

PERKIN-ELMER

PERKIN-ELMER SERIES 3200

WRITABLE CONTROL STORE

(WCS) SUPPORT

SOFTWARE PACKAGING INFORMATION DOCUMENT

Consists of Packaging Information For:

| | |
|-------------------------------------|--------------|
| Magnetic Tape (800 BPI) Package | 04-174M31R01 |
| Magnetic Tape (1600 BPI) Package | 04-174M71R01 |
| Disk (16Mb) Package | 04-174MD1R01 |
| Disk (16Mb with IDC Format) Package | 04-174MG1R01 |
| Disk (25Mb) Package | 04-174MJ1R01 |

04-174M95R01

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PREFACE

N O T E S

1. Please note additional copies of this document may be created by using the EDIT/32 Utility.

Example:

```
LOAD EDIT32  
TASK EDIT32  
START  
GET WCS.M95  
SAVE print-device:  
END
```

The user should check his configuration for the particular print device in use.

2. New, revised or updated material will be denoted by bars appearing in the left or right margins of this document.

1 PRODUCT IDENTIFICATION

Product: Perkin-Elmer Series 3200
Writable Control Store (WCS)
Software Package

Perkin-Elmer Part Number: 04-174 R01

2 AVAILABLE PACKAGES

The Perkin-Elmer Series 3200 Writable Control Store (WCS) Software Packages currently available are:

| <u>Part Number</u> | <u>Package Description</u> |
|--------------------|--|
| 04-174M31R01 | Perkin-Elmer Series 3200 Writable Control Store (WCS) Software Package Functional Programs (9-track, 800 BPI Magnetic Tape) and Documentation Package |
| 04-174M71R01 | Perkin-Elmer Series 3200 Writable Control Store (WCS) Software Package Functional Programs (9-track, 1600 BPI Magnetic Tape) and Documentation Package |
| 04-174MD1R01 | Perkin-Elmer Series 3200 Writable Control Store (WCS) Software Package Functional Programs (16Mb Disk) and Documentation Package |
| 04-174MG1R01 | Perkin-Elmer Series 3200 Writable Control Store (WCS) Software Package Functional Programs (16Mb Disk with IDC Format) and Documentation Package |
| 04-174MJ1R01 | Perkin-Elmer Series 3200 Writable Control Store (WCS) Software Package Functional Programs (25Mb Disk) and Documentation Package |
| 04-174M99R01 | Perkin-Elmer Series 3200 Writable Control Store (WCS) Documentation Package |

3 DOCUMENTATION

The Perkin-Elmer Series 3200 Writable Control Store (WCS) Support Software Package Documentation Package, 04-174M99R01, consists of the following manuals:

| <u>Publication Number</u> | <u>Revision Level</u> | <u>Publication Name</u> |
|---------------------------|-----------------------|---|
| 48-096 | R00 | Perkin-Elmer Series 3200 Writable Control Store (WCS) Support Software Reference Manual |
| 48-096 F01 | R00 | Perkin-Elmer Series 3200 Writable Control Store (WCS) Support Software Reference Manual Update |
| 04-174M95 | R01 | Perkin-Elmer Series 3200 Writable Control Store (WCS) Support Software Packaging Information Document |

4 FILE PROGRAM PACKAGE

The Perkin-Elmer Series 3200 Writable Control Store (WCS) Support Software Package includes the following items:

| <u>File ID</u> | <u>Part Number</u> | <u>Revision</u> | <u>Program Description</u> |
|----------------|--------------------|-----------------|---|
| WCS.M95 | N/A | N/A | M95 Print File (see page ii) |
| MCAL3220.OBJ | 03-236 | R00-00 | Perkin-Elmer Model 3220 Microcode Assembler |
| MCAL3245.OBJ | 03-237 | R00-00 | Perkin-Elmer Model 3240/3250 Microcode Assembler |
| MCAL3230.OBJ | 03-249 | R00-00 | Perkin-Elmer Model 3230 Microcode Assembler |
| WCSLINK.OBJ | 03-479 F01 | R01-00 | Perkin-Elmer Series 3200 WCS LINK Utility for build- ing WCS image files from microcode object files |
| WCSAID45.OBJ | 03-479 F02 | R01-00 | Perkin-Elmer Models 3240, 3250, 3200MPS CPU WCS Support AIDS Program |

| <u>Filename</u> | <u>Part Number</u> | <u>Revision</u> | <u>File/Program Description</u> |
|-----------------|--------------------|-----------------|--|
| WCSAID30.OBJ | 03-479 F03 | R01-00 | Perkin-Elmer Models 3230, 3200MPS APU WCS Support AIDS Program |
| WCSAID20.OBJ | 03-479 F04 | R01-00 | Perkin-Elmer Model 3220 WCS Support AIDS Program |
| MPSLPFM.OBJ | 03-479 F05 | R01-00 | Perkin-Elmer Model 3200MPS Loader and Power Fail Monitor |
| WCSUPP45.OBJ | 03-479 F06 | R00-00 | Perkin-Elmer Model 3240, 3250 WCS Support Program |
| WCSUPP30.OBJ | 03-479 F07 | R00-00 | Perkin-Elmer Model 3230 WCS Support Program |
| WCSUPP20.OBJ | 03-479 F08 | R00-00 | Perkin-Elmer Model 3220 WCS Support Program |
| WCSLPFM.OBJ | 03-479 F09 | R00-00 | Perkin-Elmer Models 3220, 3230, 3240, 3250 WCS Loader and Power Fail Monitor |

5 UNPACKAGING AND INSTALLATION

5.1 Disk (16 and 25Mb)

The package files as listed in the preceding section are labelled 'WCS' for the 16 and 25Mb disks. There is no unpackaging procedure for disk packages as the software is immediately usable.

5.2 Magnetic Tape (800 and 1600 BPI)

The above files are supplied on a magnetic tape in OS/32 Backup Utility format. The unpackaging procedure involves copying the files from tape to a user disk utilizing OS/32 Backup.

After selecting a disk onto which the files are to be copied, review the disk filenames to ensure that they do not conflict with the filenames in this package as listed in Section 4 of this document. Rename any conflicting filenames to some other appropriate name.

NOTE

The files in the supplied Perkin-Elmer Series 3200 WCS Support package must not be renamed because the Perkin-Elmer Series 3200 WCS command substitution

system (CSS) files require specific filenames as listed in the Package Description section.

To unpackage the files from the system console or Multi-Terminal Monitor (MTM) terminal, mount the supplied magnetic tape and run OS/32 BACKUP Utility via the following commands:

```
LOAD BACKUP  
TASK BACKUP  
START ,IN=dev1:,OUT=dev2:,,LIST=dev3:,VERIFY
```

where:

dev1 is the device name for the magnetic tape drive
dev2 is the device name for the disk
dev3 is the device name for the printer or list device

Note that all device names have the standard OS/32 format. They are dependent on the particular configuration of the user system and can be determined by entering the OS/32 command 'DISPLAY DEVICES' at the console or terminal.

NOTE

In running OS/32 BACKUP from an MTM terminal, the user must sign on to an account which has bare disk access and the task account privilege enabled. Account 255 will always have these privileges.

For further information on BACKUP, see Chapter 5 of the OS/32 System Support Utilities Reference Manual, Publication Number 48-031.

5.3 Post-Installation Procedures

Before using the installed software, it is recommended that the files be copied for archiving.

6 ESTABLISHING THE MICROCODE ASSEMBLER

The following sequence of LINK commands should be used to establish the Microcode Assembler tasks for each processor:

- o For LINK R00-01 or lower revision:

```
ESTABLISH TASK
OPTION SYSSPACE=FFFFFF,WORK=5000
INCLUDE MCAL32xx.OBJ
MAP PR: [or any other Print device]
BUILD MCAL32xx.TSK
END
```

- o For LINK R01-00 or higher revision:

```
ESTABLISH TASK
OPTION SYSSPACE=XFFFFFF,WORK=X5000
INCLUDE MCAL32xx.OBJ
MAP PR: [or any other Print device]
BUILD MCAL32xx.TSK
END
```

where:

MCAL32xx stands for MCAL3220, MCAL3230 or MCAL3245

7 ESTABLISHING THE WRITABLE CONTROL STORE (WCS) SUPPORT PROGRAMS

Of the following WCS Support Programs, only WCS Support Aids is exclusively a feature of OS/32 7.1 and higher revisions and as such will not run under previous revisions of the OS.

7.1 Establishing WCS Support Aids With User Programs

The WCS Support Aid Program must be established as a D-task along with the user program which exercises the microcode to be debugged.

Using LINK R01-01 under OS 7.1, or LINK R01-02 under OS 7.2, enter:

```
ESTABLISH TASK
OPTION DFL,FL,DTASK,WORK=X2000
MAP PR: [or any other Print device]
IN USER.ORJ
IN WCSAIDxx.OBJ
BUILD USER.TSK
END
```

where:

WCSAIDxx stands for WCSAID20, WCSAID30 or WCSAID45

NOTE

WCSAID30 should only be used with 3230 systems and APUs on the 3200MPS equipped with 4K WCS. If WCSAID30 is run on a 3230 system equipped with 2K WCS, unpredictable results and/or system crash may occur.

7.2 Establishing WCSLINK

To establish WCSLINK as a user task, enter the following LINK commands:

```
ESTABLISH TASK
OPTION WORK=2000
INCLUDE WCSLINK.OBJ
MAP PR:                               [or any other Print device]
BUILD WCSLINK.TSK
END
```

NOTE

WCS LINK assumes that 3230 systems and auxiliary processing units (APUs) on the 3200MPS are equipped with 4K of WCS.

7.3 Establishing the Multi-Processor System Loader and Power Fail Monitor (MPSLPFM)

The user must establish the multi-processor system loader and power-fail monitor (MPSLPFM) as a resident, D-task with a priority higher than any other task which uses WCS. The following sequence of commands should be used to establish MPSLPFM:

```
ESTABLISH TASK
MAP PR:                               [or any other Print device]
INCLUDE MPSLPFM.OBJ
BUILD MPSLPFM.TSK
END
```

7.4 Establishing the Writable Control System Loader and Power Fail Monitor (WCSLPFM)

The user must establish the WCSLPFM as resident, executive task with a priority higher than any other task which uses WCS. The version of LINK used should be compatible with the operating system being used. The following sequence of commands should be issued to LINK in order to establish the WCSLPFM.

```
ESTABLISH TASK
OPTION ET,RES,PRI=(11,11),ABS=0
MAP PR:                               [or any other Print device]
INCLUDE WCSLPFM.OBJ
BUILD WCSLPFM.TSK
END
```

7.5 Establishing the WCS Support Programs

The user must establish the WCS Support Programs as resident, executive tasks with a priority higher than any other task which uses Writable Control Store. To do so, he must use a version of LINK compatible with the operating system he is using. The user should enter the following sequence of commands to LINK in order to establish the WCS Support Program for each of the processors:

```
ESTABLISH TASK           Establish task with initial priority
                        of 11, maximum priority of 11.

OPTION PRI=(11,11)

OPTION ET,RES,FL,DFL    Make it an executive, resident task.
                        Specify the floating point options
                        if so equipped.

OPTION ABS=0            The UDL is already included in the
                        object file (LINK will respond with
                        a warning which can be ignored.)

OPTION WORK=2000        Get storage for start options

INCLUDE WCS'PPxx.OBJ    Include the WCS Support Program
                        version to be established.

MAP PR:                Get a map of the task using print
                        device designated in system
                        configuration

BUILD WCSUPPxx.TSK     Build the task

END
```

where:

WCSUPPxx stands for WCSUPP20, WCSUPP30 or WCSUPP45

For WCSLPFM, MPSLPFM and WCSUPPxx, it is sufficient to establish the task with priority higher than any other task which uses WCS.

Note that WCSLPFM and WCSUPPxx tasks have been established using an ABS=0 option. Setting ABS to any other value will lead to illegal instructions when the task is run. Furthermore, if MPSLPFM, WCSLPFM and WCSUPPxx tasks are established as non-resident or if the tasks are deleted from memory, the task must be reloaded and restarted after a power failure in order to initialize the contents of WCS. Failure to do so will leave the contents of WCS undefined and lead to unpredictable results and system crashes.