Macintosh IIfx: Problems Using with UB MaxTalk

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TOPIC ---

I am using Ungermann-Bass Access/One to connect Macintosh computers via
the LocalTalk port to the UB MaxTalk card. Everything works fine with all
Macintosh models except the Macintosh IIfx. The connection is weak or
very slow.

I've installed the Serial Switch CDEV, and that solves the problem. My
Macintosh computers are using only AppleShare Workstation software and
System Software 6.0.7 to connect to the AppleShare server.

Some questions:

1) Have you heard of problems with the Macintosh IIfx and the UB
   MaxTalk Card?

2) Can you give me more details on the Serial Switch CDEV?

3) Is this an Apple problem or because the Ungermann-Bass product
   doesn't follow AppleTalk guidelines?

DISCUSSION --

1) Ungermann-Bass Tech Support confirms the problem. They also state
   that using the Serial Switch CDEV solves the problem.

2) The Serial Switch CDEV for the Macintosh IIfx lets you bypass the
   IOP for the SCC chip, enabling compatibility with serial devices that
   don't work with the IOP. The I/O Processor (IOP) is an Apple custom IC
   designed to provide intelligent support for I/O controllers. There are
   two of these IOP chips in the Macintosh IIfx computer: one for the SWIM
   and ADB and one for the SCC. The IOP sits between the main processor
   and the I/O controllers.

   The features of the IOP include:

   • A built-in microprocessor (6502 running at 2 MHz)

- A 17-bit timer

- Two DMA controllers: one for each serial I/O channel (only used in the Serial IOP)

- Address and data buses for RAM used by the IOP and host processor

- Two digital I/O ports for controlling the ADB (on the SWIM-ADB IOP)

- 32K of external memory of IOP code and data storage

The 68030 communicates with the IOP through a set of control registers in the IOP that are mapped into the main processor's I/O space. The main processor can interrupt the IOP using a bit in one of the control registers, whereas the IOP can interrupt the 68030 by using an interrupt line.

Each IOP has 32K of external RAM that holds the driver and acts as a buffer for the data processed by the processor. The IOP contains a 16-bit auto-incrementing address register and an 8-bit data port that the host processor uses for access to the shared RAM.

3) It's not AppleTalk guidelines that need to be followed, but serial port guidelines. The reason Apple put an SCC IOP in the Macintosh IIfx was to handle the interaction with both serial ports. The SCC IOP handles LocalTalk to relieve the CPU from interrupts created by the LocalTalk transmission. Unfortunately, many applications accesses the SCC chips directly instead of the serial driver. Therefore, the Serial Switch CDEV was distributed for those applications to bypass the IOP.

We're not sure what the UB software does exactly and could not get the information from UB, but it is likely that they might be accessing SCC directly.

To locate a vendor's address and phone numbers, use the vendor name as a search string.
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