POLY-800 PLUS MDK

Your POLY-800 has been enhanced to provide MIDI memory transfer capability (MDK).

The Memory Transfer function enables external storage and manipulation of the POLY-800's program and sequencer data by a personal computer or the device connected to the MIDI IN and OUT jacks.

There are no controls on the POLY-800 for this purpose. The transfer request is made by the external computer through the POLY-800 MIDI IN jack. When the POLY-800 receives such a request, it "dumps" all data from its memory out the MIDI OUT port. (See MIDI IMPLEMENTATION section at the end of this manual for data formats and other information.)

Data included are:
1. MIDI Receive channel.
2. Sequencer note data.
3. Chord memory.
4. Program data.

When the POLY-800 gets a data transfer request, it takes about on second to send the data. During this period, all normal functions cease, including the display.

You can also download from an external computer to change the POLY-800 memory contents. The external computer issues a memory reload command to the POLY-800, followed by the memory data. During this time (normally approximately 1 second) all normal functions cease, including the display. If received data is erroneous, then the POLY-800 will send a data transfer error message out the MIDI OUT port.

Details concerning this "POLY-800 Plus MDK" enhancement are as listed in the MIDI Implementation below.

I purchased one of the last available MDK ROM sets from Korg for about $50 in 1988. This upgrade gives the Poly-800 the ability to download its patch data via MIDI and not just through the built-in cassette interface. However, since it is a retrofit, one must use MIDI software that can make the request to the Poly-800, since it has no internal feature to say "Now I'm dumping to MIDI". Sorry for the quality of these scans -- my original documentation came in the form of bad photocopies.

POLY-800 PLUS MDK MIDI IMPLEMENTATION

1. TRANSMITTED DATA

STATUS		SECOND		THIRD		DESCRIPTION
1000	000n	0kkk	kkkk	0100	0000	NOTE OFF (FOOTNOTE 2)
1001	000n	0kkk	kkkk	0100	0000	NOTE ON
1011	0000	0000	0001	0vvv	v000	JOY STICK MOD. 1 (DCO) (FOOTNOTE 3)
		0000	0010	0vvv	v000	JOY STICK MOD. 2 (VCF)
1011	000n	0111	1100	0000	0000	OMNI OFF
		0111	1101	0000	0000	OMNI ON MODE MESSAGE
		0111	1111	0000	0000	POLY ON
1100	0000	00pp	pppp			PROGRAM CHANGE, #11— #88 (0—63)
1110	0000	0000	0000	0bbb	bbbb	PITCH BENDER (0-40H—7FH) (FOOTNOTE 4)

FOOTNOTE:

1. "n" will be "0" in case of the data from keyboard, and will be "1" in case of data from the sequencer.
2. Note number 0kkk kkkk=36-84.
3. JOY STICK MOD. Range has 4 bit resolution (0vvv v000).
4. PITCH BENDER has 7 bit resolution (0bbb bbb) only by THIRD BYTE.
5. MODE MESSAGES are transmitted together with sequencer START/STOP commands. When the sequencer is started, OMNI OFF and POLY ON will be transmitted to ch. 1 and ch. 2. When the sequencer is stopped. OMNI ON and POLY ON will be transmitted in the same way.

STATUS		DESCRIPTION
1111	1000	TIMING CLOCK
1111	1010	START (SEQUENCER START)
1111	1100	STOP (SEQUENCER STOP)

NOTE:

TIMING CLOCK messages will be transmitted while the sequencer is working.

2. RECOGNIZED RECEIVE DATA 1

STATUS		SECOND		THIRD		DESCRIPTION
1000	nnnn	0--	----	0xxx	xxxx	NOTE OFF VELOCITY will be ignored.
1001	nnnn	0--	----	0vvv	vvvv	NOTE ON (vvv vvvv > 0) VELOCITY will be ignored.
		0--	----	0000	0000	NOTE OFF
1011	nnnn	0000	0001	0vvv	vxxx	MG 1 (DCO) 4 bit RESOLUTION Bits 0-2 will be ignored.
		0000	0010	0vvv	vxxx	MG 2 (VCF) 4 bit RESOLUTION Bits 0-2 will be ignored.
1011	nnnn	0111	1100	0000	0000	OMNI OFF
		0111	1101	0000	0000	OMNI ON (See FOOTNOTE 3)
1100	nnnn	0ppp	pppp			PROGRAM CHANGE If the specified program number (ppp pppp) is larger than 63, it will be recognized as follows: SPECIFIED PROGRAM − 64=SELECTED PROGRAM EX. 70=6 64=0
1110	nnnn	0xxx	xxxx	0bbb	bbbb	PITCH BENDER Third byte will be recognized, but second will be ignored.

FOOTNOTE:

1. nnnn: 0-15. When the mode is OMNI ON, note data from all channels will be received. When the mode is OMNI OFF, only data of the channel designated by Parameter #86 will be received. As to Mode Message, however, designated channel data only will be received even if the mode is OMNI ON.

2. Note Number (0kkk kkkk) is 36-84. If the data except above range were received, the data will be transposed to the same note on the nearest octave.

3. OMNI ON/OFF will be always recognized as the message with POLY ON. Single POLY ON or MONO ON message will be ignored.

3. RECOGNIZED RECEIVE DATA 2

STATUS	DESCRIPTION
1111 1000	TIMING CLOCK
1111 1010	SEQUENCER START
1111 1100	SEQUENCER STOP

FOOTNOTE

- TIMING CLOCK will be received only while the sequencer is working. (i.e., SEQ CLK (Parameter #88) is set to EXTERNAL (value-2)).

4. PANEL CONTROL

PARAMETER

#86 RCV CH:	This value will be kept though the power is turned off. This Parameter is valid when the mode is OMNI OFF against messages except for MODE MESSAGE.
#87 PROG CHANGE:	0=DISABLE 1=ENABLE This Parameter is valid only for receiving. Default value is "DISABLE".
#88 SEQ CLK:	1=Sequencer will be controlled by INTERNAL clock. 2=Sequencer will be controlled by EXTERNAL clock from MIDI IN. Default value is "INTERNAL".

5. SYSTEM EXCLUSIVE MESSAGES
(Transmission Data)

	STATUS	DATA	DESCRIPTION
RAM DATA	1111 0000	0100 0010	KORG ID
		0010 0001	FORMAT ID
		0000 0110	POLY-800 PLUS MDK ID
		0000 ÷÷÷÷	LSB 4 bit ⎱ RAM DATA
		0000 ÷÷÷÷	MSB 4 bit ⎰ 1-word
		⋮	
		0000 ssss	LSB 4 bit ⎱ CHECK SUM
		0000 ssss	MSB 4 bit ⎰ DATA
		1111 0111	EOX (END OF EXCLUSIVE)
DATA ERROR MESSAGE	1111 0000	0100 0010	KORG ID
		0010 0001	FORMAT ID
		0000 0110	POLY-800 PLUS MDK ID
		0010 0000	DATA ERROR MESSAGE
		1111 0111	EOX

NOTE:

1. Data error message is sent if there is a check sum error during memory load. Error message: (F0н, 42н, 21н, 06н, 20н, F7н)
2. The request sent by the computer must be: F0н, 42н, 21н, 06н, 10н, F7н (where "н" means hexadecimal). Memory data is then output in the order: F0н, 42н, 21н, 06н, memory data, check sum, F7н.

6. SYSTEM EXCLUSIVE MESSAGES
(Reception data)

	STATUS	DATA	DESCRIPTION
DUMP DATA	1 1 1 1 0 0 0 0	0 1 0 0 0 0 1 0	KORG ID
		0 0 1 0 0 0 0 1	FORMAT ID
		0 0 0 0 0 1 1 0	POLY-800 PLUS MDK ID
		0 0 0 0 * * * *	LSB 4 bit } RAM DATA
		0 0 0 0 * * * *	MSB 4 bit } 1-word
		0 0 0 0 s s s s	LSB 4 bit } CHECK SUM
		0 0 0 0 s s s s	MSB 4 bit } DATA
		1 1 1 1 0 1 1 1	EOX
DATA DUMP REQUEST	1 1 1 1 0 0 0 0	0 1 0 0 0 0 1 0	KORG ID
		0 0 1 0 0 0 0 1	FORMAT ID
		0 0 0 0 0 1 1 0	POLY-800 PLUS MDK ID
		0 0 0 1 0 0 0 0	DATA REQUEST
		1 1 1 1 0 1 1 1	EOX

NOTE:

1. POLY-800 begins RAM data dump about 300msec after it receives the final F7$_H$ in the RAM data request above.

2. Least significant 8 bits of "$\sum$" (One word of RAM data)n are used for check sum.

3. Send data to POLY-800 MIDI IN in the order: F0$_H$, 42$_H$, 21$_H$, 06$_H$, memory data, check sum, F7$_H$, Internal.

7. RAM DATA CHART

DATA	RELATIVE ADDRESS	BYTES
MIDI CH DATA	0 0 0 0	1
SEQUENCER DATA	0 0 0 1	256
UNDEFINED	0 1 0 1	1
CHORD MEMORY	0 1 0 2	8
UNDEFINED	0 1 0 A	22
PROGRAM DATA	0 1 2 0	1345

NOTE:

1. SEQ DATA is as shown below.

SYM-BOL	DATA	NOTE
𝄽	0 0$_H$	Fine
𝄾	0 1$_H$	Rest
—	0 2$_H$	Tie
♪	1 k_1 k_1 k_1 k_1 k_1 k_1 k_1	MSB=0: Notes remain for that timing.
♪♪	0 k_1 k_1 k_1 k_1 k_1 k_1 k_1 0 k_2 k_2 k_2 k_2 k_2 k_2 k_2 1 k_3 k_3 k_3 k_3 k_3 k_3 k_3	MSB=1: Block end for that timing.

EXAMPLE:

DATA: B4$_H$, 02$_H$, B5$_H$, 02$_H$, 01$_H$, 01$_H$, B7$_H$, B9$_H$, 34$_H$, 37$_H$,
　　　BC$_H$, 02$_H$, 02$_H$, 02$_H$, 02$_H$, 02$_H$, 01$_H$, 01$_H$, 00$_H$

2. CHORD MEMORY
　0 $k_n k_n k_n k_n k_n k_n k_n$: KEY DATA
　0 0 0 0 0 0 0 0: END

3. Important: POLY-800 does not use undefined data except for check sum.

Program Parameter per ONE note

Byte \ bit	7	6	5	4	3	2	1	0
1	DCO 2 WAVEFORM		DCO 1 WAVEFORM		DCO 2 OCTAVE		DCO 1 OCTAVE	
2	DCO 2 FEET ON/OFF				DCO 1 FEET ON OFF			
3	CHORUS ON/OFF	DCO 2 ON/OFF	UNDEFINED				DCO 2 DETUNE	
4	NOISE LEVEL				DCO 2 INTERVAL			
5	※ DCO 1 LEVEL			VCF EG POLARITY	VCF EG INT			
6	UNDEFINED	DCO 2 LEVEL						※
7	VCF TRIGMODE	VCF CUTOFF						
8	MG DELAY				MG FREQ			
9	MG VCF INT				MG DCO INT			
10	※ DEG 1 DECAY				DEG 1 ATTACK			
11	※	DEG 1 BREAK.P						※
12	※ DEG 1 SUSTAIN				DEG 1 SLOPE			※
13	※	DEG 1 RELEASE						※
14	DEG 2 DECAY				DEG 2 ATTACK			※
15	※ DEG 2 SLOPE				DEG 2 BREAK.P			
16	※	DEG 2 SUSTAIN						※
17	※ DEG 3 ATTACK				DEG 2 RELEASE			※
18	※	DEG 3 DECAY						※
19	DEG 3 SLOPE				DEG 3 BREAK.P			※
20	※ DEG 3 RELEASE				DEG 3 SUSTAIN			
21	VCF KBD TRACK		VCF RESONANCE					※

PRAMETER WITH ※ EXCEEDS BYTE UNIT.
NO SPACE BETWEEN NOTES