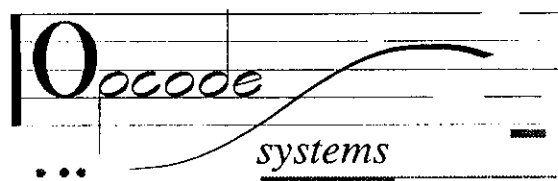


MIDIMAC™

Professional Plus Studio Plus

MIDI Interface Installation Instructions

Feb 1987



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Warning: This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Relocate the computer with respect to the receiver
- Move the computer away from the receiver
- Plug the computer into a different outlet so that the computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems".

The booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

Limited Warranty

Opcode Systems warrants the Professional Plus and Studio Plus interfaces and cabling against defects in materials and workmanship for a period of NINETY (90) DAYS from the date of original retail purchase.

If you discover a defect, first write or call Opcode to obtain a return authorization number. Then return it during the warranty period, transportation charges prepaid, to Opcode Systems. Attach your name, address, telephone number, a description of the problem, and a copy of the bill of sale as proof of purchase date. Opcode will then, at its option, repair, replace, or refund the purchase price of the product at no charge to you.

This warranty applies only to the Professional Plus and Studio Plus interfaces; Opcode software is warranted separately.

This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication, or has been modified without the written permission of Opcode.

All implied warranties, including implied warranties of merchantability and fitness for a particular purpose, are limited in duration to NINETY (90) DAYS from the date of the original retail purchase of this product.

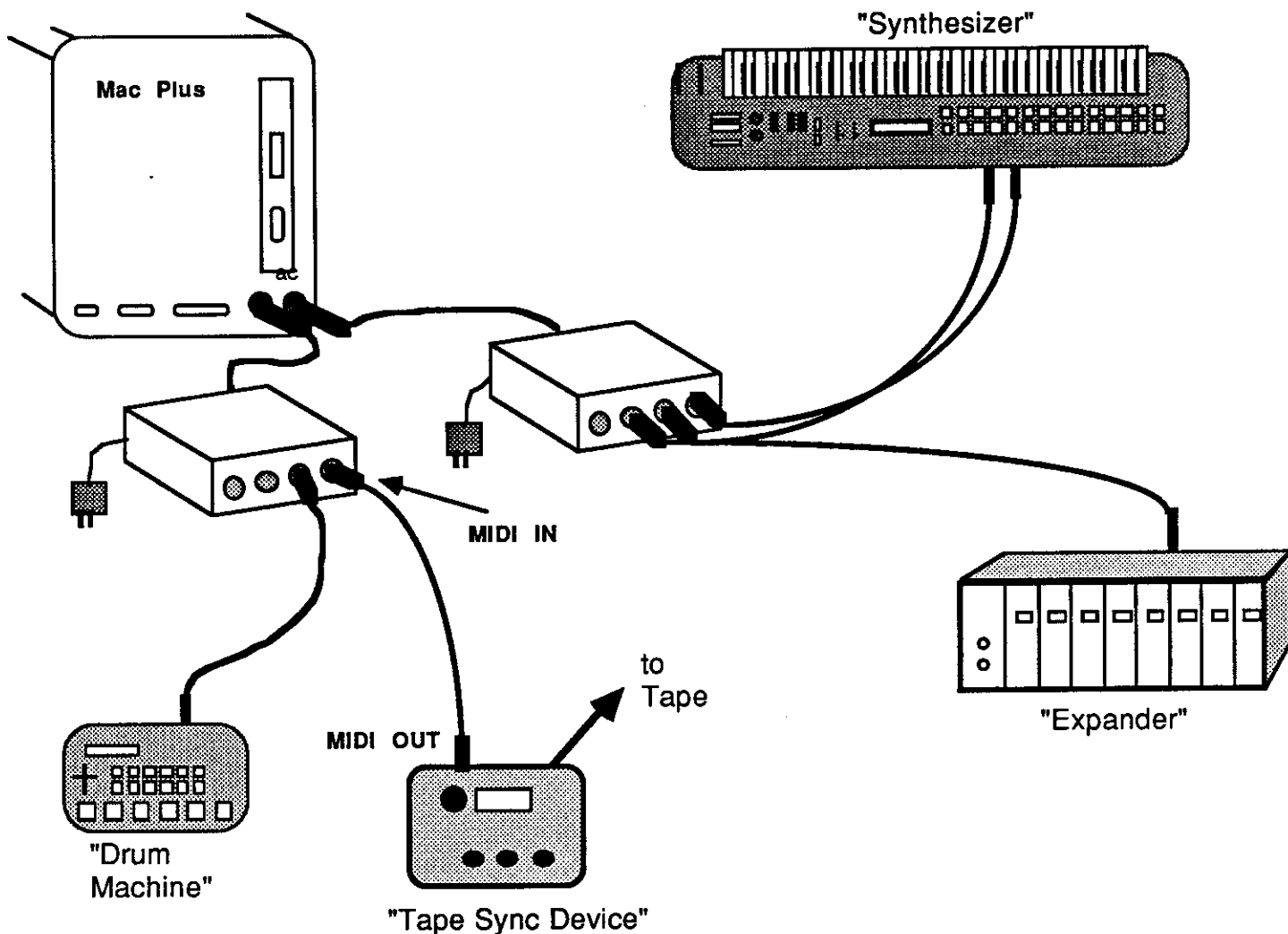
The warranty and remedies set forth above are exclusive and in lieu of all others, oral or written, express or implied.

Opcode is not responsible for special, incidental, or consequential damages resulting from any breach of warranty, or under any legal theory, including lost profits, downtime, goodwill, damage to or replacement of equipment and property.

Some states do not allow the exclusion or limitation of implied warranties or liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Two Professional Plus Interfaces

Set-up #5 shows the same configuration as #4 except using two Professional Plus Interfaces instead of a Studio Plus.



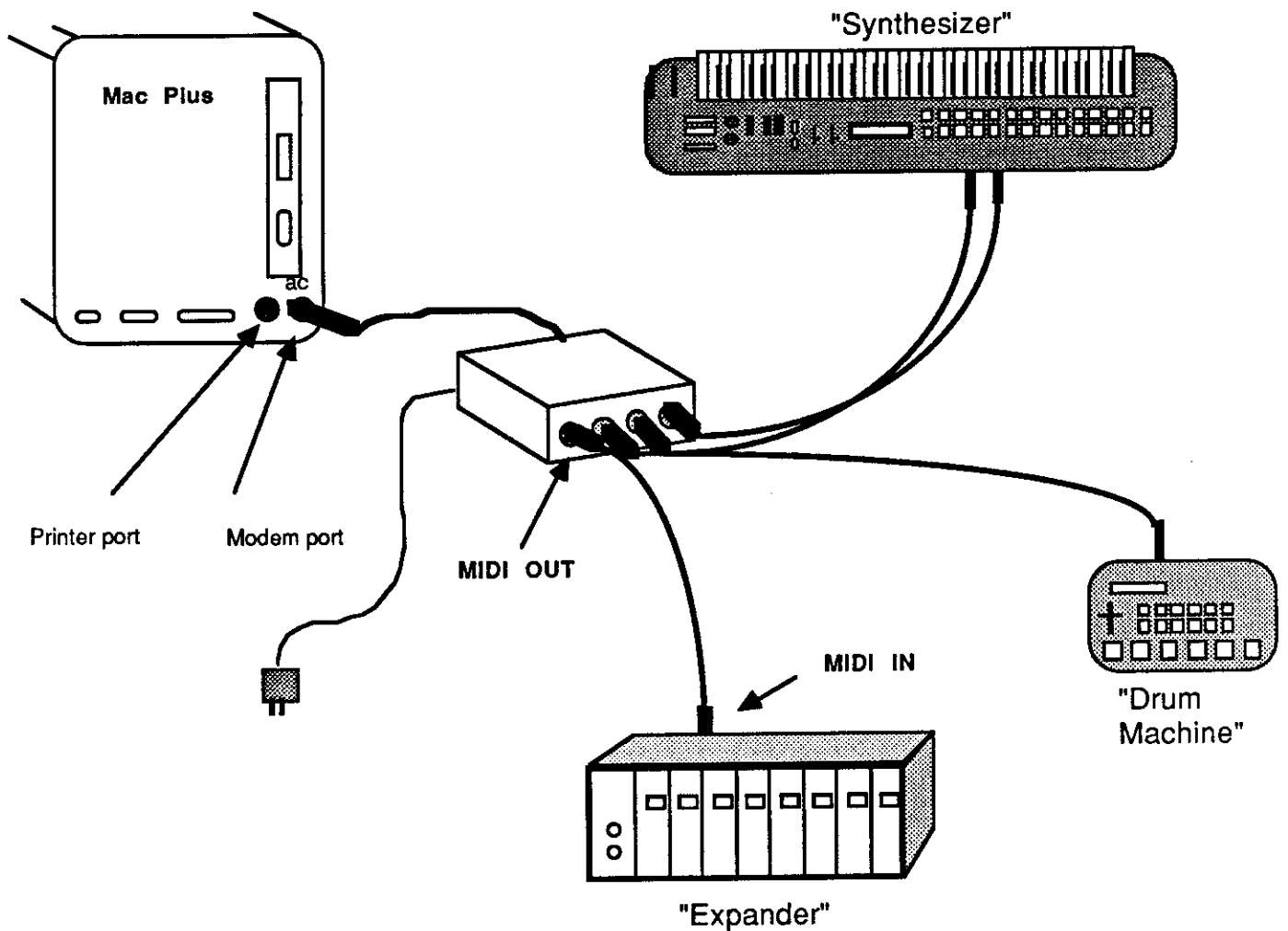
Syncing to Tape with MIDIMAC Interfaces

Although MIDIMAC interfaces do not have tape sync built into them, you can sync to tape by using one of the various tape sync to MIDI converters on the market.

A tape sync device, such as the **Yamaha YMC-10**, **Korg KMS-30**, or **Roland SBX-10**, allows you to record a "sync pulse", that has a built in "beats per minute", onto tape. It will then read it back and translate it into a MIDI clock, which can be sent to the Macintosh through a MIDIMAC Interface. However, the tape must be started each time at the beginning of the sync tone to have your sequencer play in time with the tape. This can be somewhat inconvenient if you're just working on the *end* of a six-minute piece of music. More costly products like the **Roland SBX-80**, **Garfield Master Beat**, and the **Fostex 4050** allow you to record a SMPTE sync tone (Society of Motion Picture and Television Engineers) on tape then read it back and translate it into a MIDI clock, which can be sent to the Macintosh through a MIDIMAC Interface. This type of SMPTE-to MIDI converter lets you start the tape at any point and have your sequencer be in sync, a feature well worth paying for. The MIDI clock from the tape sync device can be sent to a single interface to sync the Macintosh to tape, but you must disconnect the MIDI IN from your synthesizer thus not allowing you to record into the Macintosh while syncing to tape: you need two Professional Plus Interfaces or a Studio Plus Interface to supply the second MIDI IN for this.

Adding another Synthesizer

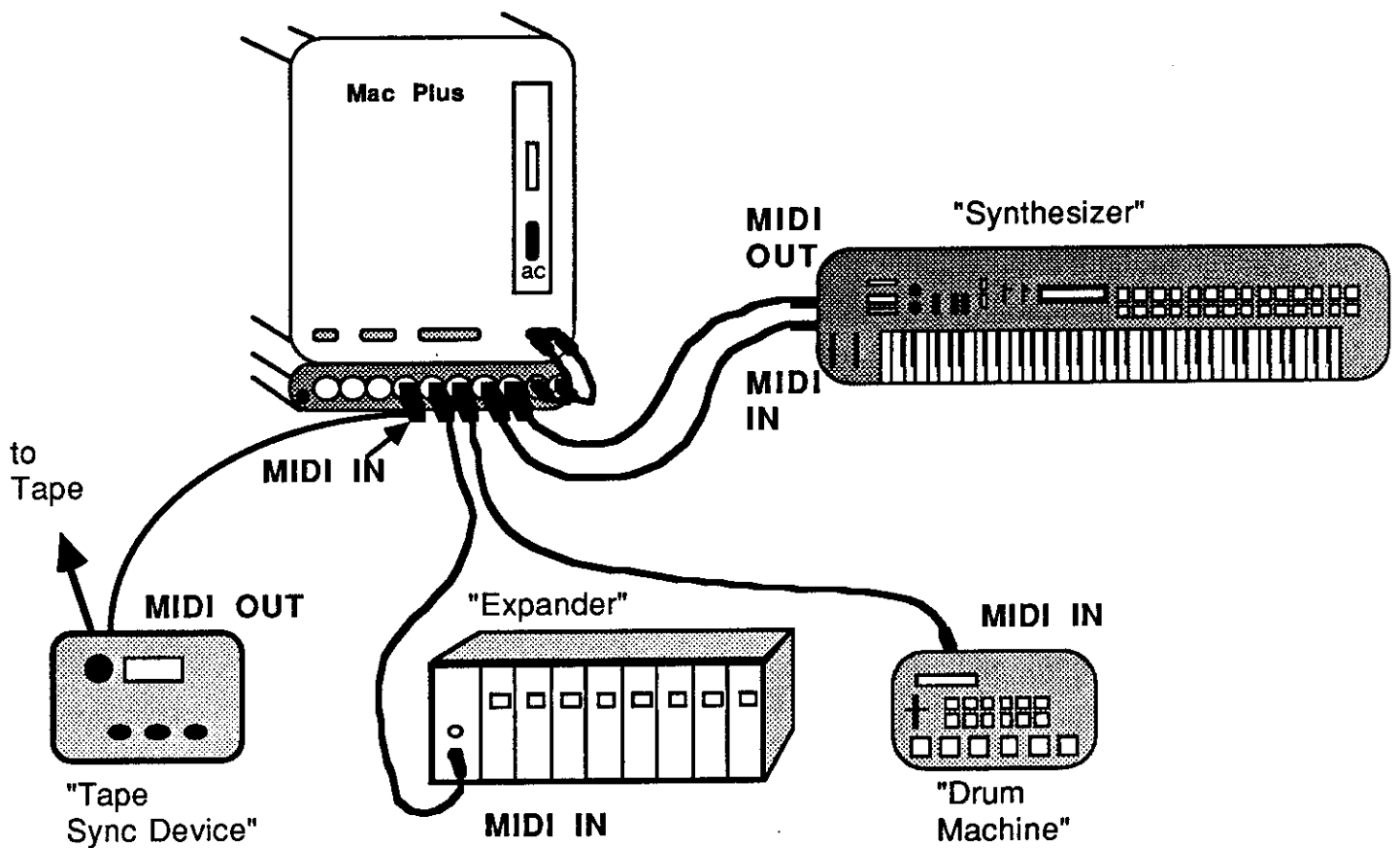
Set-up #3 shows a full usage of the *MIDIMAC Professional Plus Interface*. Everything is connected just as in Set-up #2 except we have added an "expander" to the set-up, (this could be another synthesizer or drum machine or any other type of MIDI device). The (third) **MIDI out** is connected to the **MIDI in** of the expander. Information can be sent from the Macintosh to the expander as well as the rest of the instruments.



Using a Studio Plus or Two Professional Plus Interfaces

Using a MIDIMAC Studio Plus Interface or two MIDIMAC Professional Plus Interfaces gives you *two* independent MIDI INs and *two sets* of independent MIDI OUTs. The two independent MIDI INs allow recording on a "sequencer" while syncing to tape (or a drum machine) or recording from two keyboards at once. The independent MIDI OUTs reduce MIDI delay that can occur if all MIDI channels are sent out a single port.

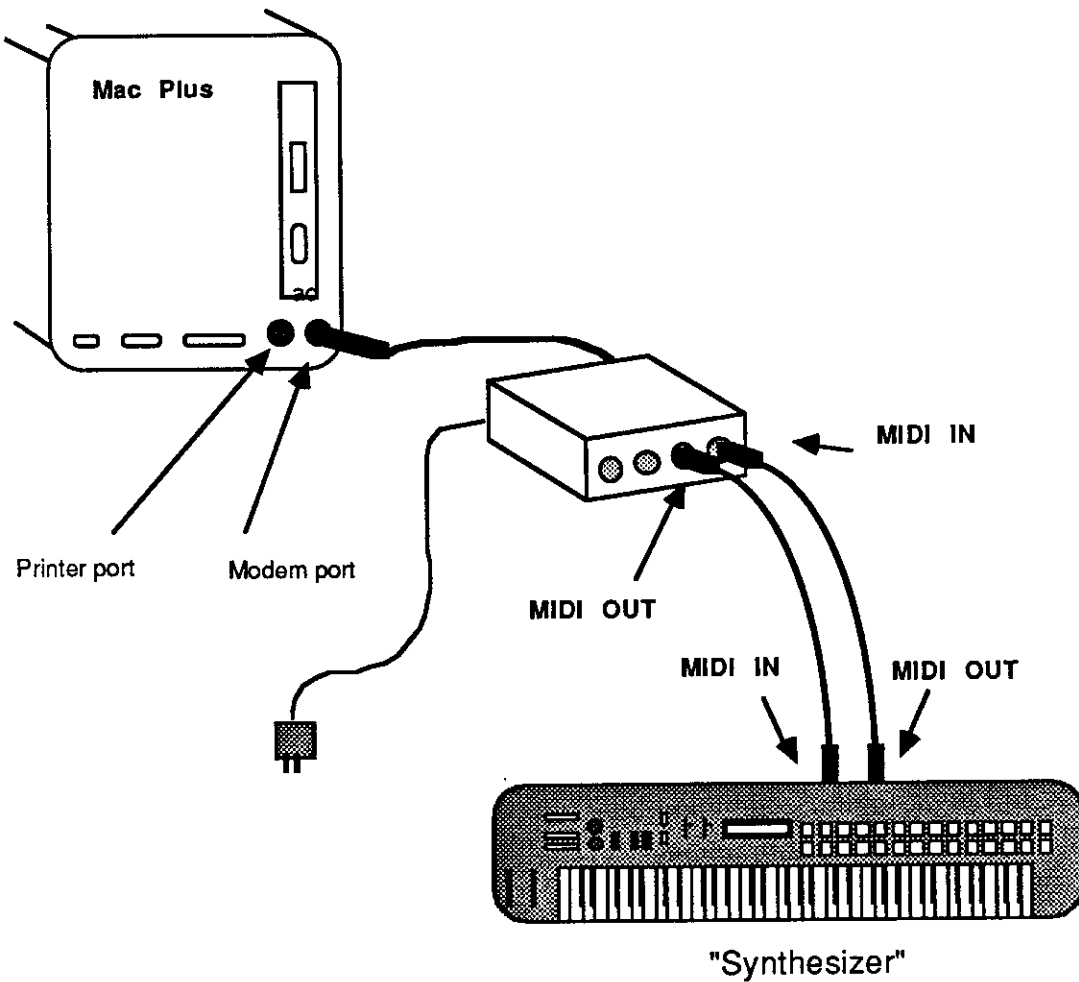
In set-up #4 the Studio Plus Interface is connected to several synthesizers as well as a tape sync device. The MIDI OUT of the tape sync device is connected to the second MIDI IN of the Studio Plus on the Printer Port. This allows a MIDI clock from the sync box (or drum machine) to be sent to the Macintosh so its timing clock will be synced, while the keyboard, still on the Modem port, records into the Macintosh simultaneously.



"MIDI set-ups"

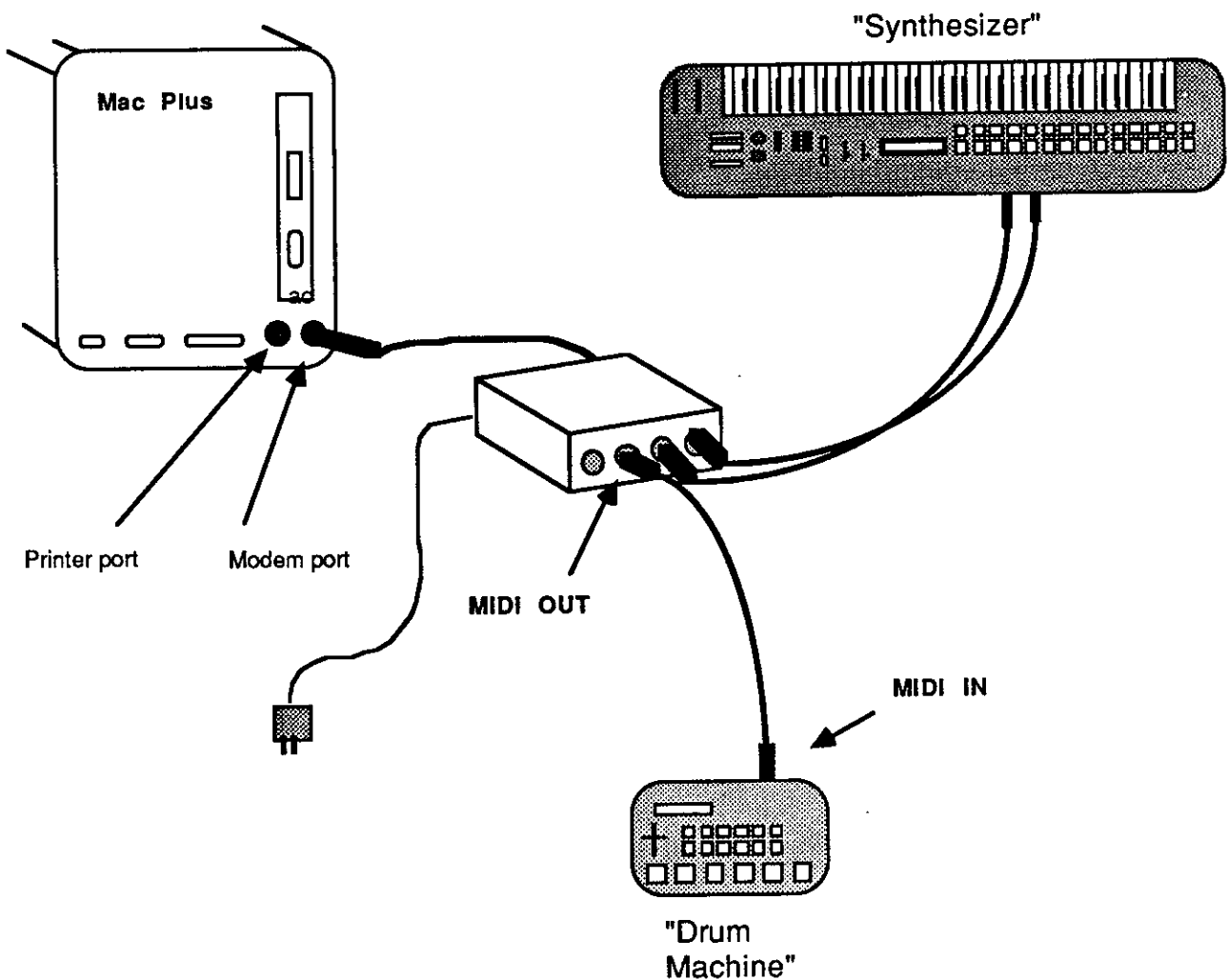
Hooking up a Synthesizer

Set-up #1 is the most basic MIDI connection and should be well understood because it is typical of all other set-ups. After attaching the *MIDIMAC Professional Plus Interface* to the Macintosh, connect a MIDI cable from the **MIDI out** of the synthesizer to the **MIDI in** of the interface: this allows MIDI information to be transmitted from the synthesizer to the Macintosh. Next connect a MIDI cable from the **MIDI in** of the synthesizer to one of the **MIDI outs** on the interface: this allows MIDI information to be transmitted from the Macintosh to the synthesizer.



Adding a Drum Machine

In Set-up #2 the connections are the same for the synthesizer but we have added a connection to a drum machine. Connect one of the **MIDI outs** of the **MIDIMAC Professional Plus Interface** to the **MIDI in** of the drum machine. This allows MIDI information to be sent from the Macintosh to the drum machine. For instance you could send a MIDI clock from the Macintosh to start the drum machine playing (when the drum machine is in *external clock* mode) when using a "sequencer". Or you could record drum information onto your sequencer (using your MIDI synthesizer) in the form of *MIDI notes* and then send that information to the drum machine. NOTE: if you want to *send* information from the drum machine to the Macintosh, you must connect the **MIDI out** of the drum machine to the **MIDI in** of the interface.



Installation instructions for MIDIMAC™ Interfaces

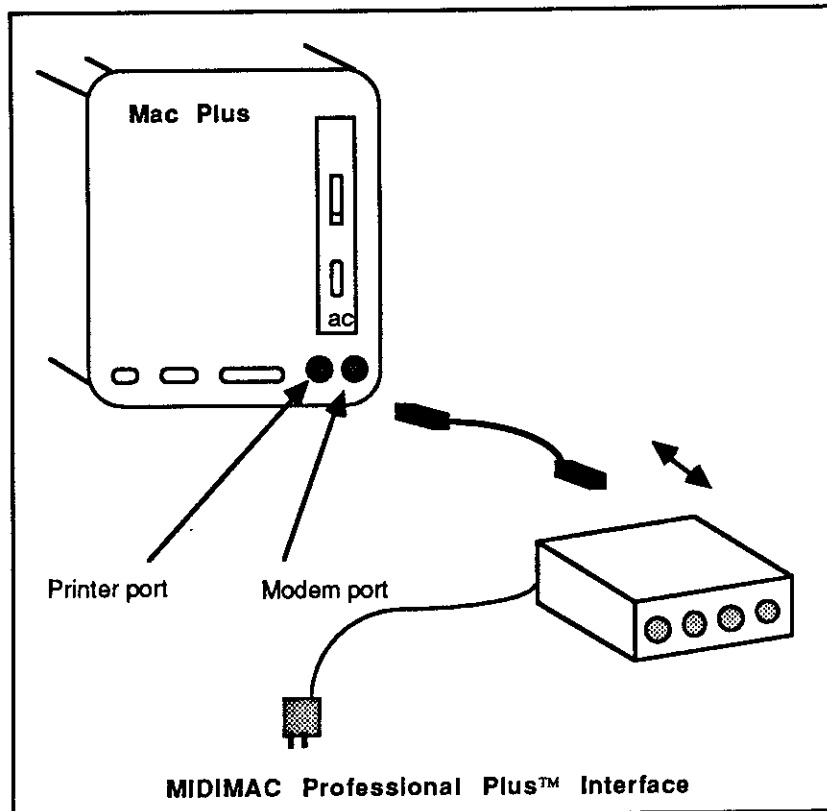
Professional Plus

Attach the cable to the interface ("Circular 8" to "Circular 8") as shown in Fig. 1. Plug the "circular eight" connector on the other end into your Macintosh Plus' Modem or Printer port. Now plug in the AC adapter. (NOTE: when attaching this interface to a 512 Macintosh, the cable will have a DB-9 on one end — plug this into the Modem or Printer port on the 512.)

MIDI Connections: Connect the MIDI *out* of your main synthesizer to the MIDI *in* of the interface and the *out* of the interface to the *in* of the synthesizer (See set-up #1). Use the other outs on the interface to connect a drum machine, other synthesizers or expanders. For further MIDI set-up possibilities see the section on "MIDI Set-ups".

Specs: 1 Mhz clock rate, 1 MIDI in and 3 MIDI outs, AC power adapter and "plus cable" included, connects to either Modem or Printer port -two interfaces can be used at once, works with the majority of MIDI software.

Fig.1



Studio Plus

Place the interface underneath the Macintosh Plus so that the MIDI connectors are towards the back of the Mac as shown in Fig. 2. Use the two "circular eight" cables to connect the Modem and Printer ports on the Mac to the corresponding ports on the interface. Attach the AC adapter at the hole labeled "DC 9V" on the back of the interface. Now plug it into an AC outlet. Turn on the power on the front of the interface by pressing the switch towards the LED, it should be lit when power is connected correctly. Refer to Set-up #4 in "MIDI set-ups" for connections to your MIDI equipment.

Specs: 1 Mhz clock rate, 2 MIDI ins and 6 MIDI outs, AC power adapter and "plus cables" included, uses both the Modem and Printer ports, works with the majority of MIDI software.

Fig. 2

