DigiBoard Asynchronous Multiplexers

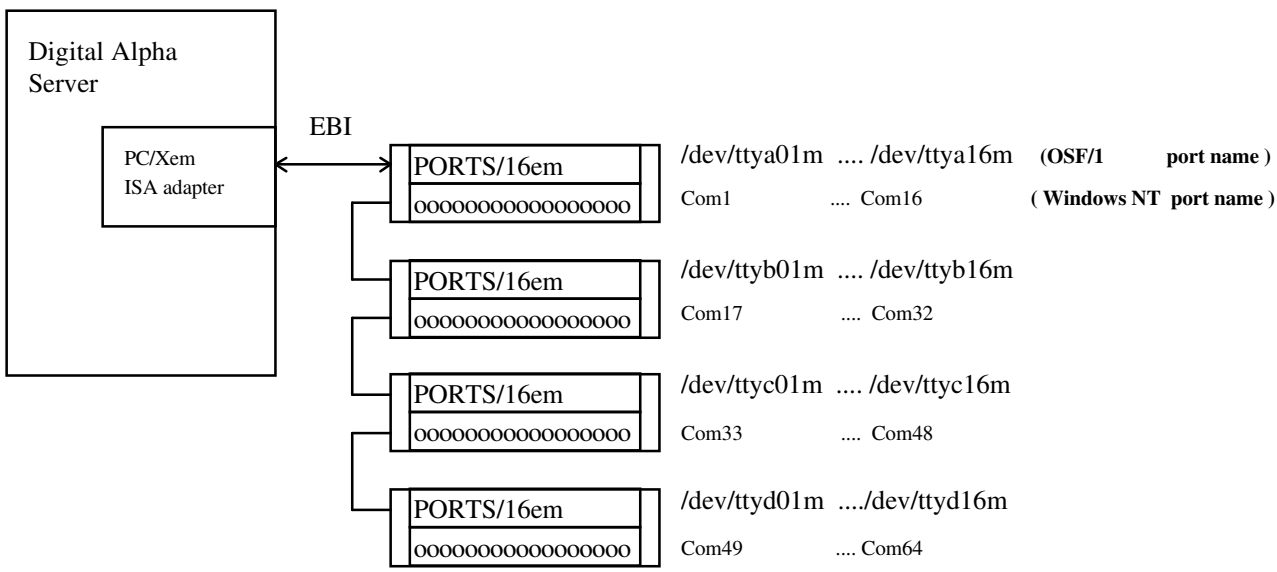
Digital AlphaServer Systems

Multiplexer Configurations

Digital offers two configurations of asynchronous multiplexers for Alpha servers. Made by DigiBoard, they allow direct connection of terminals and printers through an ISA host adapter. For OSF/1 AlphaServers, a multiplexer is a lower-cost alternative to a LAN terminal server. For Microsoft Windows NT AlphaServers (which do not support terminal servers), a multiplexer provides support for clients under Microsoft NT/RAS.

Multiplexer Hardware

One configuration uses the DigiBoard PC/Xem ISA adapter connected to the PORTS/16em asynchronous interface. The PORTS/16em box has 16 RJ45 connectors. The Digital part number for this adapter-box option is **CXI01-AA**. Up to three additional PORTS/16em boxes may be daisy-chained to the first box, for a total of 64 ports. The Digital part number for additional PORTS/16em boxes is **CXI01-AB.**



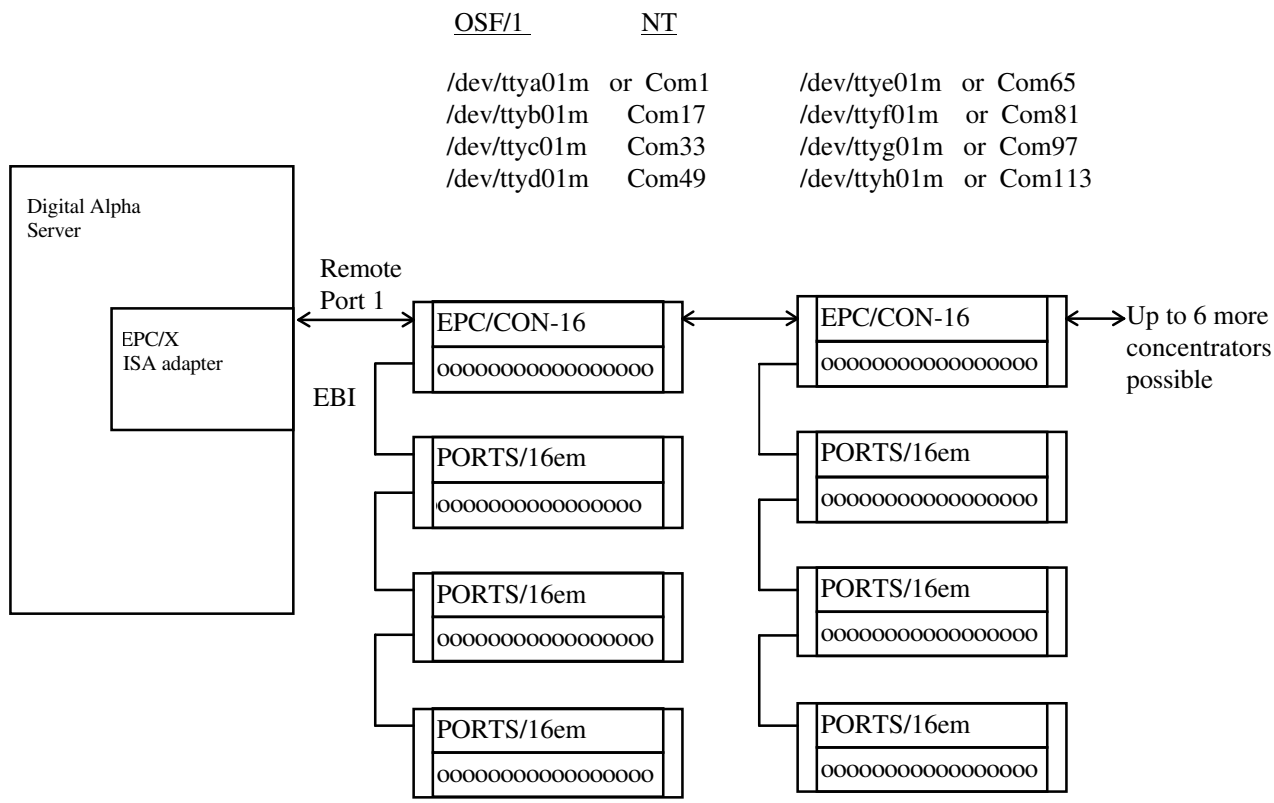
The second configuration offers higher performance and more expandability. It uses the DigiBoard EPC/X ISA adapter connected to the EPC/CON-16 concentrator, a 16-line asynchronous interface. The Digital part number for this adapter-box option is **CXI01-AD.** The EPC/X adapter supports up to 7 additional EPC/CON-16 concentrators (part number **CXI01-AE**). In addition, each concentrator can be expanded with connections to up to three PORTS/16em boxes. (The adapter supports a maximum combination of 14 EPC/CON-16 / PORTS/16em boxes, or 224 asynchronous lines.)

Maximum number of concentrator/box connections per adapter module is 14.

Following additional restrictions apply:

Maximum of **8 EPC/CON-16** concentrators per **Host Adapter *module.***
Maximum of **8 EPC/CON-16** per "**Host Adapter line**" to "**REMOTE**" line connection.
Maximum of **3** "**PORT/16em**" daisy chained through "**EBI**" connection per **EPC/CON-16** concentrator.

Figure shows representative configuration using only one of the 2 available REMOTE LINE port connections from the adapter module.



Kits Contents

CXI01-AA P/N 70000907

- This document P/N 91000321
- DigiBoard Xem System hardware manual P/N 90027500
- DigiBoard PC/Xem ISA Adapter Module Pkg P/N 77000288
- DigiBoard PORTS/16em asynchronous interface pkg P/N 76000134

  (See CXI01-AB)
- S/W Pkg X-C/X-Xem Windows NT P/N 75000130
- S/W Pkg, C/X-EPC-Xem OSF/1 P/N 75000186
- EISA Configuration Utility config file diskette P/N 75000154

CXI01-AB P/N 76000134

- Packet, Customer Literature P/N 91000100
- Conn Assy, Box PC/16em RJ45 P/N 50000054
- Cable, EBI 16em P/N 62080016

CXI01-AC

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CXI01-AD P/N 70000908

- This document P/N 91000321
- PC Pkg, EPC/X ISA Host Adapter P/N 77000287
- Conn Pkg, Box EPC/CON-16 concentrator P/N 76000135

  (See CXI01-AE)
- S/W Pkg, X-C/X-Xem Win Nt P/N 75000130
- EISA Configuration Utility config file diskette P/N 75000154
- S/W Pkg C/X-EPC-Xem OSF/1 P/N 75000186

CXI01-AE P/N 70000135

- Packet, Customer Literature P/N 91000100
- Cord, Power P/N 10000764
- PS,120-240VAC 5VDC P/N 10000895
- Conn Assy, Box EPC/CON-16 P/N 50000051
- Cable, Shld 4-TP P/N 62110120

CXI01-AF P/N 70000133

- Conn, Adapter RJ45 to MMJ11 P/N 10001088

Summary of Installation Steps for *EISA* based system

1. DO NOT INSTALL the adapter module at this time. (See Step 6)

2. Preconfigure the concentrators, cables, and asynchronous devices as described in the DigiBoard hardware manuals.

3. Locate a slot for the PC/Xem or EPC/X ISA module. For example, in an AlphaServer 2100, see the figure System Bus Option Locations in the AlphaServer 2100 Owner's Guide.

4. Run the EISA Configuration Utility (ECU) and configure the slot you selected for the ISA adapter. (See next section "How to Run ECU").

5. Set switches on the adapter board to select the I/O port address that was recommended by ECU

6. Install the host adapter ISA board as described in the DigiBoard hardware manuals.

7. Install the OSF/1 or Windows NT driver as described in the appropriate document.

8. Verify driver installation by directing output to each terminal as described in the installation procedures.

How to Run ECU

ECU does not see ISA boards or physically configure them. However, it does store the ISA configuration parameters and checks for conflicts among system resources. You run ECU before actually installing the ISA boards. Then as part of installation you set the I/O port address using switches on the ISA module.

To run ECU:

1. Locate the ECU diskette that was shipped with your server; note that there is a separate diskette for each operating system. For example the AlphaServer 2100 uses diskette

   AK-Q2CR*-CA for OSF/1 and

   AK-PYCJ*-CA for Microsoft Windows NT.

   o Load the appropriate diskette into floppy drive..

2. Use either of the following commands at the console level to start the ECU on an AlphaServer 2100:

   P00>>> ecu at the SRM prompt.

   -or-

   P00>>> NT to use the ARC console menu, select

   Supplementary menu, then

   Set up the System, then

   RUN EISA configuration utility from floppy.

3. Choose the ECU **Add or Remove Boards** option and select an empty slot from the list provided.

   o Press the **INSERT** key to ADD a new module.

   When the ADD window is shown, insert the vendor provided EISA Config Files diskette.

   o Press **ENTER** to invoke reading of vendor CFG files from diskette.

   (Reading directory. Please wait)

   (Updating CFG file information) { Takes several minutes }

4. At the “Add Configuration (CFG) file “ window, you will be presented with the option to choose which of the vendor provided CFG files you wish to load to configure the option you are installing.

   ie:

   !DBI0501.CFG DigiBoard PC/Xem Host Adapter - ISA for **CXI01-AA**

   !DBI0601.CFG DigiBoard EPC/X Host Adapter - ISA for **CXI01-AD**

   Select the appropriate file using the arrow key, press **ENTER** to invoke.

   (Searches for file to be copied ...)

   (Copies CFG file to be used ....)

   Remove vendor provided EISA Config Files diskette.

   Insert ECU diskette originally installed when ECU was invoked.

   (Disklabel on volume must be SYSTEMCFG in order for ECU to load new CFG file.)

   o Press **ENTER.** Selected CFG file will now be copied onto ECU diskette.

5. Choose the ECU **View or Edit details** option. Write down the value ECU displays for starting memory address. You will specify this address later when installing the driver. Write down the I/O port address. You will select the switches on the board to select the I/O port address, as shown in the following table. (Also see the DigiBoard hardware manual.)

6. **Save and exit** ECU.

7. Return to ”**Summary of Installation Steps for EISA based system ”.**

   Step 5.

I/O Port Addresses for PC/Xem Adapter

Address	Switch 1	Switch 2	Switch 3	Switch 4
104h	OFF	OFF	ON	ON
114h	OFF	ON	OFF	ON
124h	OFF	ON	ON	ON
204h	ON	OFF	OFF	ON
224h	ON	OFF	ON	ON
304h	ON	ON	OFF	ON
324h	ON	ON	ON	ON

I/O Port Addresses for EPC/X Adapter

Address	Switch 1	Switch 2	Switch 3	Switch 4
108h	OFF	OFF	ON	ON
118h	OFF	ON	OFF	ON
128h	OFF	ON	ON	ON
208h	ON	OFF	OFF	ON
228h	ON	OFF	ON	ON
308h	ON	ON	OFF	ON
328h	ON	ON	ON	ON

Summary of Installation Steps for *ISA* based system

Machine Specific - configuration information.

The following are commands that you need to use in order to configure the DigiBoard ISA adapater in an **AlphaStation 200/400 system:**

>>isacfg -mk -enadev 1 -etyp 1 -handle DGIBRD -iobase0 **IOBASE**

-membase0 **MEMBASE** -memlen0 32768 -slot **SLOT**

where:

IOBASE is the base I/O address value, based on the dip switch settings of the board.

MEMBASE is the ISA memory address you want (usually something like F0000, 80000, 90000) that does not conflict with other device memory addresses that are configured.

SLOT is *not* the physical slot in your backplane, but a unique value which the console firmware uses to set up some device tables. This value can be any number, but must be unique to the device.

For example:

>>isacfg -mk -enadev 1 -etyp 1 -handle DGIBRD -iobase0 308

-membase0 80000 -memlen0 32768 -slot 2

After entering the isacfg command at the console, then boot the kernel that was built during the installation of the DigiBoard driver**.**