

---

# **KORG POLY-6 MIDI Retrofit**



## **OWNER'S MANUAL**

**by K. Kimball Holland and Freff**

**design and illustration by Madeleine Robins**

---

# TABLE OF CONTENTS

---

1. Introduction	-
2. List of Features	1
3. Installation and Warranty	1
4. MIDI and your POLY6	2
5. Rear Panel Connections	3
6. Operating Your MIDI POLY-6	4
Program Select	4
Damper (Sustain) Footswitch	5
All Notes Off Command	6
7. MIDI Access Mode—Calling Up MIDI Functions	7
8. Descriptions of POLY-6 MIDI Functions	10
MIDI Parameter Reset	10
MIDI Receive and Transmit Channels	11
Arpeggiator Sync to MIDI	11
Omni Mode On/Off	12
Local Control On/Off	13
MIDI Data Filters	14
Note On/Off	14
Pitch and Mod Wheels	15
9. Tape Interface (New and Old Tape Formats)	16
10. POLY-6 System Exclusive Functions	18
11. System Exclusive Data Formats	21

## 1. INTRODUCTION

---

Thank you for purchasing the PS6-MRK MIDI retrofit for your Korg Poly-6 synthesizer. And congratulations! The retrofit brings new life to a classic analog instrument through a comprehensive MIDI implementation—perhaps the most advanced ever devised for a pre-MIDI synth.

To get the most from your Poly-6 with MIDI, please read this manual thoroughly.

---

## 2. LIST OF FEATURES

---

1. Note On/Off (7 octave playing range).
2. Pitch and Mod Wheel Transmit/Receive.
3. 120 Program Memory (programs selectable via MIDI). \*\*
4. Universal Damper/Sustain Footswitch Jack (with MIDI SUSTAIN). \*\*
5. Arpeggiator Sync to MIDI (8 selectable sync rates, with resolution from quarter-note to 32nd-note triplet).
6. MIDI In, Out, AND Thru JACKS.
7. Independently Selectable MIDI Transmit and Receive Channels.
8. Omni Mode On/Off (via MIDI or front panel).
9. Local Control On/Off (via MIDI or front panel).
10. Load and Save Programs via MIDI (plus parameter update via MIDI System Exclusive commands).
11. Independently Selectable Data Filters (for MIDI TRANSMIT and RECEIVE).
12. Auto-Dual Mode Tape Interface (reads, writes, and verifies both 32-program and 120-program formats).
13. Selectable Loading OF 32-Program Tapes (into 1 of 3 different memory sections).
14. MIDI Parameter Reset command.

\*\* new hardware feature

## 3. INSTALLATION-WARRANTY

---

Your MIDI retrofit was installed by a specially trained and authorized Korg Service Facility, and is warranted for parts and workmanship for ninety (90) days from the date when it was installed. There are no user-adjustable or replaceable parts in either the Poly-6 or the retrofit. If trouble develops, bring your instrument back to the service center where the retrofit was installed.

This warranty applies ONLY to the MIDI retrofit and its installation. This warranty does NOT cover the original Poly-6 circuitry, which is subject to the standard Korg one-year factory warranty to the original purchaser.

---

## 4. MIDI AND YOUR POLY-6

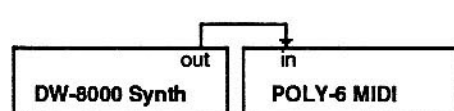
---

MIDI (which stands for *Musical Instrument Digital Interface*) is a universal system which allows a wide variety of electronic musical products to "talk" to each other via inexpensive and easily obtainable MIDI cables.

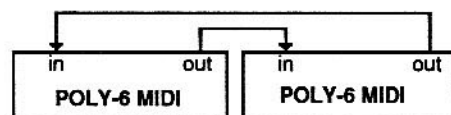
With MIDI, you can interconnect any number of keyboards, expander modules, drum machines, audio processors, lighting controllers, and even personal computers, to create musical networks of vastly increased power and flexibility.

Your MIDI-equipped Poly-6 requires no special procedures for normal operations: except for the expanded PROGRAM STORAGE and DAMPER/SUSTAIN FOOTSWITCH capabilities, it functions virtually the same way as it did before the retrofit's installation.

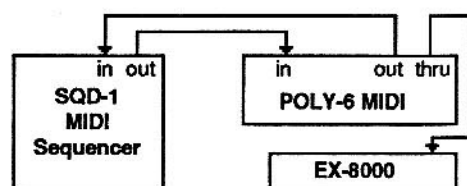
With the addition of MIDI, however, many new uses become possible. The following are examples of some of the things you might wish to try:



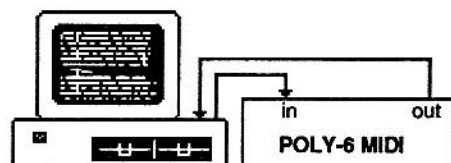
1. Interfacing a Korg DW-8000 to a Poly-6



2. Interfacing two Poly-6s together



3. Interfacing a Poly-6 and an EX-8000 Expander Module with a sequencer



4. Interfacing with a personal computer

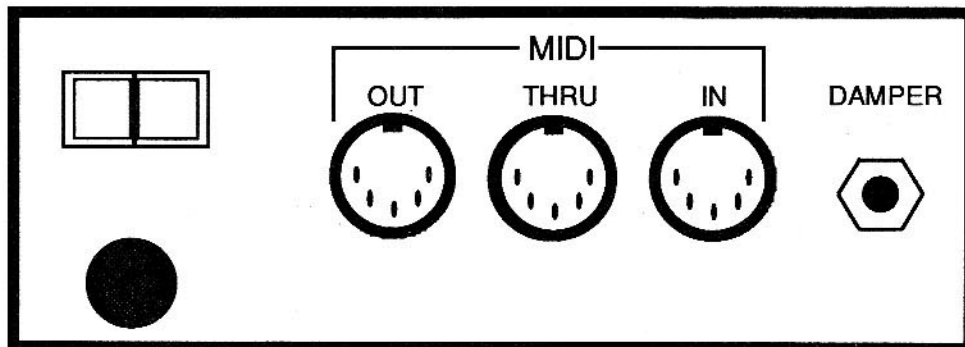
For more information regarding MIDI functions, ask your Korg dealer for Korg's *Understanding MIDI* booklet; or contact the International MIDI Association, 11857 Hartsook Street, North Hollywood, California 91607 (telephone: 818-505-8964)

---

## 5. REAR PANEL CONNECTIONS

---

The MIDI retrofit adds four jacks to your Poly-6's rear panel. These jacks, located next to the ON/OFF switch and power cord, are shown in the illustration below.



1. **MIDI OUT:** The MIDI OUT jack sends MIDI data from the Poly-6 to other MIDI gear. Data sent includes keyboard information, pitch and mod wheel movement, program selection, damper/sustain pedal, etc.
  2. **MIDI THRU:** The MIDI THRU jack sends out an exact copy of all MIDI data received by the MIDI IN. THRU jacks are generally used to "daisy chain" a string of MIDI devices together from the same transmitting device.
  3. **MIDI IN:** The MIDI IN jack receives MIDI information from other MIDI gear (keyboards, remote keyboards, sequencers, etc.).
  4. **DAMPER/SUSTAIN:** The DAMPER/SUSTAIN jack works with any "momentary contact" footswitch, such as Korg's PS-1, DS-1 or PS-2. Stepping on a such a footswitch, once attached, will cause all notes being played on the Poly-6 to sustain (likewise, all notes being played by external units connected to the Poly-6 via MIDI).
- ◆ **NOTE:** The Poly-6 DAMPER/SUSTAIN jack will accept either a "normally open" or "normally closed" footswitch. It automatically configures itself for the connected footswitch when power is turned on.

**NOTE:** FOR PROPER OPERATION, BE SURE THE FOOTSWITCH IS PLUGGED INTO THE DAMPER/SUSTAIN JACK **BEFORE** TURNING ON THE POLY-6. *Do not step on the switch while turning the power on. If you do, the switch will work backwards.*

## 6. OPERATING YOUR MIDI POLY-6

There are three new **hardware** features in your Poly-6 with MIDI:

EXPANDED PROGRAM MEMORY (from 32 to 120)  
DAMPER/SUSTAIN FOOTSWITCH FUNCTIONS  
ALL NOTES OFF FUNCTION

This section of the manual describes their use.

### PROGRAM SELECT

The MIDI retrofit expands program storage from 32 to 120. These 120 programs are stored in 15 banks of 8 programs each.

- ◆ You select **banks** using the four BANK buttons (A through D), either individually or in combinations.
- ◆ You select **programs** within each bank using one of the eight PROGRAM buttons (1 through 8).

LED indicators in these buttons indicate which bank and program are currently selected.

The following chart shows the button combinations used to call up the 120 programs.

Prgm #	A	B	C	D	Prgm #	A	B	C	D	Prgm #	A	B	C	D
1-8					41-48					81-88				
9-16					49-56					89-96				
17-24					57-64					97-104				
25-32					65-72					105-112				
33-40					73-80					113-120				
PROGRAM														
1 2 3 4 5 6 7 8														

---

In general, you will find that remembering program numbers in the new, expanded scheme will be just as easy as in the old one. Before, you remembered programs by BANK letter and PROGRAM number: A-6, C-3, D-8, and so on. Now you just add the additional BANK letters (if any): AB-7, ACD-4, BD-6, etc. This is easy, and it doesn't require you to load or remember programs in any particular order.

Program selection is transmitted and received over MIDI (unless prevented by the setting of the DATA FILTERS; see the *DATA FILTER* section on page 14 for more information). This allows your Poly-6 to change other instruments' programs over MIDI, or vice versa.

When matching Poly-6 programs to those in other instruments, refer to the diagram on the previous page. Follow these general rules to coordinate program selection:

- ◆ In **Base 8** program numbering (numbers 1–8 *only* are used), the different Poly-6 Banks correspond to the left hand digit, while the Poly-6 program number corresponds to the right hand digit.

*Example:* AC-4 = 54

- ◆ In **Base 10** program numbering (numbers 0–9 are used), use the "PRGM #" column in the diagram on the previous page as your guide.

*Example:* AC-4 = 36

**Note** that the numbers may be one less than the numbers indicated, if your instrument uses program number "00." Refer to your instrument's MIDI implementation to be sure.

For convenience, you might want to create a master chart cross-referencing all your instruments and their different program-numbering schemes.

- ◆ **NOTE:** MIDI allows for 128 programs, numbered from 0 to 127. Your Poly-6 with MIDI has 120 programs, represented by MIDI program numbers 0 through 119. If your instrument receives MIDI program numbers 120 through 127, it will "wrap around" and call up programs as follows:

PROGRAM NUMBER RECEIVED	PROGRAM CALLED UP
120 to 127	A-1 through A-8

## DAMPER/ SUSTAIN FOOTSWITCH



The MIDI retrofit adds a rear panel DAMPER/SUSTAIN footswitch jack to your Poly-6, which, when activated, sustains or holds notes played on the Poly-6's keyboard. (The Poly-6 also has two additional special SUSTAIN functions with HOLD and ARPEGGIATOR functions. See next page.)

---

In the normal SUSTAIN mode, stepping on a footswitch connected to the DAMPER/SUSTAIN jack will cause all notes being played on the Poly-6 (and connected MIDI instruments) to sustain after the keys are released. Some sounds will continue indefinitely, while others will gradually die out, depending on the programmed setting of the Poly-6's DECAY and SUSTAIN controls.

When the Poly-6's HOLD button is on, SUSTAIN acts as a "temporary HOLD release" footswitch. Stepping on it and then releasing it causes held notes to cut off. (HOLD is still active, however, so any new notes played will hold until the footswitch is depressed and released again, or HOLD is switched off.)

With the Poly-6 Arpeggiator on, SUSTAIN acts as a temporary "Latch switch." See the **ARPEGGIATOR** section, pages 11-12, for further information.

The Poly-6 sends and receives SUSTAIN ON/OFF data over MIDI (unless prevented by doing so by the setting of the DATA FILTERS; see the **DATA FILTER** section on page 14 for more information). This allows several instruments' SUSTAIN to be controlled (or not controlled) by the Poly-6, and vice-versa.

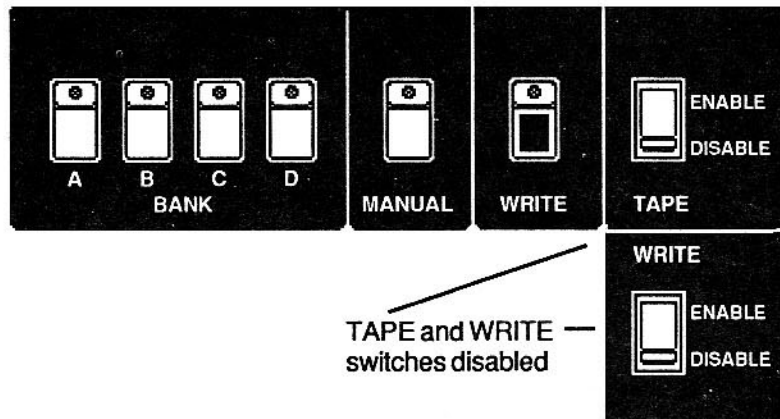
## ALL NOTES OFF COMMAND



If the Poly-6 continues to play even after all keys are released, or if the instrument is functioning erratically, make sure the WRITE switch is DISABLED and then press the WRITE button. This will cancel all sounding notes and controller changes.

Pressing the WRITE button also sends out an ALL NOTES OFF command over MIDI, to silence any external devices.

Press WRITE to Cancel  
all Sounding Notes



---

## 7. MIDI ACCESS MODE—CALLING UP MIDI FUNCTIONS

---

The MIDI equipped POLY-6 offers a number of user selected MIDI functions which expand its capabilities:

1. MIDI Parameter RESET
2. MIDI Receive Channel
3. MIDI Transmit Channel
4. Arpeggiator Sync to MIDI
5. OMNI Mode On/Off
6. LOCAL CONTROL On/Off
7. MIDI Receive DATA FILTERS
8. MIDI Transmit DATA FILTERS

These MIDI functions are accessed in the Poly-6's **Tape Interface mode** by depressing combinations of the front panel PROGRAM NUMBER buttons (see diagrams on the following page). Tape Interface functions continue to be selected by pressing BANK buttons (see chapter 9).

### To Enter MIDI Access Mode:

Set TAPE switch to ENABLE.

### To Choose a MIDI Function:

Press PROGRAM buttons 1 through 4 either singly or in combination. *The charts on the following pages show which buttons call up which functions.*

The current setting of the selected MIDI function will be displayed by the LEDs of PROGRAM buttons 5 through 8. *The charts on the following pages show what settings the LEDs represent.*

### To Change One of the Settings:

Set the WRITE switch to ENABLE, and push PROGRAM buttons 5 through 8 as required in order to make the right combination of LEDs glow.

When finished, move the WRITE switch back to DISABLE.

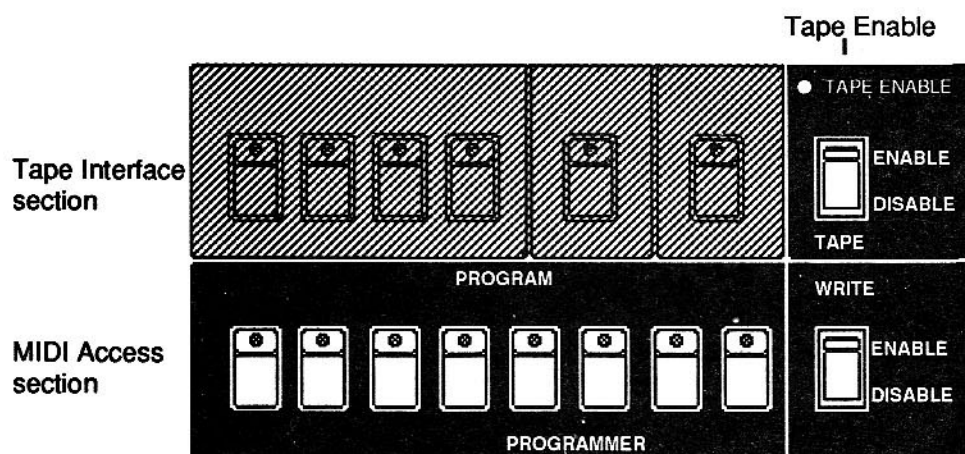
### To Leave MIDI Access Mode:

Move the TAPE switch back to DISABLE.

*On the next two pages you'll find diagrams showing all the MIDI SWITCH COMBINATIONS and what they mean in terms of MIDI functions.*

**Note:** Unlike pre-MIDI Poly-6s, switching in and out of Tape Interface/MIDI Access mode retains the currently selected program and any program edit changes you may have made.

## Accessing MIDI Functions



with WRITE disabled, view parameters *only*

with WRITE enabled, change parameters



## MIDI Switch Combinations

MIDI FUNCTION	SWITCH FUNCTION							
	1	2	3	4	5	6	7	8
MIDI RECEIVE CHANNEL					See TABLE A, below			
MIDI TRANSMIT CHANNEL					See TABLE A, below			
OMNI ON/OFF LOCAL CONTROL ON/OFF							LOCAL on, off	OMNI on off
MIDI RECEIVE DATA FILTERS							sus-tain	pgm chnge
MIDI TRANSMIT DATA FILTERS							sus-tain	pgm chnge
ARPEGGIATOR CONTROL					See TABLE B, below			

**TABLE A**  
MIDI CHANNEL SELECTION

MIDI CHNL	Switch #	MIDI CHNL	Switch #
	5 6 7 8		5 6 7 8
1		9	
2		10	
3		11	
4		12	
5		13	
6		14	
7		15	
8		16	

**TABLE B**  
ARPEGGIATOR MODE SELECT

FUNCTION	Switch #
	5 6 7 8
Internal Sync	
1/4 note	
1/4 note triplet	
1/8 note	
1/8 note triplet	
1/16 note triple	
1/16 note triplet	
1/32 note	
1/32 note triplet	

"X" – not used

---

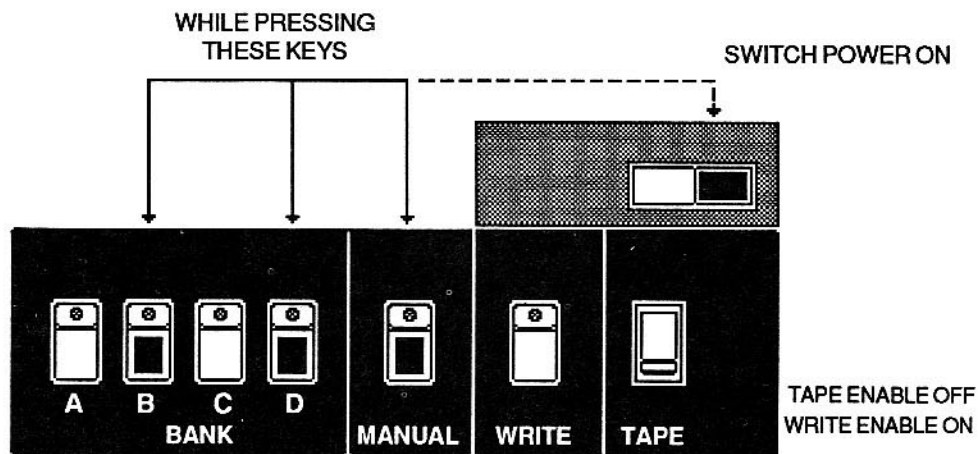
## 8. DESCRIPTION OF POLY-6 MIDI FUNCTIONS

---

- ◆ **PLEASE NOTE:** these descriptions are specific to the MIDI retrofit for the Poly-6. For general descriptions of MIDI and MIDI applications, see Korg's *Understanding MIDI* booklet, which may be obtained from your Korg dealer or by writing directly to Korg USA.

### MIDI PARAMETER RESET

This command restores all Poly-6 MIDI functions to their **default** settings, i.e., the way they were at installation (see table, following page).



### To Reset All MIDI Functions to Default Settings:

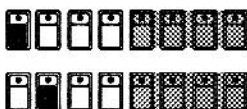
1. Turn off the Poly-6.
2. Turn WRITE switch to ENABLE.
3. Hold down the B, D and MANUAL buttons **simultaneously**.
4. While holding down the buttons, turn the Poly-6 back on.
5. Set the WRITE switch to DISABLE.

---

## POLY-6 MIDI Default Settings:

RECEIVE CHANNEL = 1  
TRANSMIT CHANNEL = 1  
ARPEGGIATOR = INTERNAL CONTROL  
OMNI MODE = ON  
LOCAL CONTROL On/Off = ON  
DATA FILTERS = ALL OFF

## MIDI RECEIVE AND TRANSMIT CHANNELS



With the MIDI retrofit, a Poly-6 can transmit and receive MIDI Data on any of the 16 MIDI channels. Furthermore, it can simultaneously transmit and receive on separate channels. This gives the instrument maximum flexibility of use in a multi-instrument MIDI system.

- ◆ **NOTE:** the Poly-6 can also receive on ALL channels simultaneously, depending on the OMNI mode setting. *See page 12 for details.*

The RECEIVE and TRANSMIT channels are selected in MIDI ACCESS mode by pressing combinations of PROGRAM buttons 5 through 8. *The proper settings for each channel are shown in the charts on pages 8 and 9.*

## ARPEGGIATOR SYNC TO MIDI



The MIDI retrofit makes it possible for the Poly-6's built-in Arpeggiator to synchronize to incoming MIDI START, STOP and CLOCK signals. This can be done at your choice of eight different MIDI CLOCK rates, so your Poly-6 can be controlled by external sequencers, drum machines, or other MIDI devices.

These new MIDI/ARPEGGIATOR functions are set and changed using the PROGRAM buttons while in MIDI ACCESS MODE, which is activated by setting both the TAPE and WRITE switches to ENABLE. *See MIDI ACCESS MODE on page 7 for more information.*

While in MIDI ACCESS mode (TAPE and WRITE both ENABLED), with ARPEGGIATOR CONTROL selected (program buttons 1 and 4 ON), it is program button 8 that determines whether the Arpeggiator is, or is not, controlled via MIDI:

—If button 8 is OFF, the Arpeggiator is NOT controlled by MIDI. Instead, it is controlled by the front panel ARPEGGIATOR ON/OFF and SPEED controls (or by anything plugged into the rear panel EXT. SYNC jack). This is the same as pre-retrofit Arpeggiator operation.

*continued*

---

—If button 8 is ON, the Arpeggiator IS controlled by MIDI. All Arpeggiator timing will be controlled by MIDI START, STOP, and CLOCK signals coming to the MIDI IN jack from external devices. Any clock signals coming into the instrument at the EXT. SYNC jack will be ignored. In this mode, the front panel ARPEGGIATOR SPEED control has no effect, but ON/OFF still works.

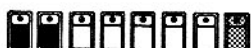
- ◆ **NOTE:** in this mode the Poly-6 is always keeping track of correct MIDI timing, even when the front panel ARPEGGIATOR ON/OFF button is OFF and the Poly-6 is not arpeggiating. This way, the Poly-6 will instantly play in sync with an external device whenever the ARPEGGIATOR ON/OFF button is turned ON.
- ◆ **NOTE:** even when the Arpeggiator's rate is being controlled over MIDI, the LED on the front panel of your Poly-6 will flash in time with the **internal** Arpeggiator settings. Don't let this confuse you.

Your choice of MIDI clock rate, from the eight that are available, is made using PROGRAM buttons 5, 6, and 7. *See the MIDI SWITCH COMBINATIONS CHART on page 9 for more information.*

**ARPEGGIATOR FUNCTION OF THE DAMPER/SUSTAIN FOOTSWITCH:** when the Arpeggiator is on, the DAMPER/SUSTAIN footswitch functions as a temporary LATCH switch. Holding the footswitch down makes the instrument "latch" onto notes as they are played, and include them in the arpeggiating pattern. Releasing the pedal lets the latched notes go, so that the only notes which will arpeggiate are those actually being held down. (This function will also be activated by remote SUSTAIN commands received over MIDI, unless prevented from doing so by the DATA FILTERS. *See the DATA FILTER section on page 14 for more information.*)

- ◆ **NOTE:** the MIDI retrofit eliminates the repeating upper and lower notes which previously occurred in the arpeggiator's UP/DOWN mode.

## OMNI MODE ON/OFF



The MIDI retrofit supports two MIDI modes.

- 1) **OMNI ON POLY mode** (called "OMNI" mode): in this mode, the Poly-6 receives and obeys MIDI messages **regardless** of what channel they are sent on; the Poly-6's RECEIVE CHANNEL setting will have no effect.
  - ◆ This mode is useful when two or more instruments are connected for simultaneous ("layered") playing.
- 2) **OMNI OFF POLY mode** (called "Poly" mode): in this mode, the Poly-6 receives and obeys **only** the MIDI messages coming in over the MIDI channel specified by the RECEIVE CHANNEL setting. All other channels are ignored.

- ◆ This mode is most useful when playing the Poly-6 from a multi-track MIDI sequencer (such as Korg's SQD-1 MIDI Recorder), in a multi-instrument setup where each instrument must play a different part.
- ◆ **NOTE:** the Poly-6 Arpeggiator will **always** receive MIDI START, STOP, and CLOCK signals, regardless of the OMNI MODE or RECEIVE CHANNEL settings.

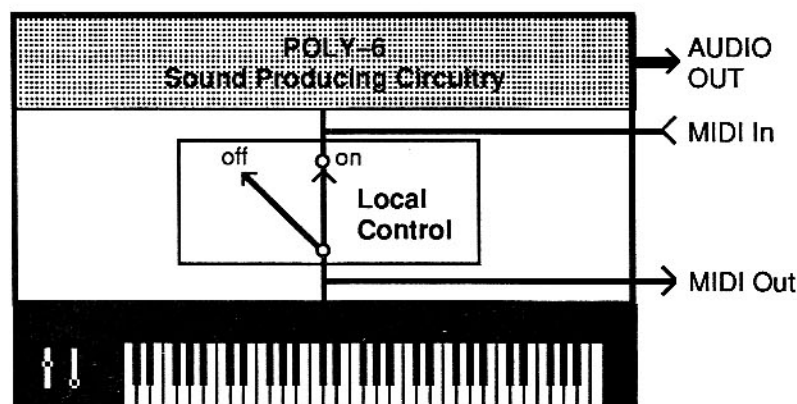
When you turn on the Poly-6 it starts in OMNI ON mode. It can then be changed to OMNI OFF mode in one of two ways: through special commands received over MIDI, or by manually entering MIDI ACCESS mode and turning the OMNI mode setting to OFF. *See page 8 for more details.*

## LOCAL CONTROL ON/OFF



This parameter is an ON/OFF control for the connection between the Poly-6's keyboard, wheels, damper pedal, etc., and its sound-producing circuitry.

- 1) If LOCAL CONTROL is ON, then the Poly-6 plays, as it normally does, from its own keyboard and controls.
  - 2) If LOCAL CONTROL is OFF, then the Poly-6's keyboard, pitch wheel, mod wheel, and damper footswitch are disconnected from the instrument's sound-generating circuitry and have **no** effect on the instrument, or any sounds it plays in response to signals received over MIDI.
- ◆ **NOTE:** When LOCAL CONTROL is OFF, all keyboard, wheel, etc. data is **still** being transmitted out the MIDI OUT jack, and will affect connected instruments. Likewise, even with LOCAL CONTROL off, data coming in the MIDI IN jack will affect the Poly-6's internal sounds.



*continued*

---

LOCAL CONTROL is a relatively new feature which can be useful in a number of ways. Here's one example: if your Poly-6 is the master keyboard in a sequencer set-up, setting LOCAL CONTROL to OFF lets the instrument's built in voices play back a previously recorded track while simultaneously recording a new part played on its keyboard on a different track.

When you turn the Poly-6 on it starts up with LOCAL CONTROL set to ON. It may then be changed by special commands received over MIDI, or by changing the setting of the LOCAL CONTROL ON/OFF parameter in the MIDI Access mode (see page 8).

## MIDI DATA FILTERS



The data filters allow you to selectively prevent the reception or transmission of certain kinds of MIDI data. There are eight filters: four that you can apply to reception, and four for transmission. They are set using the PROGRAM buttons while in MIDI ACCESS mode. See page 8 for the a diagram showing the proper button combinations.

The following types of MIDI Data can be filtered (in either direction):

- Pitch Bend
- Oscillator Modulation
- Sustain ON/OFF
- Program Change

When a data filter is ON, the data it is set for will be removed from the MIDI stream.

When a data filter is OFF, the data it is set for will **not** be blocked, but transmitted or received as normal.

## NOTE ON/OFF



**TRANSMISSION:** Notes played on the Poly-6's keyboard are transmitted over a 5 octave range (MIDI note numbers 36-96). *The MIDI note number that is transmitted is NOT affected by the setting of the front panel OCTAVE switch.*

**RECEPTION:** The Poly-6 receives MIDI note information over the full MIDI note range (0-127), but the instrument's oscillators only have a seven octave range, the equivalent of a grand piano keyboard (MIDI note numbers 24-108). If the oscillators are asked to play outside their range, they will sound the identical note in the nearest playable octave.

---

Unlike transmission, in reception the note that is played **is** affected by the OCTAVE switch setting on the Poly-6's front panel—and by the CHORD MEMORY settings, too.

- ◆ **PLEASE NOTE:** to play in unison when using an 88-note keyboard (such as Korg's SG-1D Sampling Piano) to control the Poly-6, set the Poly-6's OCTAVE switch to 8.

## PITCH AND MOD WHEELS



The MIDI retrofit transmits and received both Pitch Bend and Oscillator Modulation Depth (Vibrato) data (unless blocked by the DATA FILTERS; see page 14).

Movements of the Pitch Wheel are always transmitted over MIDI at “full strength,” regardless of front panel's BEND INTENSITY setting. Be aware, however, that it only works that way for MIDI transmission. The Poly-6's response to its own Pitch Wheel, and to pitch bend signals coming in over MIDI, will **definitely** be affected by the front panel BEND INTENSITY setting.

Vibrato **speed** is always controlled by the Poly-6's MG SPEED setting, no matter whether the OSCILLATOR MODULATION DEPTH data comes in via MIDI or is generated directly from the Poly-6's Mod Wheel.

- ◆ **Note:** If either WHEEL's function seems “frozen” or functions erratically, depress the WRITE button with WRITE switch *disabled* to reset these conditions. See page 6.

## 9. TAPE INTERFACE (NEW AND OLD TAPE FORMATS)

The MIDI retrofit can load, save, and verify program tapes in two different formats:

- 1) The NEW format of 120 programs.
- 2) The OLD format of 32 programs (standard on all non-MIDIed Poly-6s.)

In most cases, you should follow the normal Tape Interface procedures described in your Poly-6 Owners Manual. *New Tape Interface functions involving the MANUAL and WRITE buttons are noted below and on the next page.*

OPERATION number of programs	TAPE INTERFACE BUTTONS						PROGRAM NUMBERS AFFECTED			
	A	B	C	D	Manual	Write	1-32	33-64 <i>64</i>	65-96 <i>65-96</i>	97-120
Tape SAVE										
120 Programs										
32 Prgms-1st Bank										
Tape VERIFY										
120 Programs										
32 Prgms-1st Bank										
Tape LOAD										
120 programs										
32 Prgms-1st Bank										
32 Prgms-2nd Bank										
32 Prgms-3rd Bank										

---

## SAVING



The Poly-6 with MIDI retrofit can save either all 120 programs **or** just the first 32 (for compatibility with Poly-6s without the MIDI retrofit).

- ◆ To create a **120-program** tape, make all necessary connections to your tape deck and press TO TAPE.
- ◆ To create a **32-program** tape simply press and hold MANUAL before pressing TO TAPE (*see diagram, previous page*).

## VERIFYING



The Poly-6 can verify either 120-program or 32-program tapes created by the Save function. Selection of tape format is automatic. Follow normal tape interface procedures.

## LOADING



The Poly-6 can load either 120-program or 32-program tapes. Selection of tape format is automatic.

You can also load 32-program tapes into the second or third memory sections of the Poly-6's expanded program memory. To do so, press and hold either MANUAL or WRITE before pressing FROM TAPE. *See diagram on previous page.*

- ◆ **NOTE:** You can't load a 120-program tape into the 2nd or 3rd memory sections. Attempting to do so will signal an ERROR.
- ◆ **NOTE:** You can use this feature to "mix" programs from different Poly-6's into yours. Just save a 32-program tape from the other Poly-6, and then load that tape into any of the three available sections in your Poly-6.

### Note to Users!

Your Poly-6 retrofit comes loaded with 120 programs created by the authors of the retrofit. A tape is included so you can always reload the original programs. The names of the programs on this tape can be found on the insert sheet at the back of your manual

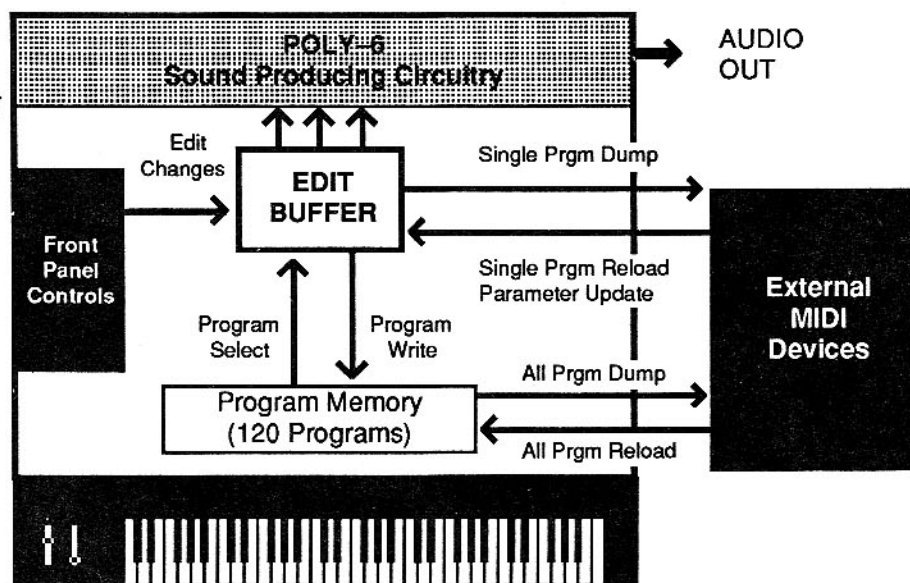
## 10. POLY-6 SYSTEM EXCLUSIVE DATA

The MIDI retrofit gives your Poly-6 the powerful ability to send and receive Program, Parameter and MIDI Status data over MIDI via System Exclusive commands. *See table below.* Such commands make many things possible, among them special sequencer applications, off-line program storage, program display and editing via computer, etc.

Received	Transmitted
DEVICE ID REQUEST	DEVICE ID
SINGLE PROGRAM DUMP REQUEST	Data from Single Program
SINGLE PROGRAM RELOAD REQUEST	-----
SINGLE PROGRAM WRITE TO MEMORY REQUEST	WRITE COMPLETED/WRITE ERROR
ALL PROGRAM DUMP REQUEST	Data from 120 Programs
ALL PROGRAM RELOAD REQUEST	WRITE COMPLETED/WRITE ERROR
PARAMETER UPDATE REQUEST	-----
GLOBAL PARAMETER UPDATE REQUEST	-----

To understand the various Systems Exclusive commands, several basic concepts concerning the Poly-6's internal organization must be understood. *See diagram below.*

### POLY-6 INTERNAL ORGANIZATION (DATA TRANSFER)



---

As the diagram on the previous page shows, the Poly-6's memory consists of two sections: **Program Memory** (where the 120 programs are stored) and an **Edit Buffer** (where the parameters for the currently selected program, such as Attack, Resonance, etc., are held). The parameters in the Edit Buffer directly control the Poly-6 sounds.

Whenever you select a new program (using the Bank and Program Number buttons) the parameters for that program are transferred from Program Memory to the Edit Buffer.

You edit the current program by changing and adjusting the front panel controls. These changes affect only the settings in the **Edit Buffer**, and are temporary.

Edit changes are made permanent by executing a Write-to-Memory operation (using the WRITE Button), which transfers the altered program data from the Edit Buffer back into Program Memory, replacing the program data that was there before.

The MIDI retrofit provides the Poly-6 with MIDI System Exclusive commands that let all of the above functions (and more) be done remotely, via MIDI:

1. The DEVICE ID function allows external units to identify the presence of a Poly-6. The Poly-6 will transmit its ID number (11H) whenever it receives a Device ID Request command.
2. The PROGRAM SELECT (standard MIDI protocol) command is the MIDI equivalent of using the front panel to select a new program. Program number is specified over MIDI.
3. The SINGLE PROGRAM WRITE TO MEMORY request is the MIDI equivalent of using the front panel WRITE button to write a program to Program Memory. Program number is specified over MIDI.
4. The SINGLE PROGRAM DUMP and SINGLE PROGRAM RELOAD commands transfer data from one program to and from the Edit Buffer and external MIDI devices. As with selecting programs from the front panel, these commands do **not** change Program Memory -- only the Edit Buffer.
5. The ALL PROGRAM DUMP and ALL PROGRAM RELOAD commands load and unload the entire Program Memory over MIDI. Unlike the SINGLE PROGRAM commands mentioned above, these commands do **not** affect the Edit Buffer.
6. The PARAMETER UPDATE REQUEST command changes a single parameter in the Poly-6's Edit Buffer. It is the MIDI equivalent of changing a front panel synth control.

*continued*

---

7. The GLOBAL PARAMETER UPDATE REQUEST command changes the Poly-6's MIDI parameters, plus certain "overall" instrument parameters which are not stored in Poly-6 programs. These parameters are:

- ◆ POLY-6 "MIDI" PARAMETERS (Receive Channel, Transmit Channel, OMNI On/Off, Local Control On/Off, all MIDI Data Filters, Arpeggiator Int/Ext Sync, Arpeggiator Timing)
- ◆ KEY ASSIGN MODES (Poly, Unison, Chord Memory & Hold)
- ◆ ARPEGGIATOR ON/OFF.

# 11. SYSTEM EXCLUSIVE DATA FORMATS

## TRANSMITTED DATA

### 1.1 Device ID

1111 0000	F0	Exclusive status
0100 0010	42	Korg ID
0011 nnnn	3*	Format ID
0001 0001	11	Poly Six ID
1111 0111	F7	EOX

### 1.2 Write Completed

1111 0000	F0	Exclusive status
0100 0010	42	Korg ID
0011 nnnn	3*	Format ID
0001 0001	11	Poly Six ID
0010 0001	21	Write Complete
1111 0111	F7	EOX

### 1.3 Write Error

1111 0000	F0	Exclusive status
0100 0010	42	Korg ID
0011 nnnn	3*	Format ID
0001 0001	11	Poly Six ID
0010 0010	22	Write Error
1111 0111	F7	EOX

### 1.4 Single Program Data Dump

1111 0000	F0	Exclusive status
0100 0010	42	Korg ID
0011 nnnn	3*	Format ID
0001 0001	11	Poly Six ID
0100 0000	40	Data Dump
0vvv vvvv	xx	Program data:**
0v00 0000	x0	1 Pgm-32 bytes
:	:	(see Poly-6
0vvv vvvv	xx	BIT MAP)
0v00 0000	x0	
1111 0111	F7	EOX

### 1.5 All Program Data Dump

1111 0000	F0	Exclusive status
0100 0010	42	Korg ID
0011 nnnn	3*	Format ID
0001 0001	11	Poly Six ID
0100 1100	4C	Program Data Dump
0vvv vvvv	xx	Program data:**
0v00 0000	x0	120 Pgm-3840 bytes
:	:	(see Poly-6
0vvv vvvv	xx	BIT MAP)
0v00 0000	x0	
0vvv vvvv	cc	Check Sum (mod 128)
1111 0111	F7	EOX

\* = transmit channel

\*\* = all program data transmitted in 2 bytes:  
most significant 7 bits, then least  
significant bit:

0vvv vvvv  
0v00 0000

---

## RECEIVED DATA

### 2.1 Device ID Request

1111 0000	F0	Exclusive status
0100 0010	42	Korg ID
0100 nnnn	4*	Format ID
1111 0111	F7	EOX

### 2.2 Program Write Request \*\*

1111 0000	F0	Exclusive status
0100 0010	42	Korg ID
0011 nnnn	3*	Format ID
0001 0001	11	Poly Six ID
0001 0001	11	Write Request
0ppp pppp	xx	Prgrm Nmbr (0-119)
1111 0111	F7	EOX

### 2.3 Single Program Save Request

1111 0000	F0	Exclusive status
0100 0010	42	Korg ID
0011 nnnn	3*	Format ID
0001 0001	11	Poly Six ID
0001 0000	10	Pgm Save Request
1111 0111	F7	EOX

### 2.4 All Program Save Request

1111 0000	F0	Exclusive status
0100 0010	42	Korg ID
0011 nnnn	3*	Format ID
0001 0001	11	Poly Six ID
0001 1100	1C	All Save Request
1111 0111	F7	EOX

### 2.5 Single Program Data Load

1111 0000	F0	Exclusive status
0100 0010	42	Korg ID
0011 nnnn	3*	Format ID
0001 0001	11	Poly Six ID
0100 0000	40	Data Dump
0vvv vvww	xx	Program Data:***
0v00 0000	x0	1 Pgm-32 Bytes
:	:	(See Poly-6
0vvv vvww	xx	BIT MAP)
0v00 0000	x0	
1111 0111	F7	EOX

### 2.6 Parameter Change

1111 0000	F0	Exclusive status
0100 0010	42	Korg ID
0011 nnnn	3*	Format ID
0001 0001	11	Poly Six ID
0100 0001	41	Parameter Change
0000 vvww	0x	Param. Offset: 0-15 --
		see Poly-6 Param BIT MAP
0vvv vvww	xx	Param. Value (7-MSBs)
0v00 0000	x0	Param. Value (LSB)
1111 0111	F7	EOX

### 2.7 Global Parameter Change

1111 0000	F0	Exclusive status
0100 0010	42	Korg ID
0011 nnnn	3*	Format ID
0001 0001	11	Poly Six ID
0100 0010	42	Global Param. Change
0000 vvww	0x	Param. Offset: 0-15 --
		see Poly-6 Global bit map
0000 vvww	0x	Parameter Value (0-15)
1111 0111	F7	EOX

### 2.8 All Program Load \*\*

1111 0000	F0	Exclusive status
0100 0010	42	Korg ID
0011 nnnn	3*	Format ID
0001 0001	11	Poly Six ID
0100 1100	4C	All Reload Request
0vvv vvww	xx	Program Data:***
0v00 0000	x0	120 Pgm-3840 Bytes
:	:	(see Poly-6
0vvv vvww	xx	BIT MAP)
0v00 0000	x0	
0vvv vvww	cc	Checksum (mod 128)
1111 0111	F7	EOX

\* = receive channel

\*\* = WRITE ENABLE must be ON

\*\*\* = all program data transmitted in 2 bytes: most significant 7 bits, then least significant bit:

0vvv vvww
0v00 0000)

## POLY-6 PARAMETER BIT MAP

OFFSET	B7	B6	B5	B4	B3	B2	B1	B0
0	Effects Speed							
1	VCF Cut Off							
2	EG Int (see note 1)							
3	Resonance (see note 2)							
4	Attack							
5	Decay							
6	Sustain							
7	Release							
8	Keyboard Track							
9	PW/PWM							
10	PWM Speed							
11	MG Frequency							
12	MG Delay							
13	MG Level							
14	Mod		Sub Osc		Waveform		VCO Octave	
15	Attenuator				Ensem/Phase/Chorus			EG

Notes: 1) EG Intensity: 00H = -5, 80H = 0, FFH = +5  
 2) Resonance: 00H = 10, FFH = 0  
 3) All Others: 00H = 0, FFH = 10

## PARAMETER SWITCH SETTINGS

Mod:	00 = VCA Mod 01 = VCF Mod 10 = VCO Mod 11 = Illegal	Attenuator:	0000 = -10 0001 = -8 0010 = -6 0011 = -4 0100 = -2 0101 = 0 0110 = +2 0111 = +4 1000 = +6 1001 = +8 1010 = +10 1011 = Illegal 1111 = Illegal
Sub Osc:	00 = Sub Octave Off 01 = Sub 2 Octave Down 10 = Sub 1 Octave Down 11 = Illegal		
VCO Waveform:	00 = PW 01 = Sawtooth 10 = PWM 11 = Illegal		
VCO Octave:	00 = 16' 01 = 8' 10 = 4' 11 = Illegal	Ensemble / Phase / Chorus:	000 = Off 001 = Chorus 010 = Phase 011 = Illegal 100 = Ensemble 101 = Illegal 110 = Illegal 111 = Illegal
VCA E.G.:	0 = Gate Envelope 1 = ADSR Envelope		

## POLY-6 GLOBAL PARAMETER BIT MAP

Parameter Offset	Parameter Value			
	B3	B2	B1	B0
0	Key Assign Modes			
	ARPEG On/Off	HOLD On/Off	0 0 = Poly 0 1 = Unison 1 0 = Chord Memory	
1	MIDI Receive Channel			
2	MIDI Transmit Channel			
3	Omni Mode On	Local Control	(not used)	(not used)
4	Receive Filters			
	Prog. Chg.	Sustain	Mod Wheel	Pitch Wheel
5-7	Not Used			
8	Transmit Filters			
	Prog. Chg.	Sustain	Mod Wheel	Pitch Wheel
9	Arpeggiator			
	0 x x x = Internal Sync 8 1 0 0 0 = MIDI - 1/4 notes 9 1 0 0 1 = MIDI - 1/4 triplets A 1 0 1 0 = MIDI - 1/8 notes B 1 0 1 1 = MIDI - 1/8 triplets C 1 1 0 0 = MIDI - 1/16 notes D 1 1 0 1 = MIDI - 1/16 triplets E 1 1 1 0 = MIDI - 1/32 notes F 1 1 1 1 = MIDI - 1/32 triplets			
10-15	Not Used			

## 6 Voice Polyphonic Synthesizer

Model : Polysix MRK

## MIDI Implementation Chart

Date : 12/2/86

Version : 2.4

FUNCTION		TRANSMITTED	RECOGNIZED	REMARKS
Basic	Default	1-16	1-16	memorized
Channel	Changed	1-16	1-16	
Mode	Default	1	1	data ignored
	Messages	x	1,3	
	Altered	*****		
Note		36-96	0-127	
Number	True Voice	*****	24-108	
Velocity	Note ON	x	x	
	Note OFF	x	x	
After	Key's	x	x	
	Ch's	x	x	
Pitch Bender		o : x	o : x	
	1	o : x	o : x	OSC modulation
	64	o : x	o : x	Sustain pedal
Control				
Change				
Program		o 0-119 : x	o 0-127 : x	if # > 119, 120 is subtracted
Change	:True #	*****	0-119	
System Exclusive		o	o	
System	:Song Pos	x	x	
	:Song Sel	x	x	
Common	:Tune	x	x	
System	:Clock	x	o	Start, Stop
	Realtime :Commands	x	o	
Aux	:Local ON/OFF	x	o	
	:Allnotes OFF	o	o	
Mes-	:Active Sense	x	x	
Pages:	Reset	x	x	
Notes		* o : x means function can be enabled or disabled by individual data filters.		

Mode 1 : OMNI ON, POLY

Mode 2 : OMNI ON, MONO

o = YES

Mode 3 : OMNI OFF, POLY

Mode 4 : OMNI OFF, MONO

x = NO