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Identification

Connect Procedure
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Purpose

The purpose of the connect procedure is to cause a connect signal to be sent by a system controller to the active device configured on the designated system controller port. The signal is initiated when a processor issues a GE645 connect instruction (cioc y). This instruction must be executed by a processor in the master mode.

Discussion

Before attempting to read and understand this document it would be advantageous to review first the documents of Section BC.1. These documents describe the hardware configuration, hardware terminology and the hardware restrictions which are implicit in the discussion of the connect procedure.

The connect instruction is a privileged instruction in the sense that it can only be executed by a processor in the master mode. The "control processor" concept does not apply however. In other words any processor can issue a connect to any active device.

The operand word determined by the effective address of the connect instruction designates in the low order 3 bits (33, 34, 35) the system controller port (0-7) which is to receive the connect signal (sent by the system controller). The remaining bits (0-32) of this word may or may not contain information for the active device depending on the type of active device on the system controller port.

Restrictions

The prototype "fire hose drum" requires that the connect operand word be physically located in a memory location controlled by the system controller which also contains the memory location designated on the drum base address switches. All other active devices do not have this restriction.

Method

To issue a connect for an active device the following call is made

```
call master_mode_ut$cioc(cow,log_act_dev, err_ret)
```

where:

- | | |
|----------------|---|
| master_mode_ut | - a master mode segment (BK.5.00) |
| cioc | - entry point to issue connects |
| cow | - a string (b 33) which will be placed in the high order 33 bits of the connect operand word. |
| log_act_dev | - the logical designation of the active device (fixed 18). This argument is used to determine the physical port assignment of this device. This port number is then stored in bits 33-35 of the connect operand word. |
| err_ret | - is a label which designates an error return to be taken if the logical active device designation is not correct. |

The connect procedure, using the logical active device number as an argument, determines from the active device configuration table the system controller port to which this device is connected. A connect operand word is built using the port number and the "cow" argument. A connect instruction is then issued which specifies the resulting connect operand word as the operand.

Active Device Configuration Table

<u>Logical device number</u>	<u>Active Devices</u>	
1	GIOC	1
2	GIOC	2
3	GIOC	3
8	GIOC	8
11	Extended Memory Module	1
12	Extended Memory Module	2
18	Extended Memory Module	8
21	processor	1
22	processor	2
23	processor	3
28	processor	8