

Title:

Flexible disc MT Emulator
Reference Manual

 **REGNECENTRALEN**

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RCSL No: 43-GL 7420

Edition: 78.06.04

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Keywords:

RC3600, RC3750, Flexible disc, magnetic tape, emulator,
preprocess.

Abstract:

This manual is a description of the message interface to
a preprocess, which emulate the RC3600 magnetic tape driver,
and usage of zones (filedescriptors) is added too.

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1. GENERAL DESCRIPTION.

1.

The process is a preprocess to the RC3750 Flexible disc driver and emulates the RC3600 Magnetic tape driver with small limitations.

The disc to be used must be formatted as single sided, 26 sectors per cylinder and with 128 bytes sector length.

All transfers requested by the user must be with a bytecount which is an integral number of 128.

As the flexible disc is not divided in files in any physical way, the process maintains an index table, which contains the physical start-sector number of each file. This index block is placed at sector 24 on the disc, or at 25/26 alternatively in case of bad sectors. As the index block is 128 bytes long the maximum number of files on a single disc is limited to 63.

The index table is organized as seen in fig. 1.

As the index table does not contain any information about the block length used when the file was written, the files must be read with the same block length as used when they were written.

If the transfers take place with byte counts different from 128, read/write must be done sequential from the file start (block = 1).

It should be noted that the data written is not checked with read after write as on magnetic tape.

file no.	a	b	c
1	+26	26	26
2	-26	131	131
3	-26	154	154
4	-26	300	300
5	-26	304	304
6	-26	-304	360
7	-26	-304	372
8	-26	-304	400
9	-26	-304	602
61	-26	-304	1730
62	-26	-304	1820
63	-26	-304	1930
64	-26	-304	2002

Fig. 1: File index table.

- a) Initialized file table (no files written).
- b) Partly used disc.
Files 1 to 4 are written.
- c) Full disc. All files are written.

2. CONTROL MESSAGES.

2.

2.1 Reservation.

2.1

If 1b13 is set in mess0 and mess1 <> 0 the sender of the message is inserted as reserver of the process. If mess1 = 0 the reservation is cleared, enabling other processes to reserve the process.

The flexible disc driver is not reserved as a number of mag-tape emulators can use the same driver.

2.2 Conversion.

2.2

Conversion on input/output is not supported.

2.3 Termination.

2.3

If a control message is received with termination bit set (1b11) the file index table is written back with updated file information and the file is incremented with one and the block is set to 1.

As the index table is read when the first position or transfer is received, the table can be initialized by sending a reservation message and then a termination message or by starting write on file number 1 and block number 1.

2.4 Position.

If a control message is received with the position bit set (1b10), the logical position is set to the file number given in mess2 and the block number given in mess3.

When the physical position on the disc is calculated the bytecount of the last input/output transfer is used, i.e. if the last transfer was done with $n * 128$ bytes and the wanted block position is taken from mess3 the position at the flexible disc driver is set to

$$(\text{INDEX}(\text{MESS2}) + n * \text{MESS3}) // n$$

If mess3 is equal to -1 a back space file is executed, i.e. the position is set to file = mess2 -1 and block is set to the block number after the last written block in file mess2 -1. The block number is calculated by use of the bytecount given in the last transfer ($n * 128$) as:

$$(\text{INDEX}(\text{MESS2}) - \text{INDEX}(\text{MESS2} - 1)) // n + 1$$

If the index table has not yet been transferred it is read when the first position message is received.

2.5 Disconnect.

When the disconnect bit is set in a control message the position is reset to file = 1 and block = 1.

3. TRANSPUT.

3.

Before read/write is requested the position must be defined by use of a setposition control message.

3.1 Read.

3.1

Operation:

MESS0 EXTRACT 2 = 1

The block given by the current block number is transferred to the memory area given by the byte-address in mess2 and the byte-count in mess1. The block number is incremented with one if the transfer is successful.

3.2 Write.

3.2

Operation:

MESS0 EXTRACT 2 = 3

The area given by its byte-address in mess2 and the bytecount in mess1 is transferred to the block given by the current block number. The block number is incremented by one, if the transfer is successful.

4. ANSWERS.

Status is returned in mess0, and the number of bytes transferred in mess1.

In all answers mess2 is the current file-number and mess3 the current block-number.

4.1 Status.

- 1b0: The flexible disc drive is disconnected.
- 1b1: Off-line, the cartridge door is or has been opened or the drive is empty.
It is impossible to read or write the index block on the disc.
- 1b5: Write protected. The disc is write protected.
- 1b6: The flexible disc driver or the process itself is reserved by another process.
Write is rejected because of a write protected disc.
- 1b7: End-of file. The read operation was unsuccessful as there are no more blocks in the file.
The current file is incremented with one and the block is set to 1.
- 1b8: Block length error. The bytecount is not a multiple of 128.
- 1b9: Data late.
One or more characters were lost due to data channel overload.

- 1b10: Parity error.
The data CRC was not ok.
- 1b11: End medium.
The current block is placed on the last disc
cylinder.
Only returned on read, write or position messages.
- 1b12: Position error.
The wanted position is not defined in the index
table.
- 1b14: Timeout.
A time consuming operation has not been completed
within 3.0 seconds.

5. MUSIL Usage.

Reservation is done with the MUSIL procedure OPEN.

The position on the disc is defined by use of procedure SETPOSITION with the wanted file and block position as parameters.

The procedure CLOSE used with release parameter = false (=0) will update the index block, increment the file-count and set the block-count equal to 1, if the zone is opened for output. The index table is not updated if the zone is opened for input.

CLOSE procedure called with a non-zero release parameter acts as CLOSE (false) and the driver is released.

