

# **Apple Computer Inc.**

Macintosh Hardware Division

Central Software

Sound & MIDI Test Team

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To: Wayne Westly  
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Date: 4/2/92  
From: Jan Leger  
Subject: PowerBook MIDI Problem - *User Level Description  
and Trouble-Shooting Guideline*  
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## **The PowerBook MIDI Problem** *User Level Description*

There is currently a problem when doing any kind of high speed communication input via the serial ports on PowerBook CPUs. In regards to MIDI, this problem can be reproduced when doing large system exclusive data dumps or any function which requires long data streams.

We in the MCSQ Sound/MIDI Test Team have done extensive testing with most of the popular MIDI sequencing products as well as editor/librarians and sound designing software. Though we have encountered the input over run problem when doing the system exclusive data dumps, we have not found any problems with basic MIDI sequencer functionality.

What do we mean by "basic" MIDI sequencer functionality? We have recorded sequences which include:

- Channel voice messages - note on/off, note number data, velocity sensitivity, channel aftertouch, program change, continuous and switch controllers (i.e. - volume changes, modulation, pedal hold)
- System real time messages - clock commands such as start, stop, continue, etc.

- Auxiliary messages - local on/off, all notes off

We had no occurrences of data loss on playback of sequences done with all the above mentioned MIDI implementation. However, each individual MIDI software program has its own idiosyncrasies. Therefore, we have put together a trouble-shooting guideline (begins next page) for four of the most popular MIDI programs which can be used to determine possible user misunderstanding.

*Any questions or additional issues regarding the functionality of MIDI on the PowerBook CPUs can be directed to Jan Leger, x4-5166.*

**TROUBLE-SHOOTING**  
**MIDI COMPATIBILITY GUIDE FOR THE POWERBOOKS**  
by Jan Leger 4/2/92

*IMPORTANT NOTE:*

If your having problems at any time with either of the serial ports, MIDI Mangler, a shareware application written by Opcode Designs, Inc., will assist in freeing the ports.

**Third-Party MIDI Sequencers**

**PERFORMER 3.61** (Mark of the Unicorn, Inc.)

- It states clearly in the Performer Version 3 manual (pg. 14) that the user should, "Be sure to check AppleTalk before you connect your MIDI interface. If you connect an interface to the printer port, be sure that AppleTalk is turned off."
- Whether using the modem and/or printer port, make sure that 1 MHz is selected in the "MIDI Interface" settings available under the "Basics" menu.
- Make sure that all MIDI channels selected for each individual track are for the correct port you have chosen to use (there is a default to the modem port for all channels on selection of a new sequence).
- If your using the Apple MIDI Manager™ driver and MIDI Manager with your system, the correct port(s) must be selected in the Apple MIDI Driver Settings panel of PatchBay™ and the proper connections must be made in the clients window.

**MASTER TRACKS PRO 5™ 5.0** (Passport Designs, Inc.)

- It is not stated anywhere in the manual or addendums for this application that AppleTalk must be turned off. However, if AppleTalk is indeed on, you will get warnings that the port is in use and therefore cannot be accessed by the Pro 5™ MIDI driver or the Apple MIDI Manager™ driver. Thus, make sure AppleTalk is off.
- On launch of the application, all MIDI Setup settings under "Goodies" menu default to the modem port. All settings need to be changed to the printer port if that is the port you choose to use.
- If you are using the Pro 5™ MIDI driver, setting everything in the MIDI Setup window to the port you want to use is all that you need to do. It

won't matter if your channel assignments in the Track Editor window are on A or B, all data will be sent out the port you choose.

- If you are using the Apple MIDI Manager™ driver and MIDI Manager with your system, this must be indicated (check box) in the Pro 5™ MIDI Setup window. Also, the correct driver must be selected in the Apple MIDI Driver Settings panel of PatchBay™ and the proper connections must be made in the clients window. Now, whether a channel is assigned to A or B WILL matter! Make sure that if you have tracks assigned to A or B or both that all the connections are made correctly in PatchBay™.

*Problems with Master Tracks Pro™5 :*

We discovered some problems when using the Pro 5™ MIDI Driver. Though, AppleTalk had been made "inactive", occasionally Pro 5™ would not know the port was free. If we used MIDI Mangler to free up the port, then MIDI would work. The developer for this product was notified of this problem during testing for the PowerBook projects. Since, this problem does not happen when using the Apple MIDI Manager™ driver, it is suggested that you use that driver until the developer has had a chance to investigate and resolve the problem.

**VISION 1.3** (Opcode Systems, Inc.)

- It states clearly in the Vision manual (Chap. 2, pg. 19) that the user should, ". . . make sure that when you're using Vision you deactivate AppleTalk in the Chooser if you have devices on both the printer and modem ports. (Even if you only have devices on the modem port, deactivating AppleTalk is a good idea, because it improves real time performance.)". Thus, first thing to do is to deactivate AppleTalk.

- You need to make sure that the OMS (Opcode MIDI System) is set up correctly for your interface, patcher, and devices. This is done with the OMS Setup application and is somewhat complicated (refer to manuals and addendum documentation for this).

- In the "OMS MIDI Setup" under the "Setups" menu, you need to choose the modem and/or printer port (as well as whether you will be using the Apple MIDI Manager™ system or OMS).

- Make sure that you have selected the correct MIDI channels for each individual MIDI channel. This is done in the "Instruments" window which is available under the "Setups" menu.
- If you are using OMS and have set it up for the correct port(s), basic MIDI should function correctly.
- If you have chosen to use the Apple MIDI Manager™ driver, make sure that the correct port is selected in the MIDI Driver Settings Panel and that the proper connections have been made in the client window of PatchBay™.

*Problems with Vision:*

We occasionally could not get MIDI data out of the printer port, when using the OMS MIDI driver. Though, AppleTalk had been made "inactive", we would have to use MIDI Mangler to free up the port, then MIDI would work with no problems. It is suggested that you have MIDI Mangler readily available for quick resolution of this problem if it should occur. This problem does not happen when using the Apple MIDI Manager™ driver. The developer for this product was notified of this problem.

### **Third-Party MIDI Music Notation**

#### **ENCORE 2.5 (Passport Designs, Inc.)**

- It is not stated anywhere in the manual or addendums for this application that AppleTalk must be turned off. However, you can't even select the printer port in the MIDI Setup for this app if AppleTalk is on. Thus, make sure AppleTalk is off.
- On launch of the application, all MIDI Setup settings under "Goodies" menu default to the modem port. These all need to be changed to the printer port if you choose to use that port.
- In the "Staff Sheet" under the "Windows" menu, you can assign the ports that each individual track will use. However, it shouldn't matter if you have port A or B selected if you have selected the the same port for all data output in the MIDI Setup.

*Problems with Encore:*

We discovered a major problem when using Encore on a PowerBook 100. Though, AppleTalk had been made "inactive", we often could not get MIDI data out of the port. It was as if the Encore did not know that the port was free. Even when we freed the printer port with MIDI Mangler, it would still not be possible to get MIDI data out. If we reset the PRAM on a re-start then it was possible to make MIDI work, however, this is not something we want users doing. Encore is not currently compatible with the Apple MIDI Manager™ system, so using our driver is not an option for a work around. The developer for this product was notified of this problem during testing for the PowerBook 100 project. They are currently investigating the problem.

*Any questions in regards to this document or other issues concerning MIDI on the PowerBooks can be directed to Jan Leger, MCSQ Sound/MIDI Test Team, x4-5166.*