

June 1, 1962

MEMO TO: Mr. H. J. McCarthy

SUBJECT: 1401 Serial I/O Hypertape Connection

The 1401 sends a Read, Write, Control, or Sense command to the 7841 and continues processing. The command response (I/O TRANS 3 - 73.11.41.2) signal is then available to the 1401 for branch tests. At some time following the Read, Write, Control, or Sense command, a 1401 I/O Read or Write is given (M/L/3/IBBER/W). When the "3" is reached at I ring 1 time, the unit select latch (70.11.21.2) is set. When the "I" is sensed at I ring 2 time, the I/O select latch (73.11.11.2) is set. At I ring 4, 5, and 6 time, the low order address of the 1401 data field is read into the B-STAR. At I ring 7 time, the read or write is detected. (From the 1401 end, a sense is viewed as a read and a control is regarded as a write.) On a write operation, the W remains in the A register throughout the operation to signal write to the 1401. On a read operation, the data in the A register is changed, so the read call line must be latched up.

When the gated word mark is reached at I ring 8 time, the 1401 clock is stopped (70.11.41.2). The clock remains stopped until a service request is sent from the 7841 to turn on the 1401 service request trigger (73.11.11.2). The 1401 clock is then started, and a B cycle is taken. The service response trigger (73.11.71.2) is set at 030 time of the B cycle during a read operation, and at 075 time during a write operation. This trigger remains set until the fall of service request from the 7841. If the operation is a read, the information on the I/O data input lines is gated into the 1401 A register at 000 to 030 time (73.11.21.2). If the operation is a write, the information in the 1401 B register is gated onto the I/O output lines from 060 time until 060 time or until the service response trigger is reset.

When a group mark - word mark is sensed in the B register, a stop (I/O DISC OUT - 73.11.51.2) is sent to the 7841 and the group mark - word mark is regenerated into 1401 storage. An end is then sent to the 1401 (I/O TRANS 2 - 73.11.41.2 is jumpered to I/O TRANS EOR 73.11.31.2). This end may also originate in the 7841 without a stop first being sent. The 1401 clock is started, and an I-E change is forced (70.11.41.2). The next cycle is an I - OP cycle which resets the unit select latch and the I/O select latch. To finish the operation, an end response will be sent from the 1401 I/O 5 SELECT - 73.11.61.2). The end response resets the command response in the 7841.

In the examples shown, a read command, 1401 read instruction, and end response are shown on figure 1, while a write command, 1401 write instruction, and end response are shown on figure 2.

To the best of my knowledge, the 1401 I/O channel for the Hypertape connection corresponds exactly to the master end of the Corporate Simplex Interface Definition.

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cc: Mr. R. T. Chandler
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READ HYPER-TA

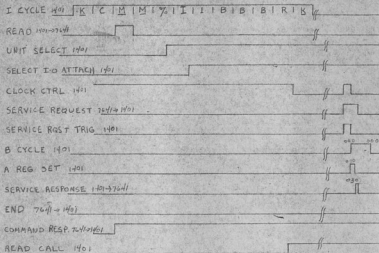
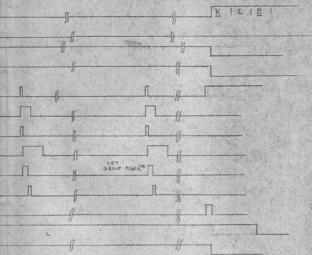


FIG. 1



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