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Author: Peter Jørgensen

Title:

RC8000 BACKING STORE AREA PROCESS

Keywords: RC8000, Backing Store Area, External Process.

Abstract: This paper describes the conventions of an area process.

(10 printed pages)

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References

1. RCSL 31-D528
RC8000 Disc Process

Backing Store Area

General Rules

The process kind is 4. Sense, position, and input operations can be initiated by an internal process that is a user of the area process. An area process accepts input, sense, and position messages simultaneously from more than one process provided no process has reserved it. Output operations require that the area process has been reserved. The error recovery procedure is similar to the one used when accessing the disc directly, see ref. 1 (all references to ref. 1 are only valid for areas on RC82xx).

Mode

The mode field of messages is used for specifying special actions and consists of a sum of one or more of the following values:

- 2 specifies suppression of automatic error recovery. Will override mode 4. See ref. 1.
- 4 specifies limited error recovery on parity error occurring at an input operation. See ref. 1.

The normal mode (zero) implies:

- full error recovery.

Sense Operation

The device on which the area is stored is sensed.

Input Operation

A number of consecutive segments of 256 words each is input to a storage area within the sending process. The first segment number relative to the beginning of the area on the backing store is also given in the message.

The segments need only be consecutive in a logical sense, thus securing that the user does not have to be aware of the size and position of the slices of an area.

The operation transfers the maximum number of segments for which there is room within the storage area, i.e.

$$\begin{aligned} \text{number of segments} = \\ (\text{last storage address} + 2 - \text{first storage address}) // 512 \end{aligned}$$

If the input block thus specified exceeds the upper limit of the area on the backing store, input is performed only of that part of the block that is within the area. In any case the actual number of halfwords transferred is given in the answer.

The number of halfwords transferred is a multiple of 512. The number of characters is defined as three times the number of words transferred.

If the first segment is outside the limits of the area, input is not initiated, but the answer contains a status bit, end of area, and the block length zero.

Output Operation

Equivalent to the input operation.

Position Operation

The read/write heads on the device on which the area is stored are moved to the segment number given in message (specified relative to the beginning of the area on the backing store).

If the segment is outside the limits of the area, no operation is initiated, but the answer contains a statusbit, end of area.

Status Bits

0	intervention	(only RC82xx)
1	parity error or hard error	
2	timer	(only RC3652)
2	synchronization error (position error)	(only RC82xx)
3	data overrun	
5	end of area	
10	read error (address error)	(only RC3652)
11	disc error (mode 4, input operation)	(only RC82xx)

Messages and Answers

<u>operation:</u>	<u>message:</u>	<u>answer:</u>
sense	0<12 + mode	statusword 0 0 i/o result current status event status detailed status
input	3<12 + mode first storage address last storage address first segment number	statusword number of halfwords number of characters i/o result current status event status detailed status
output	5<12 + mode first storage address last storage address first segment number	statusword number of halfwords number of characters i/o result current status event status detailed status

operation:message:answer:position
(only RC82xx)

8<12 + mode

statusword

irrelevant

0

irrelevant

0

segment number

i/o result

current status

event status

detailed status

The information supplied in the answer from fourth word and on is normally only interesting to test programs. See ref. 1.

RETURN LETTER

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Information Department
Lautrupbjerg 1
DK-2750 Ballerup
Denmark