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pp: 1 : 11
Author: Knud E. Hansen
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RC 35-222

Interface between RC 3500 and DP 2230 Line Printer

GENERAL INFORMATION

Keywords: RC 3500 interface, Line Printer, LPI 101, General Information.

Abstracts: This paper describes the logical structure of RC 35-222, an interface between RC 3500 and DP 2230 Line Printer.

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CONTENTS

pp. 1 : 11.

The RC 35-222 (Line Printer interface) is connected to one I/O channel on RC 3500.

The RC 35-222 interface covers the necessary interconnection requirements between DP 2230 Line Printer and RC 3500.

The printing speed of the DP 2230 Line Printer is 300 lines/minute (136 characters per line).

For details about the Printer refer to the manual for DP 2230.

By means of WRITE DATA commands a 7 bit character (printable character or paper instruction) is placed on the parallel data inputs to the Printer, and a data strobe is sent to the Printer indicating that a character is ready to the Printer.

The Printer accepts the character by setting a response signal DEMAND. When the Printer is ready to receive a character more, DEMAND switches high. The positive going edge of DEMAND causes an interrupt to be sent to RC 3500.

During operations the Printer will load data received from RC 35-222 into memory with each strobe received until a maximum of 136 strobes has been recognized. Any additional strobes will be automatically ignored by the Printer logic.

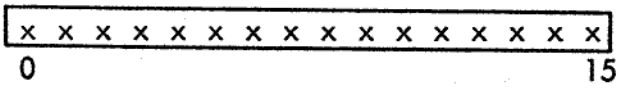
The Print operation is started by sending a paper advance control character (LF, FF, or CR). Only these three control characters are used by the Printer; if the Printer receives one of the other characters in the range 0-31, the Printer will execute this character as a space.

For details about the available printer drums refer to the paper: RCSL: 42-10257.

The RC 35-222 interface accepts all commands from RC 3500, but READ DATA has no effect on the operation of the interface.

WRITE CONTROL. 3.1

From RC 3500 to RC 35-222.

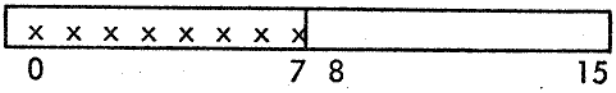


bit 0-15: not used.

Decoding of a Write Control header causes the interface to send an interrupt to RC 3500 if the Printer is ready to receive a character and the Printer is ON-LINE.

WRITE DATA. 3.2

From RC 3500 to RC 35-222.



bit 9-15: Data Character to the Printer or Paper Instruction.

If bit 8 = 0, bit 9-15 contains the character to be printed, according to the used drum.

Bit 15 is the low significant bit of the character.

The first character transferred from RC 3500 to the printer will be the "most significant digit" and is printed in the left most column.

If bit 8 = 1, bit 9-15 contains a paper instruction in accordance with the following tables.

bit 8: Paper Instruction.

See above.

bit 0-7: not used.

Table 3.2.1. VERTICAL FORMAT INSTRUCTION CODE FOR TAPE CHANNEL SELECTION

PI 8	DATA INPUT LINES 11 12 13 14 15	TAPE CHANNEL
High	0 0 0 0 0	1
High	0 0 0 0 1	2
High	0 0 0 1 0	3

Table 3.2.2. VERTICAL FORMAT INSTRUCTION CODE FOR TAPE CHANNEL SELECTION (continued)

PI 8	DATA INPUT LINES 11 12 13 14 15	TAPE CHANNEL
High	0 0 0 1 1	4
- " -	0 0 1 0 0	5
- " -	0 0 1 0 1	6
- " -	0 0 1 1 0	7
- " -	0 0 1 1 1	8
- " -	0 1 0 0 0	9
- " -	0 1 0 0 1	10
- " -	0 1 0 1 0	11
High	0 1 0 1 1	12

NOTE: PRINTER DON'T CARE THE DATA INPUT LINES BIT 10 - 9 IN TAPE CHANNEL SELECTION (BIT 11 = 0).

Table 3.2.3. VERTICAL FORMAT INSTRUCTION CODE FOR STEP-COUNT LINE ADVANCE

PI 8	DATA INPUT LINES 9 10 11 12 13 14 15	LINES STEPPED
High	1 0 0 0 0	0
- " -	1 0 0 0 1	1
- " -	1 0 0 1 0	2
- " -	1 0 0 1 1	3
- " -	1 0 1 0 0	4
- " -	1 0 1 0 1	5
- " -	1 0 1 1 0	6
- " -	1 0 1 1 1	7
- " -	1 1 0 0 0	8
- " -	1 1 0 0 1	9
- " -	1 1 0 1 0	10
High	1 1 0 1 1	11

Table 3.2.4. VERTICAL FORMAT INSTRUCTION CODE FOR STEP-COUNT LINE ADVANCE (continued)

PI 8	DATA INPUT LINES 9 10 11 12 13 14 15	LINES STEPPED
High	1 1 1 0 0	12
- " -	1 1 1 0 1	13
- " -	1 1 1 1 0	14
High	1 1 1 1 1	15

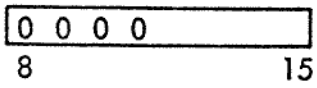
NOTE: Data input lines 10 - 9 are disregarded unless additional paper stepping (16 through 63 lines) is desired.

READ DATA. 3.3

Not used.

READ STATUS. 3.4

From RC 35-222 to RC 3500.



bit 15: CABLE CONNECTED.

Bit 15 = 1 if the RC 35-222 interface is connected to the Printer.

bit 14: PRINTER ON LINE.

Bit 14 = 1 if the following conditions are true:

a) the Ready light is on.

b) the printer operator has actuated the On Line switch.

c) the print inhibit switch is off.

bit 13: PRINTER READY.

Bit 13 = 1 if the following conditions are true:

a) Power and DC voltages are on.

b) The printer drum gate is closed.

c) Paper has been loaded and VFU initialized.

d) The ribbon has responded to an initial move command, and a ribbon fault does not exist.

e) A hammer current fault does not exist.

f) The hammer bank has responded to an initial move command.

g) Drum is rotating at proper speed.

bit 12: PRINTER DEMAND.

Bit 12 = 1 when the printer is ready to accept a new character.

bit 8-11: Logical 0.

Cable CBL 410 is used to connect RC 3500 and RC 35-222. Max. length of CBL 410 is 100 m.

Cable CBL 468 is used to connect RC 35-222 and the DP 2230 Printer. Max. length of CBL 468 is 12 m.

+ 5V $\pm$ 5%	1 A.
- 5V $\pm$ 5%	30 mA.

The interface is placed in an MKL 102 module assembly.