

**PROPHET-5 MIDI
INSTALLATION and OPERATION**
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INSTALLATION

Check Serial Number

Check the instrument serial number. It must be #1300 or above. (MIDI cannot be installed on units with serial numbers below #1300.)

Check Revision Level

Check the back panel for the DIGITAL and ANALOG jacks. If these are installed, the instrument is at least Rev 3.2, so can be modified for MIDI with this kit. If the DIGITAL/ANALOG jacks are not there, the unit is a Rev 3.0 or 3.1. It must first be updated to Rev 3.3. (Order SCI Model 863. See also Section 23 in the Prophet System Technical Manual.)

Preparation: Remove Boards 3 and 4.

1. Switch power off and unplug the power cord.
2. Turn Prophet-5 over on a protected surface. Remove 11 wood screws around the base and 2 machine screws into the keyboard.
3. Turn the Prophet back over to normal position, and remove 4 machine screws from the upper edge of the back panel. Raise the top panel assembly to service position.
4. From PCB4, disconnect the audio output cable (lower right). Disconnect power connector from PCB4 at PCB3. Remove 6 screws holding PCB4 and set PCB4 aside.
5. From PCB3, disconnect the wheel cable, DIGITAL/ANALOG interface cable (upper left). Disconnect main power cable from lower center of PCB3. Remove 6 screws holding PCB3 and set it aside.
6. Set the remainder of the top panel assembly aside.

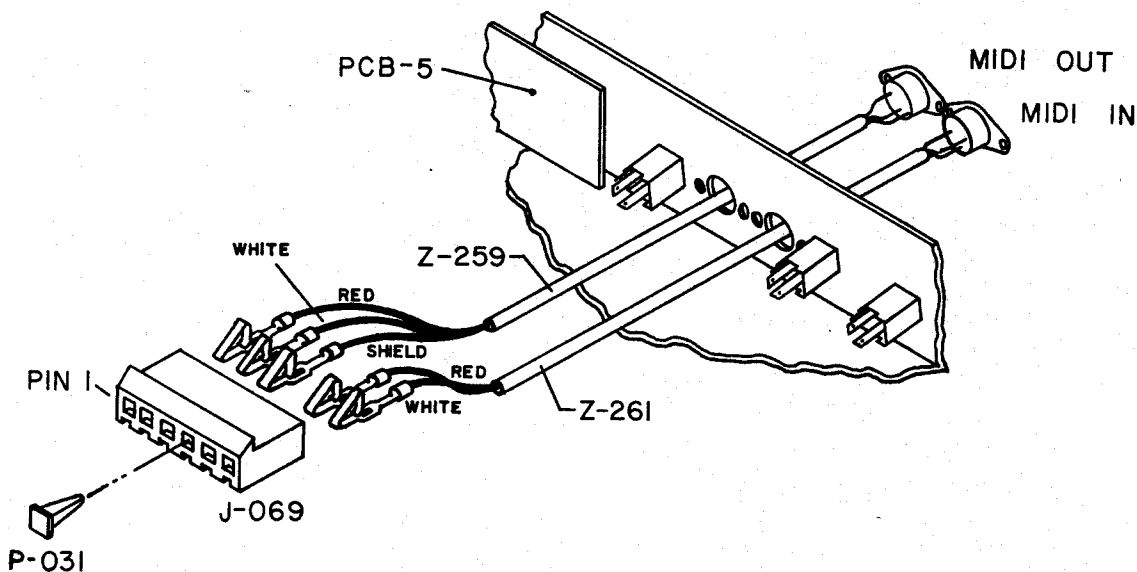
Drill Back Panel Holes. See Template.

1. Figure 841-0 is a template for locating the required back panel holes. Temporarily remove the nuts from the VOLTAGE IN and AUDIO OUT jacks, cut out the holes for the two jacks, locate the template over these jacks and hold it there by screwing the nuts back on. To insure accuracy, use a center punch and first drill through all 6 holes with a small bit first. Then enlarge to size. The two large holes are best made with a Greenlee-type chassis punch, size 5/8 inch (15.875 mm).

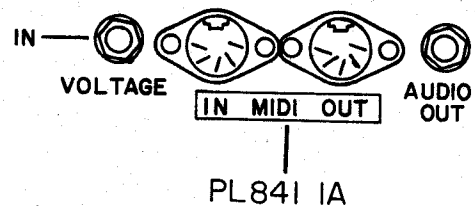
2. Debur the holes. Obviously, remove all metal flakes when done. Especially check behind the power supply board.

Mount Connectors. See Figure 1.

1. Looking at the back panel, the MIDI IN should be on the left and MIDI OUT on the right. Inspect the two enclosed wiring harnesses at their ends with the molex pins. Notice that the shield of one cable has a molex pin while the shield of the other cable does not have one. Pass the cable without shield connector through the left hole. It is MIDI IN. The jack with the grounded shield is MIDI OUT. Mount jacks in the correct holes using 4-40 hardware. Check that the jacks are not upside down--the index mark should be up, holes down. The jack mounting flanges should not overlap. If necessary, leave the mounting screws untightened until both jacks are installed, then tighten the two screws between the jacks before tightening the two screws on the "outside."



**Figure 841-1
CONNECTORS**



2. Degrease the area underneath the jacks and apply the label.

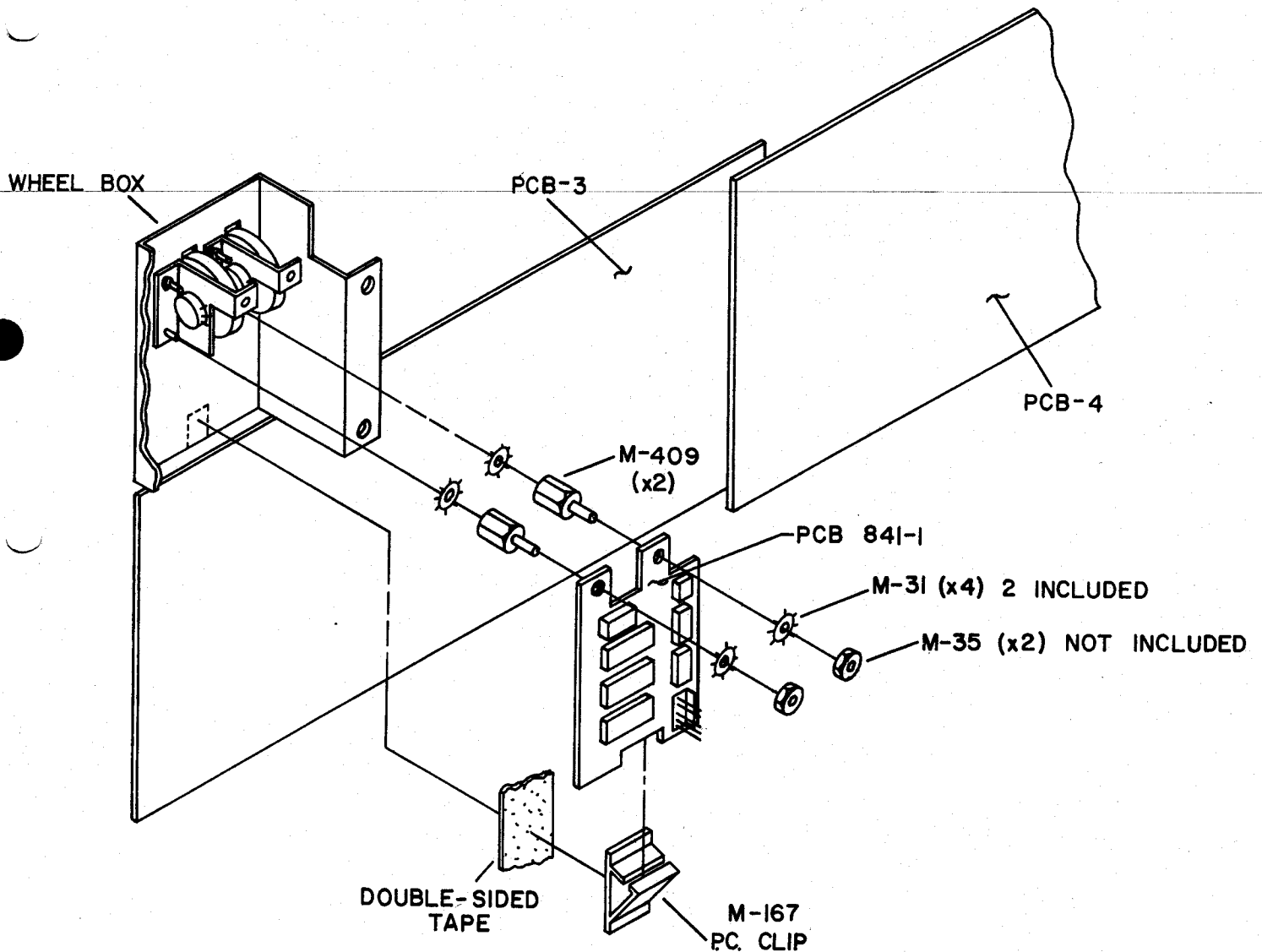
3. After mounting the DIN jacks, insert the cable end clips into the molex housing. Insert also the enclosed nylon polarizing pin at position 4.

Mount MIDI PCB. See Figure 2.

1. Turn the top panel assembly back over on a protected surface. In the wheel box, remove the rear nut holding each wheel bracket (two). Leave the washer on the stud. To each, add one of the enclosed standoffs. **CAUTION!** Don't overtighten, or you'll snap off the stud. It needs to be just tight enough to hold the wheels secure. (Just in case, the SCI part # for a replacement wheel box is M-202!)

2. From the PCB3 Computer Board, remove the 2651/2661 USART at U386. Install this UART in position U1 on the enclosed MIDI PCB. Work carefully. Make sure all pins are basically mated before applying final pressure.

3. Position the board in the wheel box over the standoff screws, and add the PC clip to the bottom edge with the double-sided tape provided. It is helpful to first attach the clip to the board, then press down to secure the tape.



**Figure 841-2
MIDI BOARD MOUNTING**

Modify PCB 3.

1. From PCB 3, remove the 2732 EPROM at U312. (Return this EPROM to SCI.)
 2. Use a vacuum syringe to open the 24 holes for U313, and install the enclosed socket. Orient so pin 1 is at the lower left (same as U313).
 3. On the top of board, cut the trace from U331-2 to U330-3.
 4. Where shown in Figure 841-3 (X), cut the following traces on the back:
 - (A) U330-2 -INT to U385-9.
 - (B) U324-14 to TP306.
 4. As shown, add three jumpers:
 - (1) 5 MHz from U325 Clock Divider, pin 3, to U386 USART pin 15.
 - (2) A11 from U312 EPROM 0, pin 21, to U386 USART pin 18.
 - (3) A11 from U312 EPROM 0, pin 21, to U313 EPROM 1 pin 21.
 - (4) U331-2 to U324-14.
 - (5) U385-9 to U385-14.
 - (6) U330-3 to U330-14.
 4. Inspect your work, preferably under magnification.
-
5. Into position U312, install the enclosed EPROM marked "0 PROPHET 10.0." Into position U313, install "1 PROPHET 10.0."

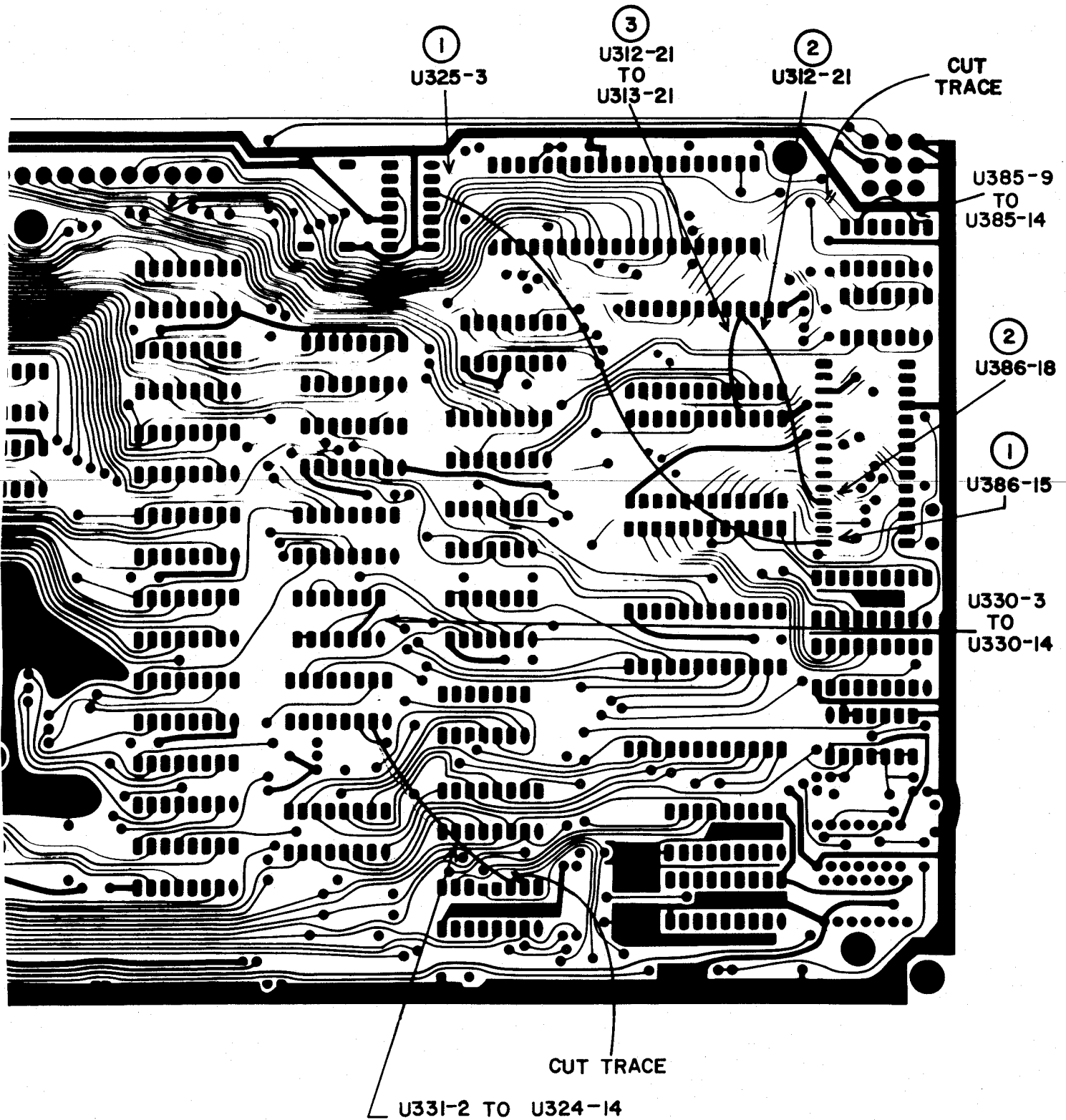


Figure 841-3
PCB 3 MODIFICATIONS

Reassembly

OK. That is basically it. Reassemble the Prophet, checking the following items:

1. Install modified PCB3 with six screws.
2. Reconnect wheel cable (when correctly oriented, the clips are visible through the molex housing).
3. Connect the enclosed 28-wire ribbon cable from J1 on the MIDI board to the (former) PCB 3 USART socket, U386. Pin 1 on each end is indicated by a diagonal corner.
4. Install PCB4 with six screws.
5. Connect the 60-wire ribbon and PCB 4 power connector.
6. Reconnect the DIGITAL/ANALOG interface cable to P305, the main power cable to P302, the audio output cable to P402, and the six-pin MIDI cable connector to the MIDI board. Loop the enclosed tie wrap through the hole in the side of the wheel box which forms the keyboard support bracket. Use it to secure the MIDI cable.

Testing

1. Switch power on and perform a full functional test of the Prophet-5. Every component in this modification kit was tested at the factory. Therefore any malfunctions are most likely caused by deviations from these instructions.
2. If the Prophet does not "come up" correctly check especially that the 28-wire ribbon is properly mated at both ends. Also check that the 60-wire ribbon between PCBs 3 and 4 is correctly installed (if it isn't, the Prophet will stick in its TUNE routine). If these two ideas don't help, you'll have to recheck your work carefully.
3. Once proved basically functional, switch power off and connect to another MIDI synth to check MIDI operation. (See the following Operation section.)
4. If a second MIDI device is not available, simply connect the MIDI OUT to IN and switch power on. If MIDI is working two things should be apparent. First, a single played key will sound fatter (than when MIDI is disconnected). This is because the keyboard is playing one voice while MIDI is playing another. Second, because the voices are doubled, you won't hear five notes played at once--at most you'll hear three.
5. Test the DIGITAL interface using a Model 1005 Polysequencer or Model 1001 Remote keyboard.
6. Test the MONO SEQUENCER Inputs (Gate In and CV In) by patching the outputs to the inputs. The last note played should sound fatter.

OPERATION

1. Switch power off on all equipment to be interconnected.
2. Connect Synth A MIDI OUT to Synth B MIDI IN jack.
3. Switch power on. After TUNE, notes played on Synth A will be played simultaneously on Synth B.
4. To enable Synth A program selections to simultaneously select Synth B programs, hold RECORD and press PROGRAM SELECT 1, on both units.
5. If Synth B is a Prophet-5, to reprogram Synth B with a specific sound from Synth A, select the Synth A program, then (on Synth A) hold RECORD and press PROGRAM SELECT 2. NOTE: The back panel RECORD switch must be set to ENABLE. Be careful not to inadvertently copy one program to another.
6. When the TUNE switch on the master is activated, the slave will also TUNE.
7. Although the Prophet-5 does not have the capability to send out its pitch wheel data over MIDI, it can be controlled by MIDI pitch wheel data coming from another instrument, such as a Prophet-600 or Prophet-T8. To enable, hold RECORD and press PROGRAM SELECT 4. If it is desired to reduce the effective range of the external pitch wheel, also press PROGRAM SELECT 3.
8. Steps 4 and 7 must be performed (if desired) each time power is switched on.
9. When retrofitted with MIDI, the DIGITAL interface will operate normally. This means a Model 1005 Polysequencer can be used to drive a number of synths in parallel.

Documents Enclosed

Figure 841-0 Template

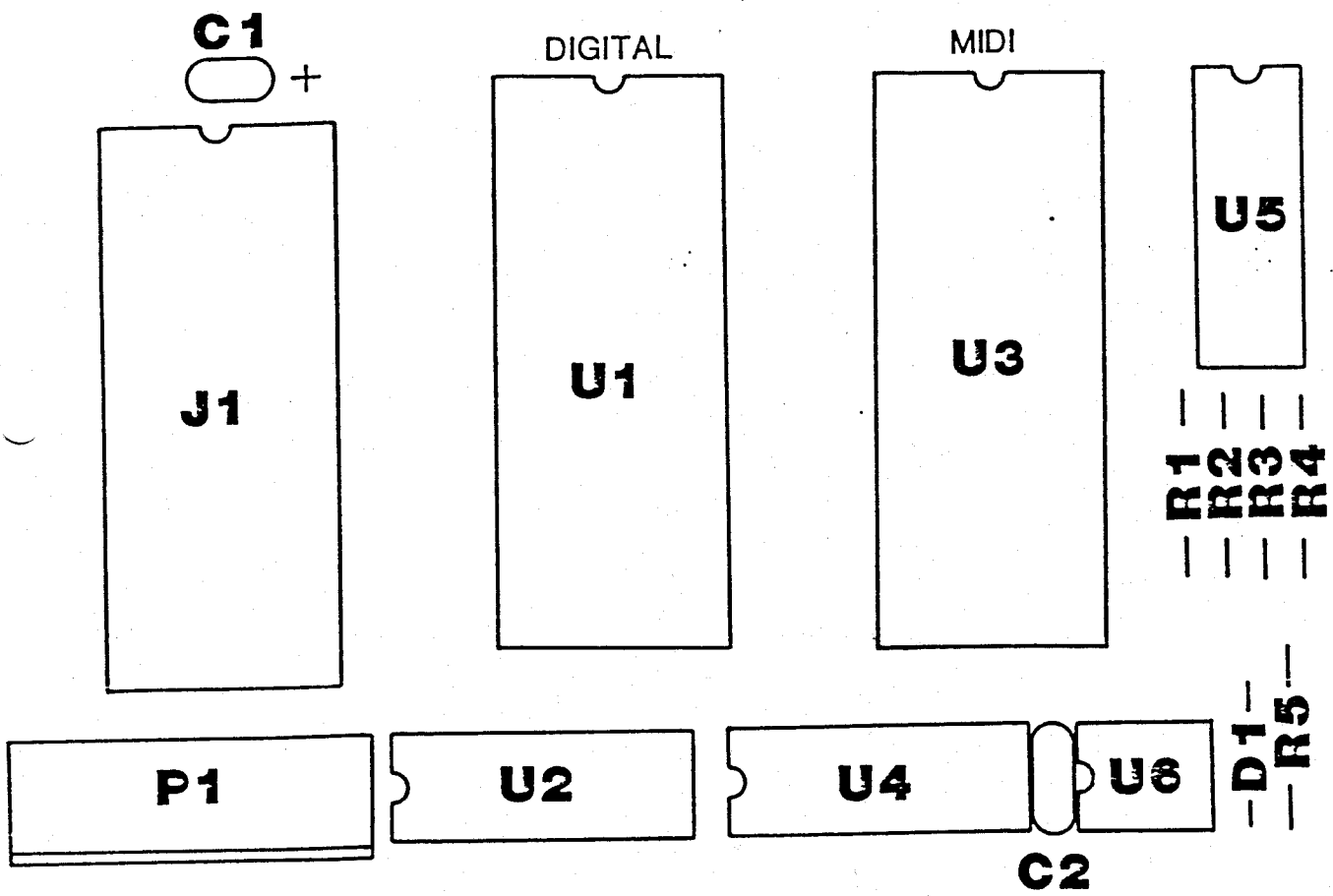
Schematic SD841-1A, MIDI PCB and INTERCONNECTION

Parts ID PP841-1A

Schematic 1000-SD361-MIDI

Prophet-5 PCB 3 MIDI MODIFICATIONS (sheets 1&2)

CM841-5B 11/83



PP841-1A

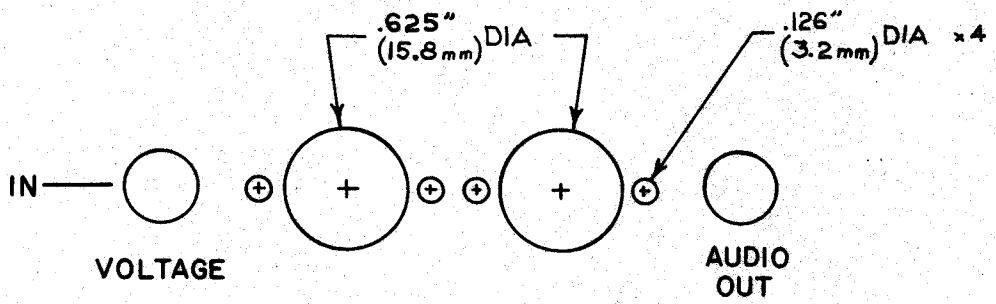
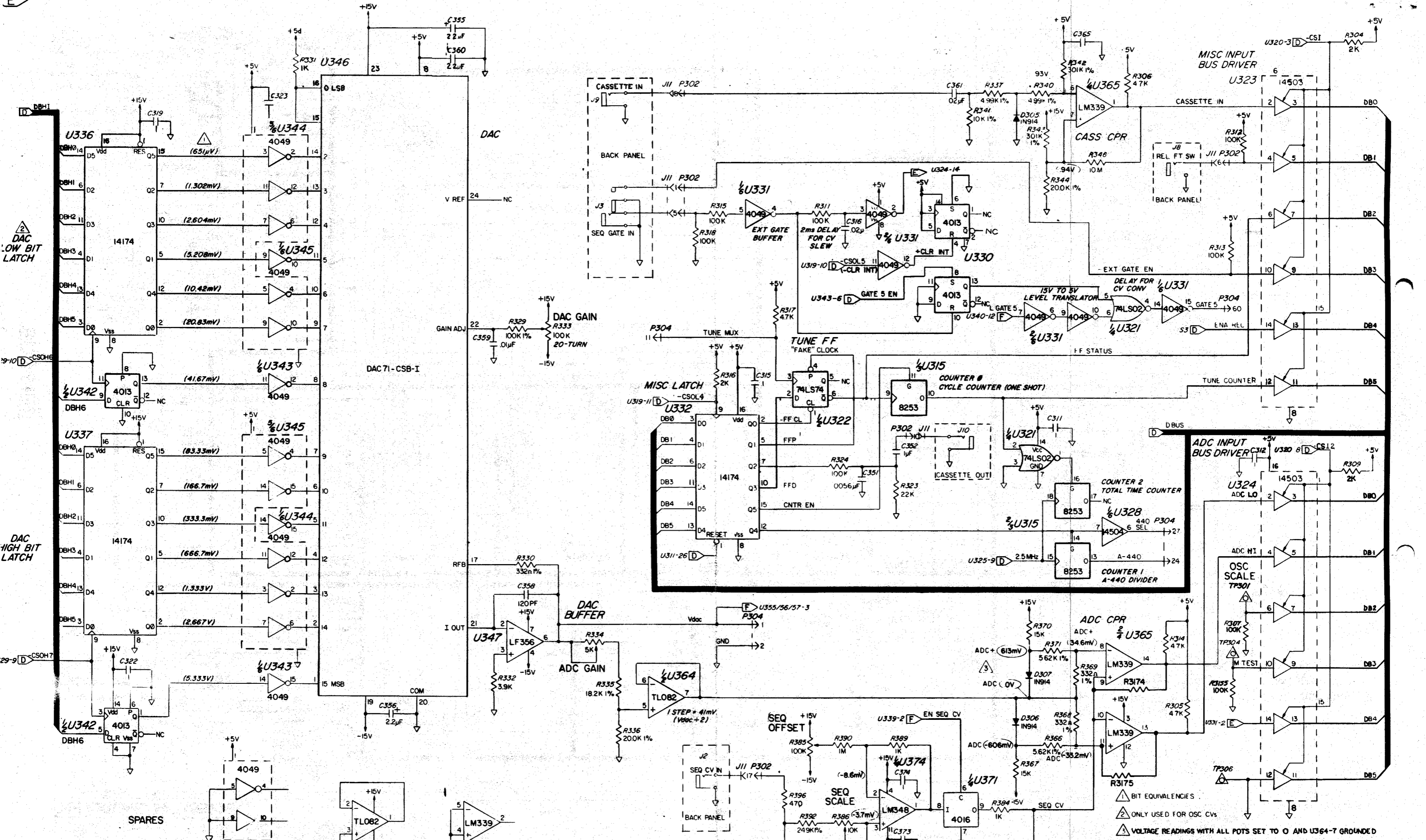


FIGURE 841-0



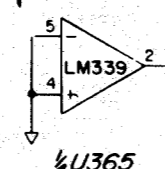
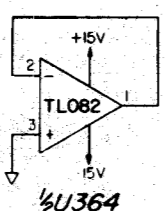
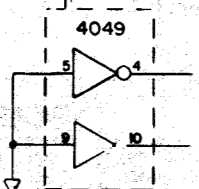
SEQUENTIAL CIRCUITS IN

PCB 3 DAC, ADC, TUNE, SEQ, CASS

1000 33

J	
H	
G	
F	
E	
D	
C	
B	
A	

SPARES



3/4 U343

1/4 U364

1/4 U365

- ▲ BIT EQUIVALENCIES
- ▲ ONLY USED FOR OSC CVS
- ▲ VOLTAGE READINGS WITH ALL POTS SET TO 0 AND U364-7 GROUNDED

MIDI CONTROL SUMMARY

	DRUMTRAKS	PROPHET-600	PROPHET-5	PROPHET-T8	PROPHET-2000
MODE	Mode 1: ENTER + 6. Mode 3: ENTER + 9. Defaults to Mode 1.	Versions 0_5 through 0_8: Mode 1 (default): RECORD + 6. Mode 3: RECORD + 8. Earlier versions always in Mode 1.	Versions 10_1 through 10_5: To toggle between Mode 1 (default) and Mode 3: RECORD + 6. Earlier versions always in Mode 1.	Mode 1: RECORD + 5. Mode 3 (3_5 through 3_8 only): RECORD + 8. Mode 4: RECORD + 6. Default: Mode 1.	Select MODE, then adjust with INC/DEC or VALUE knob. Default*: Mode 1.
CHANNEL	To display the base channel: ENTER + 0. To change: ENTER + 0 + INC or DEC. Non-volatile.	Versions 0_5 through 0_8: To display: RECORD + 9. To increment: RECORD + 9 + TUNE. All versions default to channel 1.	Versions 10_1 through 10_5: To step through channels 1 (default) through 16: RECORD + 8. Earlier versions always on channel 1.	Versions 3_5 through 3_8: For channels 1 (default) to 8: LEFT + 1-8. For channels 9 to 16: RIGHT + 1-8. Earlier versions always on channel 1.	Select CHANNEL, then adjust with INC/DEC or VALUE knob. Default*: channel 1.
PRESET SELECTIONS	N/A	En/disable send and receive: RECORD + 1. Default: disabled.	En/disable send + receive: RECORD + 1. Default: enabled.	En/disable send + receive: RECORD + 1. Default (version 3_4): disabled. Default (3_5 through 3_8): enabled.	En/disable transmit: OPTION 3. En/disable receive: OPTION 7. Default*: enabled.
WHEELS	Versions 1_0 through 1_4: N/A. Version 0_5: MOD wheel affects instrument volumes. PITCH wheel affects instrument tunings. Wheels are always enabled.	En/disable send and receive: RECORD + 4. Default: disabled.	En/disable wheel: receive PITCH ONLY RECORD + 3. Wide range: RECORD + 3. Medium range: RECORD + 4. Narrow range: RECORD + 3 + 4. Default (10_0 through 10_2): Disabled. Default (10_3 through 10_5): Medium range.	En/disable send + receive (both wheels): RECORD + 4. Default (version 3_4): disabled. Default (3_5 through 3_8): enabled.	En/disable MOD wheel transmit: OPTION 1. En/disable MOD wheel receive: OPTION 5. En/disable PITCH wheel transmit: OPTION 2. En/disable PITCH wheel receive: OPTION 6. Default*: enabled.
VELOCITY	Affects instrument volumes. Always enabled.	N/A	N/A	Always enabled.	Always enabled.
PRESSURE	N/A	N/A	N/A	Always enabled. Individual key pressure in Mode 4 only. Channel pressure in Mode 1 or Mode 3.	En/disable send (from MOD wheel): OPTION 4. En/disable receive (as MOD wheel): OPTION 8. Default*: enabled.
MIDI CLOCK	MIDI clocks always sent when pattern plays. En/disable MIDI clock in: Both TEMPOS + ENTER, then INC/DEC far left decimal point on/off.	N/A	N/A	Version 3_4: N/A. Versions 3_5 through 3_8: Always enabled.	Always sent when arpeggiator runs. To en/disable MIDI clock in, select ARPEGGIATOR RATE, then press EXECUTE. (Display decimal point lights when enabled.)
DUMPS	Sent by MIDI request only. Request dump all memory: ENTER + 3.	Current program: RECORD + 2. Versions 0_6 through 0_8: All sequences: RECORD + 5.	Current program: RECORD + 2. All programs: Sent upon external MIDI request.	Current program: RECORD + 2. Versions 3_5 through 3_8 only: All sequences: RECORD + SEQ/SEL.	Current sound: OPTION d1. Maps and parameter scalings: OPTION d2. Current preset: OPTION d3.
DISPLAY SOFTWARE VERSION	N/A	N/A	N/A	N/A	N/A
OTHER	Software version 0_4: Enable event transmit: ENTER + 4. Disabled event transmit: ENTER + 5. Default: enabled. Software version 0_5: En/disable event transmit: ENTER + 4. En/disable drum key mute: ENTER + 5. Default: enabled.	Center PITCH wheel: RECORD + 3. Voice defeat: RECORD + 7.	Voice defeat: Hold down key + 1 + 8.	Voice defeat: Hold down key + RECORD + 7. Center PITCH wheel: RECORD + 3.	* OPTIONS are recorded as part of each preset. Switch options on/off with EXECUTE switch. To switch between 31.25 kBaud and 61.25 kBaud, select OPTION bA, then press EXECUTE. ("+bA" indicates 61.25 kBaud.)