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Identification

Drum Interrupt Handler  
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Purpose

The Drum Interrupt Handler is called by the Interrupt Interceptor when a drum interrupt occurs. Its only task is to wake up the File System Device Monitor Process (BG.11).

Interrupts

Each drum controller generates three unique interrupts. The control interrupt is generated whenever a control fault is detected. Control faults cause the drum to be disconnected and occur for the following reasons:

1. The memory controller detected an illegal action (generally memory parity error) during a control sequence memory access.
2. No sector address match or sector mark is found within two revolutions.
3. The drum is momentarily or permanently inoperable due to power loss.
4. The drum has specified an address beyond the present capacity.
5. The memory controller has failed to respond to a memory access request within one-two sector times during a control word access.
6. A DCW command could not be interpreted as a valid command.

A second interrupt type, the data interrupt is signaled by the drum controller when a data fault condition exists. Data faults do not cause the controller to disconnect the drum. The data faults are:

parity fault - A parity error occurred during a read or idle DCW. Data parity transmitted from the drum did not match parity generated by the controller.

write fault - This fault indicates that data was not written in the drum.

transfer timing fault - A transfer timing error occurred during a read or write DCW. Either data transfer to or from memory did not occur in time to maintain synchronism with the drum rotating element or an illegal action was detected by the memory module during a data transfer.

The third unique interrupt, the programmed interrupt, is caused by the DCW commands:

read and interrupt  
write and interrupt  
idle and interrupt

These conditions do not cause the controller to disconnect the drum.

### Interrupt Handling

The Interrupt Interceptor calls the Drum Interrupt Handler as follows:

call drum\_handler (active\_device\_number, interrupt\_number, time\_ptr).

drum\_handler - entry point to the drum interrupt handler

drum\_device\_number - a unique number (precision 18 bits) specifying which drum caused the interrupt. Drums are numbered sequentially starting at 1.

interrupt\_number - a unique number (precision 18 bits) specifying the interrupt.  
= 1, control interrupt  
= 2, data interrupt  
= 3, programmed interrupt

time\_ptr - a pointer to an integer (precision 71 bits) representing the time that the interrupt was recognized.

When the Drum Interrupt Handler is entered the handler determines the system drum causing the interrupt (active device number) and the interrupt which occurred (interrupt number). The Drum Interrupt Handler then sets the device signal for this active device and interrupt number by calling the device signal table manager. (See BD.8.05). The Drum Interrupt Handler then calls entry point wakeup in the Traffic Controller to wakeup the Drum Manager Process.

Drum Interrupt Data Block

This data block contains for each drum three device indexes, which correspond to the three types of interrupts which may occur. It is the primary source of information during a drum interrupt and must be wired down.