples"
                 diskette. The files on this disk have been grouped
                 into subdirectories. See the INS0 file on that disk
                 for detailed information.

    P. C-13:   See the PCBLOCK.DOC file in the CSUBS subdirectory on
                 the "Manual Examples" diskette for updated information
                 on these routines.

*********************** REVISION HISTORY ****************************

- The cursor no longer appears in odd places during boot on certain PC's.
- The Num Lock and Caps Lock indicators on the keyboard now toggle correctly on fast PC's (20Mhz+).
- The install program no longer loops continuously on reboot if the HPBLP.SYS device driver installs correctly but no good cards are recognized.
- The WAIT statement now gives a much more accurate delay: see the "Porting Guide for the Measurement Coprocessor" manual for more information.

Revision C.00.02 defect fixes and enhancements:

- The new Vectra 286/12 (ES/12 replacement) is fully supported.
- The new Super VGA adapters are supported in 640x480 resolution.
- HP-HIL mouse READ LOCATOR problem introduced in C.00.01 is corrected.
- Alphanumeric output to the screen is 25% faster.
- Added a PCBLOCK csub for faster on-screen bit block moves.
- HPWLIF filenames are case sensitive.
- Enhanced ASCII to TEXT file conversion utility (example program).
- Added ID text to the zero length files INS1..INS4.
- A DFS "media overflow error" has been corrected.
- CAT of HFS floppies on Vectra drives produces the correct output.

Revision C.00.01 defect fixes and enhancements:

- The serial mouse buttons are recognized by the READ LOCATOR statement.
- Repeated execution of CAT;NAMES no longer causes a system error.
- CAT will not show negative values for some BDAT file sizes.
- Multi-com supports DOS 4.01.
- Multi-com routine Blp_set_idle is now included in ADVLIB.
- Popcom works with EGA set to Hercules emulation mode.
- BASIC timer is now maintained during DOS access via OUTPUT 19.
- Local keyboards are now recognized by new sw and old boot roms.
- HP-HIL knob works correctly.
- Num-lock & Caps-lock lights updated in BASIC (DIN keyboards only).
- Returning to BASIC in separate mode no longer leaves screen blank.
- ALPHA HEIGHT and KEY LABELS work correctly returning from background.
- LIFINIT cosmetic fixes (blinking error & blue screen).
- ASCII to text file conversion utility (example program).

********************* KNOWN BUGS / LIMITATIONS ***********************

Problem:

    A memory volume initialized with less than 38 sectors will cause "Error 84: Record Not Found" whenever it is accessed.

Workaround:

    Initialize a memory volume with at least 38 sectors.

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Problem:

    While BASIC is running in the background, starting up LOTUS 1-2-3 in 43- or 50-line mode will cause the PC to hang.

Workaround:

Do not use 43- or 50-line mode in LOTUS while running BASIC in background mode.

Problem:

Sending a large amount of data to a serial printer will cause a printer timeout message. This message will occur more frequently on faster PC's than on slower PC's.

Workaround:

1) Use a parallel printer, or
2) use WAIT statements to cause delays between outputs to the printer, or
3) Slow down the CPU speed of the PC.

Problem:

The comma (,) key on the numeric keypad of the Swedish keyboard is incorrectly mapped to a period (.).

Workaround:

Use the CONF program to remap the numeric keypad '.' to a ','.

Problem:

On the Zenith Z100, running BASIC gives a "Could not load ACTDISP" message after CONF is run.

Workaround:

Enter the DOS command "MODE CO80" after running CONF to reset the CRT controller before running BASIC.

*************************** TRADEMARKS ********************************

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