P800M Programmer's Guide 2
Volume IV: Disc Real Time Monitor

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This is volume IV of a four-volume set dealing with the Disc Operating System (non-real time and real time) for the P800M series. It describes the Disc Real Time Monitor.

The other volumes of this set, to be used in conjunction with this one, contain the following:

- Volume I: Disc Operating Monitor
- Volume II: Instruction Set
- Volume III: Software Processors

- Volume VI: Extended Disc File Management

Other books pertaining to the P800M series are:

P852M System Handbook
P856M/P857M System Handbook
P800M Operator's Guide
P800M Interface and Installation Manual
P800M Software Reference Data

Great care has been taken to ensure that the information contained in this manual is accurate and complete. However, should any errors or omissions be discovered, or should any user wish to make a suggestion for improving this manual, he is invited to send his comments, written on the sheet provided at the end of the book, to:

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at the address on the opposite page.

PART 1 MONITOR USE

The Disc Real Time Monitor (DRTM) is a disc-oriented system which is intended to supervise the execution of user application programs in a real time environment. It is assumed that these programs have been developed and pretested under the DOM.
The system is based on a structure of priorities, incorporating hardware interrupt levels and software priority levels, where up to 48 hardware interrupt signals and 15 software user levels can be handled. This system is enhanced by the socalled scheduled label feature.
The monitor is of modular structure to allow the user to easily adapt it to his particular application.

The P800M Disc Real Time Monitor has been designed to supervise the execution of pretested programs in a real time environment, on the basis of a priority system consisting of up to 48 hardware interrupt levels and 14 software priority levels. The DRTM is compatible with the Disc Operating Monitor (DOM), i.e. programs can first be developed and partly tested under the DOM, then used under the DRTM.

There is no memory protection, so all programs run in system mode. It is assumed that they have all been debugged and pretested. There is hardly any distinction between system and user programs; not all system programs are confined to any particular level, nor are user-written programs. It is therefore better to speak of standard system programs and application programs. In Part 2 of this manual some guidelines are given as to the interrupt levels to which some standard system programs can best be connected.
The priority system incorporates hardware interrupt lines and software priority levels:

- 0 to 47 are the levels for the hardware interrupt lines
- 48 is the level for interruptable monitor service routines
- 49 - 62 are software priority levels for system and application programs
- 63 is the idle task level.

The highest priority level is 0, so hardware interrupts will always overrule software level programs.
The interrupt routines which service the internal and external hardware interrupts are connected to levels 0 to 47.

Some of the interrupt routines are standard; the user can easily include interrupt routines written by himself, however. Incoming interrupts are handled by hardware and receive control on the basis of the