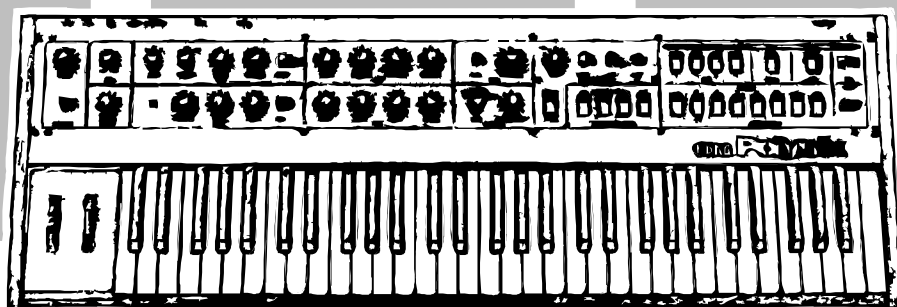


P6-M

MIDI Interface for Korg Polysix Synthesizer

Model 8-427
Version 1.0



Owner's Manual



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1 FEATURES

P6-M is a MIDI retrofit for Korg Polysix synthesizer. The most significant benefit of the interface is the control of the instrument's VCF. Modulation of VCF by Velocity and Chnl Aftertouch MIDI commands will allow you to achieve a much richer range of sound colours. Also additional LFO (with many user adjustable parameters) is embedded for extended VCF modulation.

The P6-M interface controls:

- Instrument's keyboard (remote pressing of keys)
- Selection of Bank / Program (remote control of the PROGRAMMER section buttons)
- Selection of key assignment (remote control of the KEY ASSIGN MODE section buttons)
- Instrument's VCF modulation by MIDI Note Velocity and Channel Aftertouch
- Instrument's VCF modulation by additional LFO (synchronization by MIDI Clock is possible)
- Instrument's arpeggiator switching on / off (remote control of the ARPEGGIO button)
- Instrument's arpeggiator clock source and speed (synchronization by MIDI Clock is possible)

The interface has internal memory for saving of interface's own settings. Content of the memory can be backed up in any MIDI DAW, sequencer, etc.

The interface only receives MIDI data and converts them to signals for the Polysix control. The instrument's own control elements (keyboard, switches, knobs, etc.) are not transmitted as a MIDI data and their status cannot be saved in the interface's memory as a program.

Almost all functions of the interface are simply controlled by standard MIDI Control Changes (CCs) and Program Change MIDI commands. Some special functions controlled by SysEx messages are available for advanced users.

2 CONNECTION TO MIDI SYSTEM

The interface has connectors for both MIDI data input and output. Standard MIDI cables¹ are used to connect other MIDI devices.

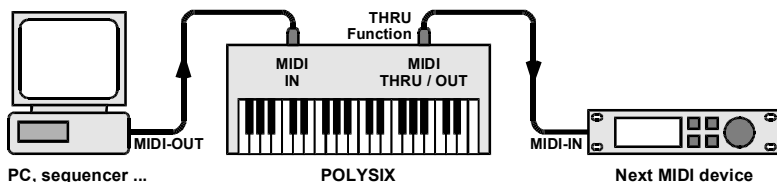
2.1 STANDARD WORKING MODE SET-UP

Data from the host MIDI system (PC, DAW, sequencer, master keyboard, etc.) are coming to MIDI-IN input of the interface.

All MIDI data² coming to the MIDI input are transferred unaffected to MIDI-THRU/OUT output of the interface (THRU function). The THRU function enables another MIDI device(s) to be connected without additional MIDI Thru-Box. MIDI input of the other (next in chain) MIDI device can be simply fed from MIDI-THRU/OUT output of the interface (see fig. 1).

If there are no other MIDI devices to be used, only MIDI-IN cable is necessary (from MIDI host system to MIDI-IN input of the interface).

Fig. 1 – Connection to MIDI system for standard working mode



¹ The cables equipped with DIN 41524 connectors (5 pins / 180°).

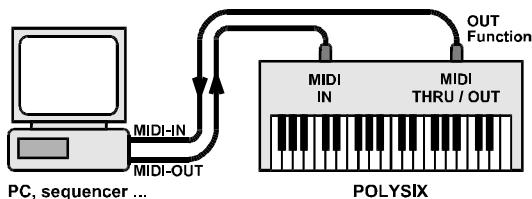
² All MIDI data except own specific System Exclusive messages for the P6-M interface. These System Exclusive messages are filtered.

2.2 INTERFACE MEMORY BACK-UP SET-UP

Fig. 2 – Connection to MIDI system for memory content transfer

The interface can transmit its own MIDI System Exclusive data. These messages are used for back-up / recovery of the internal memory settings.

To back-up the memory of the interface, connect interface's THRU/OUT MIDI output to MIDI input of the host system (PC, DAW, sequencer...)³ (see fig. 2).



3 INTERFACE OPERATION

The interface has a single manual control element – Reset button – which turns the interface to reset status. All other functions of the interface are set / controlled by MIDI commands only.

Working status of the interface is indicated by bi-color LED. The indication LED is off in reset status of the interface when the interface doesn't affect the instrument. The interface indication LED lights red in MIDI mode when the interface takes control over an instrument circuit. If the LED indication function of the interface is enabled (for details see chapter 4.2.16), selected function is indicated by green light or blinking of the indication LED. If an error occurs, the indication LED starts to blink yellow (for details see chapter 6.1).

3.1 RESET STATUS

When the Polysix is switched on or when the interface's Reset button is pressed, the interface is disabled (it does not affect the instrument) and the instrument can be used usual way like no MIDI interface has been installed. The interface is now monitoring the incoming MIDI data.

3.2 MIDI MODE

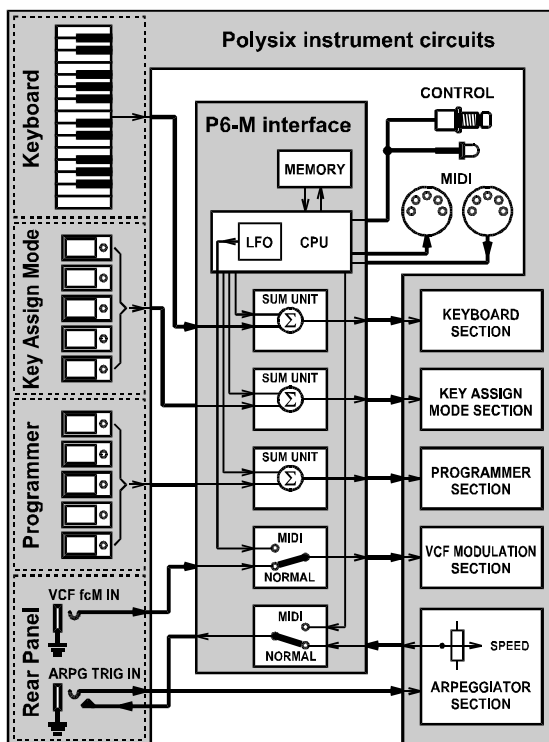
When an acceptable MIDI command (see chapter 5) is received, the interface turns to MIDI mode automatically and takes control over some instrument's circuits (see figs. 3 and 4) accordingly to the incoming MIDI datatype.

Fig. 3 – MIDI mode controlled elements



³ **Attention!** Disable the MIDI ECHO, THRU functions of your sequencer in this case to prevent communication loops that might "freeze" your MIDI system (see chapter 6.2)!

Fig. 4 – MIDI mode block diagram



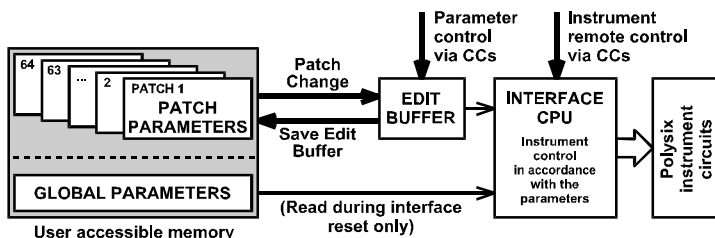
Remote control of instrument's keyboard, selected buttons on the instrument panel and VCF modulation is allowed in the MIDI mode:

- Instrument's keyboard (① on fig. 3 and 4) is controlled by MIDI Notes in parallel manner – both instrument's own keyboard and MIDI Notes can be used simultaneously (see chapter 5.1.1).
- KEY ASSIGN MODE buttons (② on fig. 3 and 4) are controlled by MIDI CCs (Control Changes) in parallel manner – both instrument's buttons and MIDI CCs can be used simultaneously (see chapter 5.1.2.2).
- PROGRAMMER buttons (③ on fig. 3 and 4) are controlled by MIDI Program Change command in parallel manner – both instrument's buttons and MIDI Program Change can be used simultaneously (see chapter 5.1.5).
- VCF fcm IN input (VCF cutoff frequency - ④ on fig. 3 and 4) is controlled by interface parameter. VCF fcm IN input for external pedal is disabled when the interface controls the VCF modulation (see chapter 5.1.2.2).
- Instrument's VCF can be also modulated by additional software LFO (⑦ on fig. 4) controlled by the interface parameters.
- ARPEGGIATOR speed (⑤ on fig. 3 and 4) and source of the arpeggio synchronization are controlled by interface parameters. SPEED knob on instrument panel is disabled when the interface controls the arpeggiator (see chapter 5.1.2.3). External arpeggiator triggering is still allowed – the ARPEGGIO TRIG IN input (⑥ on fig. 3 and 4) has the highest priority.

4 INTERFACE PARAMETERS

Fig. 5 – Interface's parameter memory structure

The parameters are divided in two basic groups – interface global parameters and interface patch parameters (see fig. 5). All interface parameters are stored in user accessible internal memory⁴ of the interface. There is one memory for the global parameters and 64 memories for the interface patch parameters available.



4.1 INTERFACE GLOBAL PARAMETERS

Interface global parameters control the basic functions and hardware of the interface. The global parameters are always valid independently on the actually selected patch of the interface. They are automatically loaded from the memory during reset sequence of the interface.

Values of the global parameters can be changed by MIDI SysEx Messages only (please see the [MIDI SysEx Communication](#) manual for details). Factory pre-defined values of the global parameters are listed in the table below.

Table 1 – Range of valid values and factory preset values of global parameters				
Parameter name	Valid range	Factory reset		Chapter
		Value	Meaning	
MIDI Channel	0 ~ 15	0	MIDI Channel Nr. 1 is selected	4.1.1
Auto Reset	0 ~ 1	1	Auto Reset is On	4.1.2
MIDI Clock Indicator	0 ~ 1	0	Indication of incoming MIDI Clock is off	4.1.3
SysEx Device ID	0 ~ 17	17	Universal Device ID (i.e. 7Fh) is selected	4.1.4

4.1.1 MIDI CHANNEL

The parameter selects the receiving MIDI channel of the interface for standard MIDI Channel commands (see chapter 5.1). It is possible to choose any of the 16 MIDI channels.

Valid parameter values are 0 ~ 15: Value 0 represents MIDI channel Nr.1, value 1 selects MIDI channel Nr. 2 etc. up to value 15 which selects MIDI channel Nr. 16.

4.1.2 AUTO RESET

The parameter enables automatic reset of the interface if a problem in MIDI communication occurs. If the parameter is set to “On” and a fatal error in the MIDI communication occurs, the interface stops operating and returns to basic reset status automatically. If the parameter is set to “Off”, standard error procedures will be executed (see chapter 6.1).

Valid parameter values are 0 ~ 1: Value 0 is “Off” (autoreset disabled), value 1 is “On” (autoreset enabled).

⁴ After an user data (parameter values) are stored in the memory, the content of whole user accessible memory can be protected against unwanted rewriting of the data (see chapter 6.3).

4.1.3 MIDI CLOCK INDICATOR

The parameter enables / disables indication of incoming MIDI Clock commands for "MIDI Event" mode of the green LED indicator (see chapter 4.2.16).

Valid parameter values are 0 ~ 1: Value 0 is „Off“ (indication disabled), value 1 is „On“ (indication enabled).

4.1.4 SYSEX DEVICE ID

The parameter selects "Device ID" byte for transmitted MIDI System Exclusive messages (see the MIDI SysEx Communication manual).

Valid parameter values are 0 ~ 17: Values 0 to 15 are fixed numbers that will be always used as the Device ID independently on selected MIDI channel. Value 16 means that the Device ID will be the same as number of just used receiving MIDI Channel chosen by MIDI CHANNEL global parameter (see chapter 4.1.1). For value 17, universal 7Fh Device ID⁵ will be always used.

4.2 INTERFACE PATCH PARAMETERS

The interface patch parameters define how the received MIDI commands affect sound of the Polysix instrument. Next chapters and fig. 6 describe how the interface patch parameters affect Polysix's circuits.

Table 2 – Interface patch parameters

Parameter name	Valid values	Function	CC Nr.	Chapter
MIDI Notes Shift (Transpose) ¹⁾	0 ~ 67	Transposes MIDI Notes over the keyboard range	16	4.2.1
Pitch Bend Range ¹⁾	0 ~ 24	Adjusts MIDI Pitch Bend maximal range	17	4.2.2
VCF Cutoff Modulation	0 ~ 127	Direct VCF cutoff frequency increasing / decreasing	18	4.2.3
VCF Velocity Mode ¹⁾	0 ~ 3	Selects type of VCF modulation by MIDI Notes velocity	19	4.2.4
VCF Velocity Amount ⁶	0 ~ 127	Range of VCF modulation by MIDI Notes velocity	20	4.2.5
VCF Chnl Aftertouch Amount ¹⁾	0 ~ 127	Range of VCF modulation by MIDI Channel Aftertouch	21	4.2.6
VCF LFO Waveform	0 ~ 63	Additional LFO control	22	4.2.7
VCF LFO Sync	0 ~ 3	Additional LFO control	23	4.2.8
VCF LFO Rate	0 ~ 127	Additional LFO control	24	4.2.9
VCF LFO Delay ¹⁾	0 ~ 127	Additional LFO control	25	4.2.10
VCF LFO Amount	0 ~ 127	Additional LFO control	26	4.2.11
VCF LFO Modulation Wheel ²⁾	0 ~ 127	Additional LFO control	27	4.2.12
VCF LFO Chnl Aftertouch ¹⁾	0 ~ 127	Additional LFO control	28	4.2.13
ARPG Clock Sync	0 ~ 3	Selects mode of arpeggiator synchronization	29	4.2.14
ARPG Clock Rate	0 ~ 127	Adjusts arpeggiator speed	30	4.2.15
Indicator Mode	0 ~ 3	Selects mode of interface's indicator	31	4.2.16

¹⁾ Works with MIDI Notes only, not with instrument's own keyboard

²⁾ Works with MIDI Modulation (CC #1) only, not with instrument's own MG wheel controller

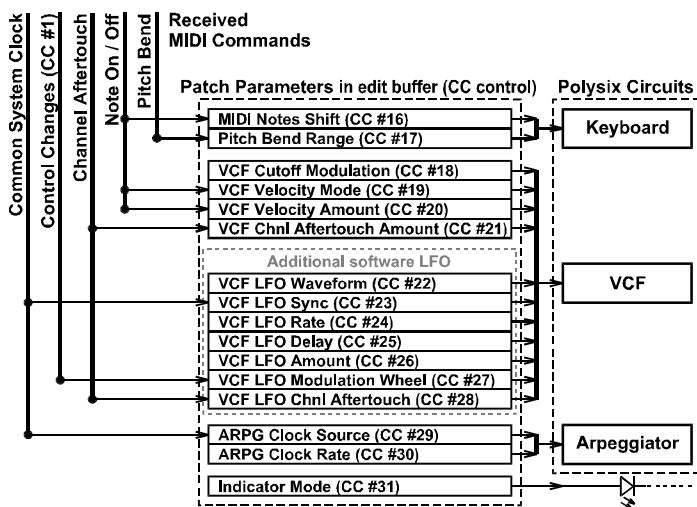
The patch parameters are loaded from the interface memory to the edit buffer (see fig. 5) and they controls the interface's functions from here⁶. Values of all interface patch parameters in edit buffer can be modified by MIDI CCs (see chapter 5.1.2.3) - it is possible to change them in a real time during playing the instrument (see fig. 5). These changes are temporary only. If necessary, new setting of the parameters can be stored in an user patch

⁵ SysEx message with the universal Device ID (7Fh) is always recognized by the interface independently on selected receiving MIDI channel.

⁶ During the interface reset, neutral values of the parameters are loaded into the edit buffer so that the interface doesn't affect the instrument.

memory - up to 64 interface patch parameters settings⁷ can be stored (see description of CC #119 in chapter 5.1.2.3). These settings are recalled from the memory by Program Change MIDI command (see chapter 5.1.5).

Fig. 6 – Function of the interface patch parameters



4.2.1 MIDI NOTES SHIFT (CC #16)

This parameter is active only for MIDI Notes. It doesn't work with instrument's keyboard!

The parameter adjusts assignment of received MIDI Note numbers to the instrument keys. The parameter value specifies exactly the number of MIDI Note which is assigned to the lowest key of the instrument's keyboard. It can be changed by MIDI CC Nr. 16 - see chapter 5.1.2.3.

The parameter value can be from 0 to 67. If value 0 is set, the lowest key on the keyboard corresponds to MIDI Note Nr. 0 and the highest key corresponds to MIDI Note Nr. 60. If value 1 of the parameter is set, the lowest key on the keyboard corresponds to MIDI Note Nr. 1 and the highest key corresponds to MIDI Note Nr. 61. Etc. up to value 67 of the parameter when the lowest key of the keyboard corresponds to MIDI Note Nr. 67 and the highest key corresponds to MIDI Note Nr. 127. See fig. 7 on next page for more details.

4.2.2 PITCH BEND RANGE (CC #17)

This parameter is active only for MIDI Notes and Pitch Bend MIDI command. It doesn't work with instrument's keyboard and BENDER wheel controller!

The parameter adjusts maximal allowed VCOs pitch bending⁸ for full range of MIDI Pitch Bend. It can be changed by MIDI CC Nr. 17 - see chapter 5.1.2.2.

The parameter value is from 0 to 24. The 0 value switches the pitch bend off – the Pitch Bend MIDI command is ignored. The values of 1 to 24 are equal to bending the pitch in semitones. Bending up to ± 2 octave is available thus.

⁷ The individual patches stored in interface memory can be named - see chapter 5.3.2.

⁸ Since the interface does not have direct access to the control voltage of the tone generators, the tone is not detuned continuously but in semitone steps. Together with the tuning changes, the envelope generators are re-triggered.

Fig. 7 – MIDI Notes Shift parameter

4.2.3 VCF CUTOFF MODULATION (CC #18)

The parameter affects basic VCF cutoff frequency set by VCF CUTOFF knob on instrument's panel. It can be changed by MIDI CC Nr. 18 - see chapter 5.1.2.2.

The parameter value is 0 to 127. For 64 value, the VCF cutoff frequency isn't affected. For parameter values from 65 to 127, the VCF cutoff frequency is increased and it is decreased for parameter values from 63 to 0.

Remark: If you want to use full control range of this CC, it is recommended to set the VCF CUTOFF knob on instrument panel to the middle position. Note that VCF fcm IN socket on the Polysix's rear panel is disabled when the parameter is set to any other value than 64. A pedal plugged to this connector is disabled in this case!

4.2.4 VCF VELOCITY MODE (CC #19)

This parameter is active only for MIDI Notes. It doesn't work with instrument's keyboard!

The parameter selects type of the VCF cutoff frequency modulation by received MIDI Notes Velocity. It can be temporarily changed by MIDI CC Nr. 19 - see chapter 5.1.2.2.

The parameter value is 0 to 3. Four modes are available thus (see also fig. 8 on next page):

- **0 → Average - Positive:** The VCF cutoff frequency is modulated directly proportionally to average velocity value of all active MIDI Notes.
- **1 → Average - Negative:** The VCF cutoff frequency is modulated inversely proportionally to average velocity value of all active MIDI Notes.
- **2 → Last Note - Positive:** The VCF cutoff frequency is modulated directly proportionally to velocity value of last received MIDI Note.
- **3 → Last Note - Negative:** The VCF cutoff frequency is modulated inversely proportionally to velocity value of last received MIDI Note.

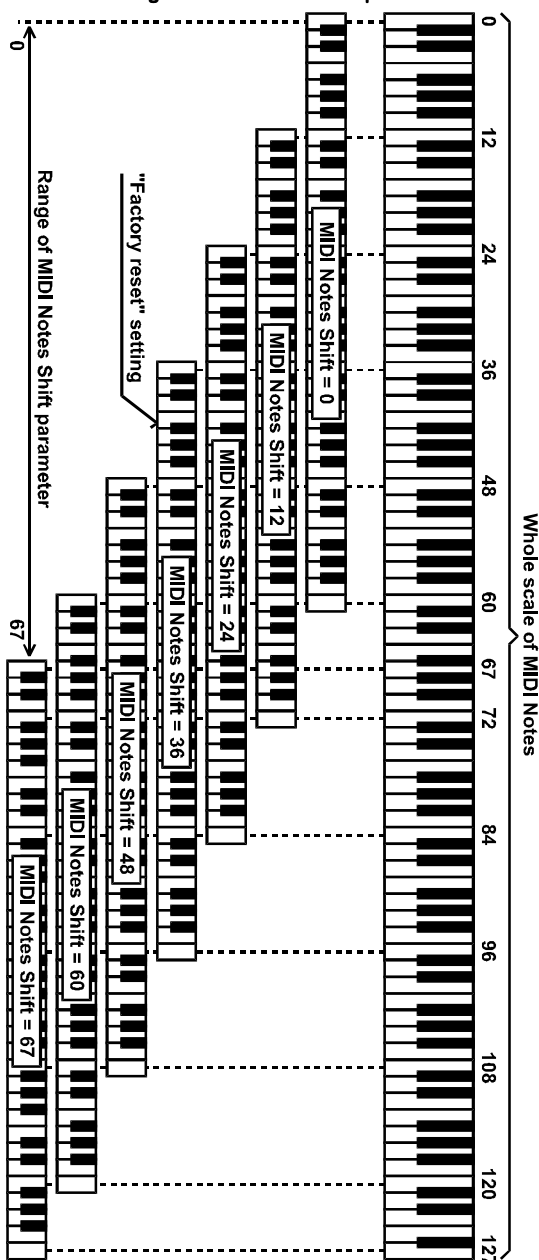
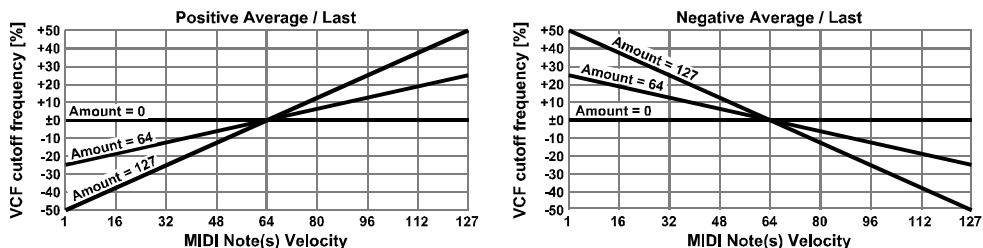


Fig. 8 – VCF modulation by Velocity



4.2.5 VCF VELOCITY AMOUNT (CC #20)

This parameter is active only for MIDI Notes. It doesn't work with instrument's keyboard!

The parameter sets the modulation amount of the VCF cutoff frequency by MIDI Notes velocity. It can be temporarily changed by MIDI CC Nr. 20 - see chapter 5.1.2.2.

The parameter value is 0 to 127. For 0 value, VCF isn't affected by the velocity data, value equal to 127 provides maximal modulation level (see fig. 8).

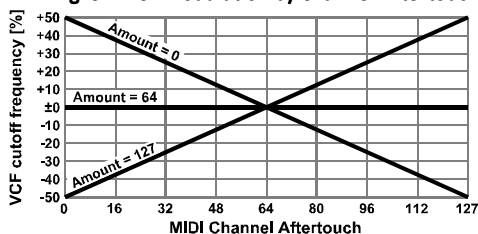
4.2.6 VCF CHNL AFTERTOUCH AMOUNT (CC #21)

This parameter is active only for Channel Aftertouch MIDI command. It doesn't work with instrument's keyboard!

The parameter sets the modulation amount of the VCF cutoff frequency by MIDI MIDI Channel Aftertouch. It can be temporarily changed by MIDI CC Nr. 21 - see chapter 5.1.2.2.

The parameter value is 0 to 127. For 64 value, VCF isn't affected by the Channel Aftertouch. For parameter values from 65 to 127, the VCF cutoff frequency is modulated directly proportionally to value of MIDI Channel Aftertouch. For parameter values from 63 to 0, the VCF cutoff frequency is modulated inversely proportionally to value of MIDI Channel Aftertouch (see fig. 9).

Fig. 9 – VCF modulation by Channel Aftertouch



4.2.7 VCF LFO WAVEFORM (CC #22)

The parameter selects waveform of the additional software LFO generator for the instrument VCF modulation. It can be temporarily changed by MIDI CC Nr. 22 - see chapter 5.1.2.2.

The parameter value is 0 to 63. Table 3 shows waveforms corresponding to the parameter values.

Table 3 – Additional LFO waveforms					
Param. value	LFO waveform		Param. value	LFO waveform	
0	Saw - Fall		5	Triangle 62,5%	
1	Triangle 12,5%		6	Triangle 75%	
2	Triangle 25%		7	Triangle 87,5%	
3	Triangle 37,5%		8	Saw - Rise	
4	Triangle 50%		9	Square 12,5%	



Table 3 – Additional LFO waveforms – continue

Param. value	LFO waveform	Param. value	LFO waveform
10	Square 25%	37	Sine
11	Square 37,5%	38	Sine 2nd Harmonics
12	Square 50%	39	Sine 3rd Harmonics
13	Square 62,5%	40	3 Stairs Up
14	Square 75%	41	3 Stairs Down
15	Square 87,5%	42	4 Stairs Up
16	Trapezoid 25%	43	4 Stairs Down
17	Trapezoid 37,5%	44	5 Stairs Up
18	Trapezoid 50%	45	5 Stairs Down
19	Trapezoid 62,5%	46	Exp
20	Trapezoid 75%	47	Exp Inverted
21	Pulse 12,5%	48	Log
22	Pulse 25%	49	Log Inverted
23	Pulse 37,5%	50	Noise 1
24	Pulse 50%	51	Noise 2
25	Pulse 62,5%	52	Noise 3
26	Pulse 75%	53	Noise 4
27	Peak 25%	54	Noise 5
28	Peak 37,5%	55	Groove 1
29	Peak 50%	56	Groove 2
30	Peak 62,5%	57	Groove 3
31	Peak 75%	58	Groove 4
32	Sink 25%	59	Groove 5
33	Sink 37,5%	60	Groove 6
34	Sink 50%	61	Groove 7
35	Sink 62,5%	62	Groove 8
36	Sink 75%	63	Random

The Groove waveforms (parameter values 55 to 62) simulate a rhythmic sequences for the VCF modulation. They are primarily designed for synchronization with MIDI Clock (chapter 4.2.8) and for lower speeds of the LFO (chapter 4.2.9). The Random waveform (parameter value 63) works standard way – it periodically sets random level of the VCF cutoff frequency.

4.2.8 VCF LFO SYNC (CC #23)

The parameter selects synchronization mode for the additional software LFO. It can be temporarily changed by MIDI CC Nr. 23 - see chapter 5.1.2.2.

The parameter value is 0 to 3. Four synchronization modes are available (see fig. 10):

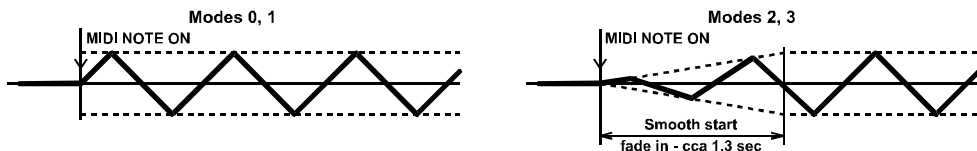
- **0 → Fixed:** The additional software LFO rate is controlled by interface clock generator. The fixed tempo is set by VCF LFO RATE parameter directly (see chapter 4.2.9 and table 10 in chapter 6.5).
- **1 → MIDI:** The rate of the additional software LFO is derived from the external MIDI Clock⁹. Frequency of incoming MIDI Clock is divided - dividing ratio is selected by VCF LFO RATE parameter (see chapter 4.2.9 and table 10 in chapter 6.5).

⁹ Transmitting of MIDI Clock must be enabled in your DAW / sequencer! Maximal allowed tempo (BPM) is limited – see table 10.

- **2 → Fixed - Smooth Start:** The same as the "Fixed" mode but VCF modulation fades in for approx. 1,3 second.
- **3 → MIDI - Smooth Start:** The same as the "MIDI" mode but VCF modulation fades in for approx. 1,3 second.

Remark: Both Smooth Start modes (2 and 3) are allowed only for MIDI Notes. They don't work with instrument's own keyboard!

Fig. 10 – VCF LFO synchronization modes



4.2.9 VCF LFO RATE (CC #24)

The parameter sets the rate of the additional software LFO. It can be temporarily changed by MIDI CC Nr. 24 - see chapter 5.1.2.2.

The parameter value is 0 to 127. Table 10 in chapter 6.5 shows conversion of the parameter value to the rate for both "Fixed" and "MIDI" synchronization modes chosen by VCF LFO SYNC parameter.

4.2.10 VCF LFO DELAY (CC #25)

This parameter is active only for MIDI Notes. It doesn't work with instrument's keyboard!

The parameter sets the delay before launching the additional LFO after a key is pressed. It can be temporarily changed by MIDI CC Nr. 25 - see chapter 5.1.2.2.

The parameter value is 0 to 127. Table 11 in chapter 6.5 shows conversion of the parameter value to the delay time for both "Fixed" and "MIDI" synchronization modes chosen by VCF LFO SYNC parameter.

4.2.11 VCF LFO AMOUNT (CC #26)

The parameter sets basic VCF modulation depth by the additional software LFO. It can be temporarily changed by MIDI CC Nr. 26 - see chapter 5.1.2.2.

The parameter value is 0 to 127. For 0 value, the VCF is not affected by the additional LFO. For 127 value, the VCF modulation depth is maximal.

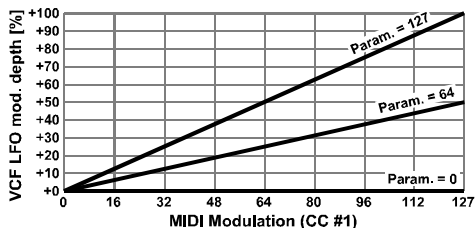
4.2.12 VCF LFO MODULATION WHEEL (CC #27)

This parameter is active only for CC #1 - Modulation MIDI command. It doesn't work with instrument's MG wheel controller!

The basic VCF modulation depth set by the VCF LFO AMOUNT parameter (see above) can be increased by CC #1 (Modulation) MIDI command. The parameter adjusts maximal possible increasing of the modulation. The parameter can be temporarily changed by MIDI CC Nr. 27 - see chapter 5.1.2.2.

The parameter value is 0 to 127. For value 0, the basic modulation depth isn't affected by the CC #1. For values from 1 to 127, the basic modulation depth is increased by the the CC #1. Maximal modulation depth (i.e. when CC #1 with value 127 is received) is then directly proportional to the parameter value (see fig. 11).

Fig. 11 – VCF LFO mod. depth by CC #1



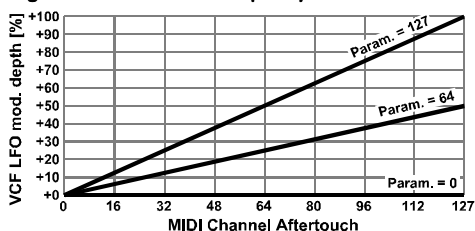
4.2.13 VCF LFO CHNL AFTERTOUCH (CC #28)

This parameter is active only for Channel Aftertouch MIDI command. It doesn't work with instrument's keyboard!

The basic VCF modulation depth set by the VCF LFO AMOUNT parameter (see above) can be increased by Cannel Aftertouch MIDI command. The parameter then adjusts maximal possible increasing of the modulation. The parameter can be temporarily changed by MIDI CC Nr. 28 - see chapter 5.1.2.2.

The parameter value is 0 to 127. For value 0, the basic modulation depth isn't affected by the MIDI Channel Aftertouch. For values from 1 to 127, the basic modulation depth is increased by the the MIDI Channel Aftertouch. Maximal modulation depth (i.e. when MIDI Channel Aftertouch with value 127 is received) is then directly proportional to the parameter value (see fig. 12).

Fig. 12 – VCF LFO mod. depth by Channel Aftertouch



4.2.14 ARPG CLOCK SYNC (CC #29)

The parameter selects the source of synchronization clock pulses for instrument's arpeggiator. It can be temporarily changed by MIDI CC Nr. 29 - see chapter 5.1.2.2.

The parameter value is 0 to 3. Four sources are available:

- **0 → Normal:** The arpeggiator rate is controlled by Polysix internal rate generator (ARPEGGIATOR SPEED knob). ARPG Clock Rate parameter (see chapter 4.2.15) and CC #29 are ignored in this mode.
- **1 → Fixed:** The arpeggiator rate is controlled by interface clock generator. The fixed tempo is set by ARPG CLOCK RATE parameter directly (see chapter 4.2.15 and table 12 in chapter 6.5).
- **2 → MIDI:** The rate of the synchronization clock pulses for the arpeggiator is derived from the external MIDI Clock¹⁰. Frequency of incoming MIDI Clock is divided - dividing ratio is selected by ARPG CLOCK RATE parameter (see chapter 4.2.15 and and table 12 in chapter 6.5).
- **3 → CC:** The arpeggiator rate is controlled directly by CC #30. Every time the CC #52 is received (any value), one clock pulse for arpeggiator is generated. This mode allows to create atypical and interesting arpeggio sequences.

Remark: ARPEGGIO TRIG IN connector on the Polysix's rear panel remains functional in all modes. It is still possible to use external clock signal if necessary. The incoming external clock signal has the highest priority.

4.2.15 ARPG CLOCK RATE (CC #30)

The parameter selects the rate of synchronization clock pulses for arpeggiator if "Fixed" or "MIDI" mode is active (see ARPG CLOCK SYNC parameter above). It can be temporarily changed by MIDI CC Nr. 30 - see chapter 5.1.2.2. The parameter value is 0 to 127. Table 12 in chapter 6.5 shows conversion of the parameter value to the rate for both "Fixed" and "MIDI" synchronization modes.

For "CC" mode of the arpeggiator clock (see ARPG CLOCK SYNC parameter above), one clock pulse is generated every time the CC #30 is received (any value).

For "Normal" mode of the arpeggiator clock (see ARPG CLOCK SYNC parameter above), the parameter is ignored.

¹⁰ Transmitting of MIDI Clock must be enabled in your DAW / sequencer!

4.2.16 INDICATOR MODE (CC #31)

The parameter selects function of green LED indicator of the interface. It can be temporarily changed by MIDI CC Nr. 31 - see chapter 5.1.2.2.

The parameter value is 0 to 3. Four modes of indication are available thus:

- **0 → Off:** The green indicator is off – the LED doesn't light or blink.
- **1 → LFO Clk:** The LED indicates rate of additional software LFO by short blinking.
- **2 → ARPG Clk:** The LED indicates rate of arpeggio clock pulses (generated by the interface) by short blinking¹¹.
- **3 → MIDI Event:** The LED indicates acceptable incoming MIDI events (commands) by short blinking. Transferred MIDI data (THRU function) are not indicated.

5 MIDI IMPLEMENTATION

P6-M interface uses all available MIDI communication methods – Channel Commands, Common System Commands as well as System Exclusive messages¹² for experts.

5.1 CHANNEL COMMANDS

The interface recognizes Note-Off, Note-On, Control Changes (CCs), Channel Aftertouch, Pitch Bend and Program Change MIDI channel commands¹³. All MIDI channel commands are received on the MIDI channel defined by the MIDI CHANNEL global parameter (see chapter 4.1.1).

5.1.1 NOTE ON/OFF

The interface accepts Note-On and Note-Off commands in the range of max. 61 notes (5 octaves). If more than 6 MIDI Notes are active, the last received Notes have higher priority. Accepted range of the MIDI note numbers are defined by the MIDI NOTES SHIFT interface patch parameter (see chapter 4.2.1).

The Note-On / Note-Off commands control the instrument's keyboard in parallel manner – both MIDI Notes and instrument's own keyboard can be used simultaneously.

5.1.2 MIDI CONTROL CHANGES (CCs)

The interface recognizes standardized MIDI CCs (Nr. 1, 64 and 120 ~ 123) and some individually defined CCs (Nr. 16 ~ 31, 40 ~ 44 and 119) - see table 4 and description below.

Table 4 – Acceptable CCs overview			
CC Nr.	Name	Function	Valid value
1 ¹⁾	Modulation	Standard MIDI function (for additional LFO)	0 ~ 127
16 ³⁾	MIDI Notes Shift (Transpose)	Controls interface parameter	0 ~ 127 (see table 7)
17 ³⁾	MIDI Pitch Bend Range	Controls interface parameter	0 ~ 127 (see table 8)
18 ³⁾	VCF Cutoff Modulation	Controls interface parameter	0 ~ 63 = Decrement 64 = Off 64 ~ 127 = Increment
19 ³⁾	VCF Velocity Mode	Controls interface parameter	0 ~ 31 = Average pos. 32 ~ 63 = Average neg. 64 ~ 95 = Last pos. 96 ~ 127 = Last neg.
20 ³⁾	VCF Velocity Amount	Controls interface parameter	0 ~ 127

¹¹ The indicator doesn't blink if ARPG CLOCK SYNC parameter is "Normal" (see chapter 4.2.14).

¹² Please see stand-alone MIDI SysEx Communication manual for details.

¹³ So-called Running Status mode of MIDI communication is fully kept for all channel commands.



Table 4 – Acceptable CC overview – Continue

CC Nr.	Name	Function	Valid value
21 ³⁾	VCF Chnl Aftertouch Amount	Controls interface parameter	0 ~ 63 = Decrement 64 = Off 64 ~ 127 = Increment
22 ³⁾	VCF LFO Waveform	Controls interface parameter	0 ~ 63 (see table 9)
23 ³⁾	VCF LFO Sync	Controls interface parameter	0 ~ 31 = Fixed 32 ~ 63 = MIDI 64 ~ 95 = Fixed - Smooth 96 ~ 127 = MIDI - Smooth
24 ³⁾	VCF LFO Rate	Controls interface parameter	0 ~ 127 (see table 10)
25 ³⁾	VCF LFO Delay	Controls interface parameter	0 ~ 127 (see table 11)
26 ³⁾	VCF LFO Amount	Controls interface parameter	0 ~ 127
27 ³⁾	VCF LFO Modulation Wheel	Controls interface parameter	0 ~ 127
28 ³⁾	VCF LFO Chnl Aftertouch Amount	Controls interface parameter	0 ~ 127
29 ³⁾	ARPG Clock Sync	Controls interface parameter	0 ~ 31 = Normal 32 ~ 63 = Fixed 64 ~ 95 = MIDI 96 ~ 127 = CC
30 ³⁾	ARPG Clock Rate	Controls interface parameter	0 ~ 127 (see table 12)
31 ³⁾	Indicator Mode	Controls interface parameter	0 ~ 31 = Off 32 ~ 63 = LFO Clock 64 ~ 95 = ARPG Clock 96 ~ 127 = MIDI Event
40 ²⁾	Arpeggiator – Arpeggio	Remote control of the ARPEGGIO button	0 ~ 63 = none function 64 ~ 127 = Push
41 ²⁾	Key Assign Mode – Hold	Remote control of the HOLD button	0 ~ 63 = none function 64 ~ 127 = Push
42 ²⁾	Key Assign Mode – Chord Memory	Remote control of the CHORD MEMORY button	0 ~ 63 = none function 64 ~ 127 = Push
43 ²⁾	Key Assign Mode – Unison	Remote control of the UNISON button	0 ~ 63 = none function 64 ~ 127 = Push
44 ²⁾	Key Assign Mode – Poly	Remote control of the POLY button	0 ~ 63 = none function 64 ~ 127 = Push
64 ¹⁾	Hold	Standard MIDI function – works only for MIDI Notes	0 ~ 63 = Off 64 ~ 127 = On
119 ³⁾	Save Patch	Saves edited interface patch parameters in the edit buffer to actual patch in user memory	0 ~ 126 = none function 127 = Save
120 ¹⁾	All Sound Off	Standard MIDI function – works only for MIDI Notes	0 = ASO 1 ~ 127 = none function
121 ¹⁾	Reset All Controllers	Standard MIDI function	0 = RAC 1 ~ 127 = none function
122 ¹⁾	Local Off / On	Standard MIDI function - "On" status is equivalent to the interface reset	0 ~ 63 = none function 64 ~ 127 = On
123 ¹⁾	All Notes Off	Standard MIDI function – works only for MIDI Notes	0 = ANO 1 ~ 127 = none function

Remarks: ¹⁾ Standardized CC (see chapter 5.1.2.1)

²⁾ CC for remote control of instrument panel elements (see chapter 5.1.2.2)

³⁾ CC for setting of interface patch parameter (see chapter 5.1.2.3)

5.1.2.1 STANDARD CONTROLLERS

CC #1 : Modulation

The CC #1 increases depth of VCF modulation by additional interface's LFO. Maximal depth of the modulation (i.e. when value of the CC #1 is 127) adjusts the VCF LFO MODULATION WHEEL interface patch parameter (see chapter 4.2.12).

CC #64 : Hold

The CC #64 works only for received MIDI Notes. It doesn't work with instrument's keyboard¹⁴!

The CC #64 works standard way: holds tone generators of the instrument (active) during the hold pedal is pressed. Values from 64 to 127 are recognized as hold-on status, values from 0 to 63 as hold-off status.

CC #120 : All Sound Off (ASO)

The CC #120 works only for received MIDI Notes. It doesn't work with instrument's keyboard!

All active MIDI Notes are released immediately after reception of CC #120 (note that the value of the CC #120 must be always zero).

CC #121 : Reset All Controllers (RAC)

Standardized MIDI CCs and Pitch Bend controller are set to their initial status after the CC #121 reception (note that the value of the CC #121 must be always 0):

CC #1 (Modulation) → off (value 0)

CC #64 (Hold) → off (value 0)

Pitch Bend → middle position (value 4096)

CC #122 : Local Off / On

The CC #122 with value from 64 to 127 ("Local On") executes reset of the interface. It is equivalent to pressing of the interface's Reset button or to the Reset common system MIDI command.

Values 0 to 63 of the CC #122 ("Local Off") are ignored.

CC #123 : All Notes Off (ANO)

The CC #123 works only for received MIDI Notes. It doesn't work with instrument's keyboard!

All active MIDI Notes are released immediately after reception of CC #123 (note that the value of the CC #123 must be always zero).

5.1.2.2 CONTROLLERS FOR REMOTE CONTROL

CC #40 : Arpeggiator Section - Arpeggio

Controls remotely the ARPEGGIO button on instrument panel (① on fig. 13). Every time the CC #40 with value 64 to 127 is received, the ARPEGGIO button is pressed. Values 0 to 63 of the CC #40 have no function (they are ignored). The ARPEGGIO panel button remains fully functional - the CC #40 and the button can be used simultaneously.

CC #41 : Key Assign Mode Section - Hold

Controls remotely the HOLD button on instrument panel (② on fig. 13). Every time the CC #41 with value 64 to 127 is received, the HOLD button is pressed. Values 0 to 63 of the CC #41 have no function (they are ignored).

Fig. 13 – Instrument remote control



¹⁴ Use CC #41 for remote control of HOLD button if you want the HOLD function to be active for both instrument's own keyboard and MIDI Notes.

The HOLD panel button and external HOLD pedal remain fully functional - the CC #41 can be used simultaneously with the panel button or external pedal.

CC #42 : Key Assign Mode Section – Chord Memory

Controls remotely the CHORD MEMORY button on instrument panel (③ on fig. 13). Every time the CC #42 with value 64 to 127 is received, the CHORD MEMORY button is pressed. Values 0 to 63 of the CC #42 have no function (they are ignored). The CHORD MEMORY panel button and external CHORD pedal remain fully functional - the CC #42 can be used simultaneously with the button or external pedal.

CC #43 : Key Assign Mode Section - Unison

Controls remotely the UNISON button on instrument panel (④ on fig. 13). Every time the CC #43 with value 64 to 127 is received, the UNISON button is pressed. Values 0 to 63 of the CC #43 have no function (they are ignored). The UNISON panel button remains fully functional - the CC #43 can be used simultaneously with the button.

CC #44 : Key Assign Mode Section - Poly

Controls remotely the POLY button on instrument panel (⑤ on fig. 13). Every time the CC #44 with value 64 to 127 is received, the POLY button is pressed. Values 0 to 63 of the CC #44 have no function (they are ignored). The POLY panel button remains fully functional - the CC #44 can be used simultaneously with the button.

5.1.2.3 CONTROLLERS FOR INTERFACE PATCH PARAMETERS EDITING AND SAVING

This group of CCs adjusts values of the interface patch parameters in edit buffer and allows to save edited parameters to a patch in interface user memory. (see fig. 5).

CC #16 : MIDI Notes Shift (Transpose)

Controls the parameter MIDI Notes Shift (transpose) (see chapter 4.2.1). Since the CC #16 value is 0 to 127 and the parameter is 0 to 67 only, received value of the CC #16 is converted as shows table 7 in chapter 6.5.

CC #17 : MIDI Pitch Bend Range

Controls the parameter MIDI Pitch Bend Range (see chapter 4.2.2). Since the CC #17 value is 0 to 127 and the parameter is 0 to 24 only, received value of the CC #17 is converted as shows table 8 in chapter 6.5.

CC #18 : VCF Cutoff Modulation

Controls the parameter VCF Cutoff Modulation (see chapter 4.2.3). The CC#18 value from 0 to 127 corresponds to the parameter value directly.

CC #19 : VCF Velocity Mode

Controls the parameter VCF Velocity Mode (see chapter 4.2.4). Since the CC #19 value is 0 to 127 and the parameter is 0 to 4 only, received value of the CC #19 is converted: Values 0 ~ 31 correspond to the "Average Positive" mode, values 32 ~ 63 to the "Average Negative" mode, values 64 ~ 95 to the "Last Positive" mode and values 96 ~ 127 to the "Last negative" mode.

CC #20 : VCF Velocity Amount

Controls the parameter VCF Velocity Amount (see chapter 4.2.5). The CC#20 value from 0 to 127 corresponds to the parameter value directly.

CC #21 : VCF Chnl Aftertouch Amount

Controls the parameter VCF Channel (Mono) Aftertouch Amount (see chapter 4.2.6). The CC#21 value from 0 to 127 corresponds to the parameter value directly.

CC #22 : VCF LFO Waveform

Controls the parameter VCF LFO Waveform (see chapter 4.2.7). Since the CC #22 value is 0 to 127 and the parameter is 0 to 63 only, received value of the CC #22 is converted as shows table 9 in chapter 6.5.

CC #23 : VCF LFO Sync

Controls the parameter VCF LFO Sync (see chapter 4.2.8). Since the CC #23 value is 0 to 127 and the parameter is 0 to 3 only, received value of the CC #23 is converted: Values 0 ~ 31 correspond to the "Fixed" mode, values 32 ~ 63 to the "MIDI" mode, values 64 ~ 95 to the "Fixed – Smooth Start" mode and values 96 ~ 127 to the "MIDI – Smooth Start" mode.

CC #24 : VCF LFO Rate

Controls the parameter VCF LFO Rate (see chapter 4.2.9). The CC #24 value from 0 to 127 corresponds to the parameter value directly (see chapter 4.2.9 and table 10 in chapter 6.5).

CC #25 : VCF LFO Delay

Controls the parameter VCF LFO Delay (see chapter 4.2.10). The CC #25 value from 0 to 127 corresponds to the parameter value directly (see chapter 4.2.10 and table 11 in chapter 6.5).

CC #26 : VCF LFO Amount

Controls the parameter VCF LFO Amount (see chapter 4.2.11). The CC#26 value from 0 to 127 corresponds to the parameter value directly.

CC #27 : VCF LFO Modulation Wheel

Controls the parameter VCF LFO Modulation Wheel (see chapter 4.2.12). The CC#27 value from 0 to 127 corresponds to the parameter value directly.

CC #28 : VCF LFO Chnl Aftertouch

Controls the parameter VCF LFO Channel (Mono) Aftertouch (see chapter 4.2.13). The CC#28 value from 0 to 127 corresponds to the parameter value directly.

CC #29 : ARPG Clock Sync

Controls the parameter Arpeggiator Clock Sync (see chapter 4.2.14). Since the CC #29 value is 0 to 127 and the parameter is 0 to 3 only, received value of the CC #29 is converted: Values from 0 to 31 correspond to the "Normal" mode, values 32 to 63 to the "Fixed" mode, values 64 to 95 to the "MIDI" mode and values 96 to 127 to the "CC" mode.

CC #30 : ARPG Clock Rate

Function of the CC #30 depends on clock mode set by ARPG CLOCK SYNC parameter (see chapter 4.2.15).

- In "Normal" mode, the CC #30 is ignored.
- In "Fixed" and "MIDI" modes, the CC #30 controls ARPG CLOCK RATE interface parameter (i.e. rate of clock pulses – see chapter 4.2.15 and table 12 in chapter 6.5).
- In "CC" mode, each time the CC #30 is received (any value), one clock pulse (arpeggiator step) is generated.

CC #31 : Indicator Mode

Controls the parameter Indicator Mode (see chapter 4.2.16). Since the CC #31 value is 0 to 127 and the parameter is 0 to 3 only, received value of the CC #31 is converted: Values from 0 to 31 correspond to "Off" mode, 32 to 63 to "LFO Clock" mode, 64 to 95 to "ARPG Clock" mode and 96 to 127 to "MIDI Event" mode.

CC #119 : Save Patch

This is a special CC which enables saving of the edit buffer content (i.e. actual values of interface patch parameters – see fig. 5) to interface's internal patch memory.

When CC #119 with value 127 is received, content of the edit buffer is saved to actual patch selected previously by Program Change MIDI command¹⁵. Values 0 to 126 of the CC #119 are ignored - if received, nothing is done.

5.1.3 CHANNEL AFTERTOUCH

The Channel (Mono) Aftertouch MIDI command works only for received MIDI Notes. It doesn't work with instrument's keyboard!

The command can affect instrument's VCF (cutoff frequency) accordingly to the VCF Chnl Aftertouch Amount interface patch parameter setting (see chapter 4.2.6) and depth of the VCF modulation by additional LFO accordingly to the VCF LFO CHNL AFTERTOUCH interface patch parameter setting (see chapter 4.2.6).

5.1.4 PITCH BEND

The Pitch Bend MIDI command works only for received MIDI Notes. It doesn't work with instrument's keyboard!

The command can control instrument's VCOs tone bending accordingly to the PITCH BEND RANGE interface parameter setting (see chapter 4.2.2).

Remark: *The interface has no direct access to CV of individual VCOs, it controls only the keyboard matrix. The tones are not bended continuously but in semitone steps only thus!*

5.1.5 PROGRAM CHANGE

Table 5 – Conversion of Program Change numbers to sound patch (Bank / Program)

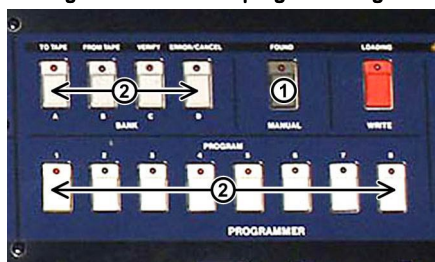
Pgm Chng value	Sound		Pgm Chng value	Sound		Pgm Chng value	Sound		Pgm Chng value	Sound	
	Bank	Pgm		Bank	Pgm		Bank	Pgm		Bank	Pgm
1	A	1	9	B	1	17	C	1	25	D	1
2	A	2	10	B	2	18	C	2	26	D	2
3	A	3	11	B	3	19	C	3	27	D	3
4	A	4	12	B	4	20	C	4	28	D	4
5	A	5	13	B	5	21	C	5	29	D	5
6	A	6	14	B	6	22	C	6	30	D	6
7	A	7	15	B	7	23	C	7	31	D	7
8	A	8	16	B	8	24	C	8	32	D	8

Program Change MIDI command has two functions: It changes sound patches saved in instrument memory (i.e. remote control of MANUAL, BANK and PROGRAM buttons on instrument's panel – see fig. 14) and it also changes interface own patches.

For Program Change value 0 the MANUAL mode of the instrument is chosen (i.e. the MANUAL button on instrument panel is pressed remotely - ① on fig. 14).

For values from 1 to 32, an instrument sound patch is selected (i.e. a combination of BANK and PROGRAM

Fig. 14 – Instrument program changes



¹⁵ After interface reset when none patch is still selected, the parameters are saved to patch Nr. 1.

buttons on instrument panel is pressed remotely - ② on fig. 14). Table 5 describes assignment of the Program Change values to banks / programs of the instrument.

Values from 33 to 63 of the Program Change are ignored.

For values from 64 to 127, interface patch parameter bank with number from 1 to 64 is recalled from interface's user memory to the edit buffer (see fig. 5).

5.2 COMMON SYSTEM COMMANDS

5.2.1 CLOCK

The MIDI Clock system command can be used for synchronization of the instrument's arpeggiator speed (chapter 4.2.14) and for synchronization of the additional software LFO rate (chapter 4.2.8).

Remark: For additional LFO, minimal speed of the MIDI Clock is limited to 10 BPM and maximal speed is limited to 400 BPM. If the allowed BPM range is exceeded, the interface works with the upper or lower tempo limit! The arpeggiator can work irregularly (some clock pulses will be ommited) if the tempo of played song and value of the ARPG CLOCK RATE are too high.

5.2.2 RESET

When the Reset MIDI system command is received, the interface is forced to the reset status (same as instrument is switched on or the interface's Reset button is pressed – see chapter 3.1).

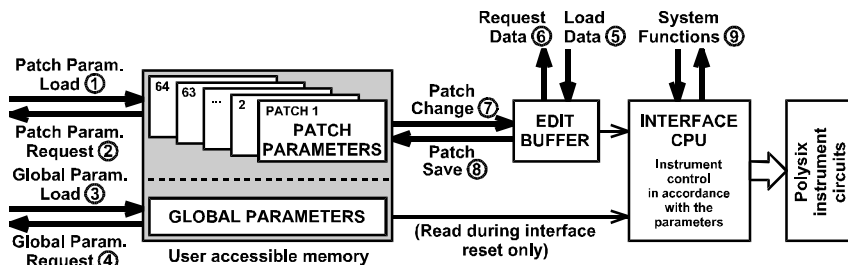
5.3 SYSTEM EXCLUSIVE MESSAGES

5.3.1 STRUCTURE OF SYSEX COMMUNICATION

The MIDI System Exclusive communication (see fig. 15) enables many operations:

- It enables to rewrite content of any individual patch ① in interface memory as well as content of system parameters bank ③. The content of any individual patch ② or system bank ④ can also be read from the interface on demand.
- Actual parameter values in the edit buffer can be changed ⑤ or read ⑥.
- Actual active patch can be changed ⑦ or overwritten with data from the edit buffer ⑧.
- System functions ⑨ allow remote control of instrument's buttons and many others.

Fig. 15 – Structure of System Exclusive communication



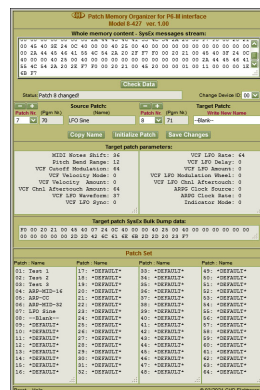
Please see the MIDI SysEx Communication manual for detailed description of the SysEx messages structure. The manual is available at our web site ("Support → Manuals & Support Software → P6-M" page).

5.3.2 PATCH NAME

All user patches stored in the user memory of the interface can be named. Although the names are not displayed on the interface or on the instrument's display, they are included in the **Bulk Dump - Patch Data Load** SysEx messages (see the stand-alone **MIDI SysEx Communication** manual).

The patch names serve for organization of the patches in an archive backed up in your PC. We have prepared the Patch Memory Organizer support utility (see fig. 16) for work with the archived patches. This utility enables to rename, initialize and relocate patches in P6-M's patch memory archive. The utility can be downloaded from our web site ("Support → Manuals & Support Software → P6-M" page). Detailed description how to use the utility is available in the **Support Software: Patch Memory Organizer** manual.

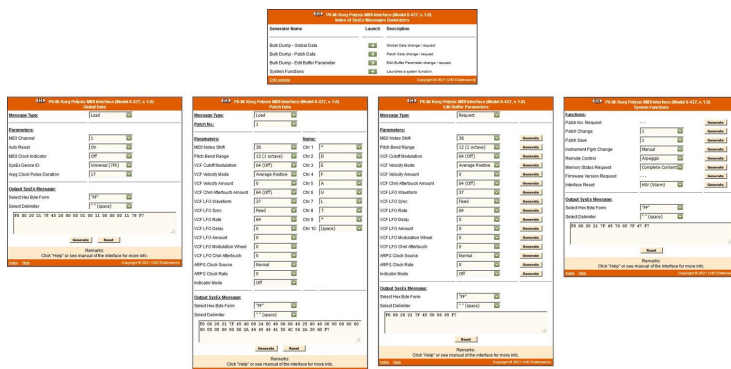
Fig. 16 – Patch Memory Organizer



5.3.3 SUPPORT FOR SYSEX MESSAGES CREATION

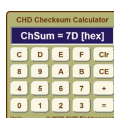
As a support for the users we have made the **SysEx Messages Generator** software utility (see fig. 17) to create MIDI System Exclusive messages to control the interface. All necessary SysEx messages can be created with this generator without difficult calculating of binary or hexadecimal numbers. The **SysEx Messages Generator** utility is available at our web site ("Support → Manuals & Support Software → P6-M" page). Detailed description how to use the utility is available in the **MIDI SysEx Communication** manual.

Fig. 17 – SysEx Messages Generator



If you create a SysEx message yourself, it is necessary to calculate the "Checksum" byte. It can be processed very simply with the **CHD Checksum Calculator** (see fig. 18). This special software calculator with guide how to use it is available at our web site ("Support → Generally Applicable Software → CHD Checksum Calculator" page).

Fig. 18 – Checksum calculator



6 APPENDICES

6.1 ERROR STATUS INDICATION

If any fatal error occurs during the interface operation, the interface stops the MIDI communication and it disconnects itself from instrument's circuits. However, the instrument still can be controlled by its own keyboard, panel knobs and switches. The error status is indicated by yellow blinking of the interface's indication LED. The number of LED blinks is indicating the error type (see table 6). If an error occurs, the interface must be reset to restore the operation – it is necessary to turn the instrument off and then on after a while.

Table 6 – Error Types	
Number of blinks	Error Type
1	Access to interface's internal memory failed (fatal error)
2	Interface's internal memory too busy (fatal error)
3	Unsuccessful write to a interface's internal memory cell (fatal error)
4	MIDI input buffer overflows (can be solved automatically – see chapter 4.1.2)
5	MIDI output buffer overflows (can be solved automatically – see chapter 4.1.2)

6.2 ERRORS CAUSED BY MIDI LOOP

When the P6-M interface is controlled by a sequencer (HW or SW) and the devices are connected bi-directionally (with both MIDI cables – see fig. 2) and the sequencer isn't set correctly, communication loop might occur and the entire MIDI system "freezes". All MIDI data incoming from sequencer to interface's input are transferred to interface's output (THRU function) and again back to the sequencer in this case. This causes infinite cyclic transfer of the same MIDI data through the sequencer.

To avoid this situation, throughput of MIDI data from input to output must be turned off in the DAW / Sequencer. This function is usually called MIDI ECHO or MIDI THRU. Check the user manual of your DAW / Sequencer for that setting.

6.3 USER MEMORY PROTECTION

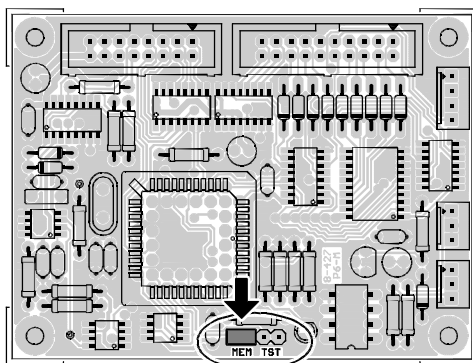
All user data stored in the user memory can be protected against unwanted rewriting after the memory is filled with your own data (i.e. when you have saved your own values of global and patch parameters).

There is a jumper header on the interface board (see fig. 19). If the two left pins of the header labeled as MEM are interconnected / shorted by standard jumper (part of the device delivery), the memory protection is active. All data can be still read from the memory but any writing to the memory is disabled.

If you try to write a Data to the memory (e.g. using CC #119 or a SysEx command) when the protection is active, the MIDI command is ignored and the interface transmits the **[F0 00 20 21 ii 45 70 05 7F xx F7 hex]** SysEx message to MIDI output as an info about the disabled command execution.

Actual status of the memory protection can be also read on demand – for details please see the MIDI SysEx Communication manual.

Fig. 19 – Memory protection jumper



6.4 MIDI IMPLEMENTATION CHART

MIDI IMPLEMENTATION CHART

Device : **P6-M**

Date : **9 / 2021**

Model : **8-427**

Version : **1.0**

Function		Transmission	Reception	Remarks
Basic	Default	X	1~16	¹⁾
Channel	Changed	X	1~16	¹⁾
Mode	Default	X	Mode 3	Not Altered ²⁾
	Messages	X	X	
Note Number		X	0~127	³⁾
Velocity	Note ON	X	O	
	Note OFF	X	X	
After	Key's	X	X	
Touch	Channel's	X	O	
Pitch Bender		X	O	
Control Changes	1	X	O	Modulation
	16 to 31	X	O	Own controllers – see description
	40 to 44	X	O	Own controllers – see description
	64	X	O	Hold
	119	X	O	Own controller – see description
	120	X	O	All Sound Off
	121	X	O	Reset All Controllers
Program Change		X	O	Patch Change
System Exclusive		O	O	See description
System	Song Position	X	X	
Common	Song Select	X	X	
	Tune	X	X	
System	Clock	X	O	
Real Time	Command	X	X	
Others	Local ON/OFF	X	O	CC #122 – Local ON only
	All Notes Off	X	O	CC #123
	Active Sensing	X	X	
	Reset	X	O	
Notes : ¹⁾ Can be changed by user ²⁾ Up to six notes (voices) can be processed simultaneously ³⁾ Position of 61 acceptable Note numbers depends on MIDI Notes Shift parameter setting				

Mode 1 : **OMNI ON, POLY**

Mode 2 : **OMNI ON, MONO**
O : Yes

Mode 3 : **OMNI OFF, POLY**

Mode 4 : **OMNI OFF, MONO**
X : No



6.5 CONVERSION TABLES

Table 7 – Conversion of CC #16 value to “MIDI NOTES SHIFT” parameter value

CC value	Param. value	CC value	Param. value	CC value	Param. value	CC value	Param. value	CC value	Param. value
0	0	26 ~ 27	14	53 ~ 54	28	79 ~ 80	42	106 ~ 107	56
1 ~ 2	1	28 ~ 29	15	55	29	81 ~ 82	43	108	57
3 ~ 4	2	30 ~ 31	16	56 ~ 57	30	83 ~ 84	44	109 ~ 110	58
5 ~ 6	3	32 ~ 33	17	58 ~ 59	31	85 ~ 86	45	111 ~ 112	59
7 ~ 8	4	34 ~ 35	18	60 ~ 61	32	87 ~ 88	46	113 ~ 114	60
9 ~ 10	5	36	19	62 ~ 63	33	89 ~ 90	47	115 ~ 116	61
11 ~ 12	6	37 ~ 38	20	64 ~ 65	34	91	48	117 ~ 118	62
13 ~ 14	7	39 ~ 40	21	66 ~ 67	35	92 ~ 93	49	119 ~ 120	63
15 ~ 16	8	41 ~ 42	22	68 ~ 69	36	94 ~ 95	50	121 ~ 122	64
17 ~ 18	9	43 ~ 44	23	70 ~ 71	37	96 ~ 97	51	123 ~ 124	65
19	10	45 ~ 46	24	72	38	98 ~ 99	52	125 ~ 126	66
20 ~ 21	11	47 ~ 48	25	73 ~ 74	39	100 ~ 101	53	127	67
22 ~ 23	12	49 ~ 50	26	75 ~ 76	40	102 ~ 103	54		
24 ~ 25	13	51 ~ 52	27	77 ~ 78	41	104 ~ 105	55		

Table 8 – Conversion of CC #17 value to “PITCH BEND RANGE” parameter value

CC value	Param. value	CC value	Param. value	CC value	Param. value	CC value	Param. value	CC value	Param. value
0 ~ 4	±0	25 ~ 29	±5	50 ~ 54	±10	75 ~ 79	±15	100 ~ 104	±20
5 ~ 9	±1	30 ~ 34	±6	55 ~ 59	±11	80 ~ 84	±16	105 ~ 109	±21
10 ~ 14	±2	35 ~ 39	±7	60 ~ 64	±12	85 ~ 89	±17	110 ~ 114	±22
15 ~ 19	±3	40 ~ 44	±8	65 ~ 69	±13	90 ~ 94	±18	115 ~ 119	±23
20 ~ 24	±4	45 ~ 49	±9	70 ~ 74	±14	95 ~ 99	±19	120 ~ 127	±24

Table 9 – Conversion of CC #22 value to “VCF LFO WAVEFORM” parameter value

CC value	Param. value	CC value	Param. value	CC value	Param. value	CC value	Param. value	CC value	Param. value
0 ~ 1	0	26 ~ 27	13	52 ~ 53	26	78 ~ 79	39	104 ~ 105	52
2 ~ 3	1	28 ~ 29	14	54 ~ 55	27	80 ~ 81	40	106 ~ 107	53
4 ~ 5	2	30 ~ 31	15	56 ~ 57	28	82 ~ 83	41	108 ~ 109	54
6 ~ 7	3	32 ~ 33	16	58 ~ 59	29	84 ~ 85	42	110 ~ 111	55
8 ~ 9	4	34 ~ 35	17	60 ~ 61	30	86 ~ 87	43	112 ~ 113	56
10 ~ 11	5	36 ~ 38	18	62 ~ 63	31	88 ~ 89	44	114 ~ 115	57
12 ~ 13	6	38 ~ 40	19	64 ~ 65	32	90 ~ 91	45	116 ~ 117	58
14 ~ 15	7	40 ~ 41	20	66 ~ 67	33	92 ~ 93	46	118 ~ 119	59
16 ~ 17	8	42 ~ 43	21	68 ~ 69	34	94 ~ 95	47	120 ~ 121	60
18 ~ 19	9	44 ~ 45	22	70 ~ 71	35	96 ~ 97	48	122 ~ 123	61
20 ~ 21	10	46 ~ 47	23	72 ~ 73	36	98 ~ 99	49	124 ~ 125	62
22 ~ 23	11	48 ~ 49	24	74 ~ 75	37	100 ~ 101	50	126 ~ 127	63
24 ~ 25	12	50 ~ 51	25	76 ~ 77	38	102 ~ 103	51		



Table 10 – Conversion of "VCF LFO RATE" parameter and CC #24 value to LFO frequency / period

The param. or CC #24 value	Mode (param. VCF LFO SYNC)				The param. or CC #24 value	Mode (param. VCF LFO SYNC)			
	FIXED		MIDI			FIXED		MIDI	
	Freq. [Hz]	Period [sec]	Period [ticks]	Note length		Freq. [Hz]	Period [sec]	Period [ticks]	Note length
0	0,100	10,000	254	-	45	0,511	1,956	102	-
1	0,104	9,644	250	-	46	0,530	1,886	100	-
2	0,108	9,300	246	-	47	0,550	1,819	98	-
3	0,111	8,969	242	-	48	0,570	1,754	96	1/1
4	0,116	8,650	238	-	49	0,591	1,692	94	-
5	0,120	8,342	234	-	50	0,613	1,632	92	-
6	0,124	8,045	230	-	51	0,636	1,573	90	-
7	0,129	7,758	226	-	52	0,659	1,517	88	-
8	0,134	7,482	222	-	53	0,683	1,463	86	-
9	0,139	7,216	218	-	54	0,709	1,411	84	-
10	0,144	6,959	214	-	55	0,735	1,361	82	-
11	0,149	6,711	210	-	56	0,762	1,313	80	-
12	0,155	6,472	206	-	57	0,790	1,266	78	-
13	0,160	6,241	202	-	58	0,819	1,221	76	-
14	0,166	6,019	198	-	59	0,849	1,177	74	-
15	0,172	5,805	194	-	60	0,881	1,135	72	-
16	0,179	5,598	190	-	61	0,913	1,095	70	-
17	0,185	5,399	186	-	62	0,947	1,056	68	-
18	0,192	5,206	182	-	63	0,982	1,018	66	-
19	0,199	5,021	178	-	64	1,018	0,982	65	-
20	0,207	4,842	174	-	65	1,056	0,947	64	1/1³
21	0,214	4,670	170	-	66	1,095	0,913	63	-
22	0,222	4,503	166	-	67	1,135	0,881	62	-
23	0,230	4,343	162	-	68	1,177	0,849	61	-
24	0,239	4,188	158	-	69	1,221	0,819	60	-
25	0,248	4,039	154	-	70	1,266	0,790	59	-
26	0,257	3,895	150	-	71	1,313	0,762	58	-
27	0,266	3,757	146	-	72	1,361	0,735	57	-
28	0,276	3,623	142	-	73	1,411	0,709	56	-
29	0,286	3,494	138	-	74	1,463	0,683	55	-
30	0,297	3,369	134	-	75	1,517	0,659	54	-
31	0,308	3,249	130	-	76	1,573	0,636	53	-
32	0,319	3,134	128	-	77	1,632	0,613	52	-
33	0,331	3,022	126	-	78	1,692	0,591	51	-
34	0,343	2,915	124	-	79	1,754	0,570	50	-
35	0,356	2,811	122	-	80	1,819	0,550	49	-
36	0,369	2,711	120	-	81	1,886	0,530	48	1/2
37	0,383	2,614	118	-	82	1,956	0,511	47	-
38	0,397	2,521	116	-	83	2,028	0,493	46	-
39	0,411	2,431	114	-	84	2,103	0,476	45	-
40	0,427	2,345	112	-	85	2,181	0,459	44	-
41	0,442	2,261	110	-	86	2,261	0,442	43	-
42	0,459	2,181	108	-	87	2,345	0,427	42	-
43	0,476	2,103	106	-	88	2,431	0,411	41	-
44	0,493	2,028	104	-	89	2,521	0,397	40	-



Table 10 – Conversion of “VCF LFO RATE” parameter and CC #24 value to LFO frequency / period (continue)

The param. or CC #24 value	Mode (param. VCF LFO SYNC)				The param. or CC #24 value	Mode (param. VCF LFO SYNC)			
	FIXED		MIDI			FIXED		MIDI	
	Freq. [Hz]	Period [sec]	Period [ticks]	Note length		Freq. [Hz]	Period [sec]	Period [ticks]	Note length
90	2,614	0,383	39	-	109	5,206	0,192	20	-
91	2,711	0,369	38	-	110	5,399	0,185	19	-
92	2,811	0,356	37	-	111	5,598	0,179	18	-
93	2,915	0,343	36	-	112	5,805	0,172	17	-
94	3,022	0,331	35	-	113	6,019	0,166	16	1/4³
95	3,134	0,319	34	-	114	6,241	0,160	15	-
96	3,249	0,308	33	-	115	6,472	0,155	14	-
97	3,369	0,297	32	1/2³	116	6,711	0,149	13	-
98	3,494	0,286	31	-	117	6,959	0,144	12	1/8
99	3,623	0,276	30	-	118	7,216	0,139	11	-
100	3,757	0,266	29	-	119	7,482	0,134	10	-
101	3,895	0,257	28	-	120	7,758	0,129	9	-
102	4,039	0,248	27	-	121	8,045	0,124	8	1/8³
103	4,188	0,239	26	-	122	8,342	0,120	7	-
104	4,343	0,230	25	-	123	8,650	0,116	6	1/16
105	4,503	0,222	24	1/4	124	8,969	0,111	5	-
106	4,670	0,214	23	-	125	9,300	0,108	4	1/16³
107	4,842	0,207	22	-	126	9,644	0,104	3	1/32
108	5,021	0,199	21	-	127	10,000	0,100	2	1/32³

Notes: The most used values for MIDI synchronization are marked in bold.

Maximal allowed tempo (BPM) is limited for MIDI synchronization (in dependence on CC #24 values):

up to 406 BPM for CC #24 values from 0 to 124,

up to 391 BPM for CC #24 value 125,

up to 293 BPM for CC #24 value 126,

up to 195 BPM for CC #24 value 127.

Minimal allowed tempo (BPM) is limited for MIDI synchronization to 10 BPM (for all values of CC #24).

If the tempo exceeds these limits, it is replaced by the lowest or highest allowed respectively.



Table 11 – Conversion of “VCF LFO DELAY” parameter and CC #25 value to LFO delay time / note length

The param. or CC #25 value	Mode (param. VCF LFO SYNC)			The param. or CC #25 value	Mode (param. VCF LFO SYNC)			The param. or CC #25 value	Mode (param. VCF LFO SYNC)		
	FIXED	MIDI			FIXED	MIDI			FIXED	MIDI	
	Time [sec]	Time [ticks]	Note length		Time [sec]	Time [ticks]	Note length		Time [sec]	Time [ticks]	Note length
0	0,000	0	none	43	3,400	43	-	86	6,779	108	-
1	0,100	1	1/64 ³	44	3,479	44	-	87	6,857	110	-
2	0,179	2	1/32 ³	45	3,557	45	-	88	6,936	112	-
3	0,257	3	1/32	46	3,636	46	-	89	7,014	114	-
4	0,336	4	1/16 ³	47	3,714	47	-	90	7,093	116	-
5	0,414	5	-	48	3,793	48	1/2	91	7,171	118	-
6	0,493	6	1/16	49	3,871	49	-	92	7,250	120	-
7	0,571	7	-	50	3,950	50	-	93	7,329	122	-
8	0,650	8	1/8 ³	51	4,029	51	-	94	7,407	124	-
9	0,729	9	-	52	4,107	52	-	95	7,486	126	-
10	0,807	10	-	53	4,186	53	-	96	7,564	128	-
11	0,886	11	-	54	4,264	54	-	97	7,643	132	-
12	0,964	12	1/8	55	4,343	55	-	98	7,721	136	-
13	1,043	13	-	56	4,421	56	-	99	7,800	140	-
14	1,121	14	-	57	4,500	57	-	100	7,879	144	-
15	1,200	15	-	58	4,579	58	-	101	7,957	148	-
16	1,279	16	1/4 ³	59	4,657	59	-	102	8,036	152	-
17	1,357	17	-	60	4,736	60	-	103	8,114	156	-
18	1,436	18	-	61	4,814	61	-	104	8,193	160	-
19	1,514	19	-	62	4,893	62	-	105	8,271	164	-
20	1,593	20	-	63	4,971	63	-	106	8,350	168	-
21	1,671	21	-	64	5,050	64	1/1 ³	107	8,429	172	-
22	1,750	22	-	65	5,129	66	-	108	8,507	176	-
23	1,829	23	-	66	5,207	68	-	109	8,586	180	-
24	1,907	24	1/4	67	5,286	70	-	110	8,664	184	-
25	1,986	25	-	68	5,364	72	-	111	8,743	188	-
26	2,064	26	-	69	5,443	74	-	112	8,821	192	2/1
27	2,143	27	-	70	5,521	76	-	113	8,900	196	-
28	2,221	28	-	71	5,600	78	-	114	8,979	200	-
29	2,300	29	-	72	5,679	80	-	115	9,057	204	-
30	2,379	30	-	73	5,757	82	-	116	9,136	208	-
31	2,457	31	-	74	5,836	84	-	117	9,214	212	-
32	2,536	32	1/2 ³	75	5,914	86	-	118	9,293	216	-
33	2,614	33	-	76	5,993	88	-	119	9,371	220	-
34	2,693	34	-	77	6,071	90	-	120	9,450	224	-
35	2,771	35	-	78	6,150	92	-	121	9,529	228	-
36	2,850	36	-	79	6,229	94	-	122	9,607	232	-
37	2,929	37	-	80	6,307	96	1/1	123	9,686	236	-
38	3,007	38	-	81	6,386	98	-	124	9,764	240	-
39	3,086	39	-	82	6,464	100	-	125	9,843	244	-
40	3,164	40	-	83	6,543	102	-	126	9,921	248	-
41	3,243	41	-	84	6,621	104	-	127	10,000	252	-
42	3,321	42	-	85	6,700	106	-				

Note: The most used values for MIDI synchronization are marked in bold.



Table 12 – Conversion of “ARPG CLOCK RATE” parameter and CC #30 value to clock period

The param. or CC #30 value	Mode (param. ARPG CLOCK MODE)				The param. or CC #30 value	Mode (param. ARPG CLOCK MODE)			
	FIXED		MIDI			FIXED		MIDI	
	Freq. [Hz]	Period [sec]	Period [ticks]	Note length		Freq. [Hz]	Period [sec]	Period [ticks]	Note length
0	0,400	2,500	128	-	45	2,045	0,489	83	-
1	0,415	2,411	127	-	46	2,121	0,472	82	-
2	0,430	2,325	126	-	47	2,199	0,455	81	-
3	0,446	2,242	125	-	48	2,280	0,439	80	-
4	0,462	2,162	124	-	49	2,364	0,423	79	-
5	0,480	2,085	123	-	50	2,452	0,408	78	-
6	0,497	2,011	122	-	51	2,542	0,393	77	-
7	0,516	1,940	121	-	52	2,636	0,379	76	-
8	0,535	1,870	120	-	53	2,733	0,366	75	-
9	0,554	1,804	119	-	54	2,834	0,353	74	-
10	0,575	1,740	118	-	55	2,939	0,340	73	-
11	0,596	1,678	117	-	56	3,048	0,328	72	-
12	0,618	1,618	116	-	57	3,160	0,316	71	-
13	0,641	1,560	115	-	58	3,277	0,305	70	-
14	0,665	1,505	114	-	59	3,398	0,294	69	-
15	0,689	1,451	113	-	60	3,523	0,284	68	-
16	0,715	1,399	112	-	61	3,653	0,274	67	-
17	0,741	1,350	111	-	62	3,788	0,264	66	-
18	0,768	1,302	110	-	63	3,928	0,255	65	-
19	0,797	1,255	109	-	64	4,073	0,246	64	1/1³
20	0,826	1,211	108	-	65	4,224	0,237	63	-
21	0,857	1,167	107	-	66	4,380	0,228	62	-
22	0,888	1,126	106	-	67	4,541	0,220	61	-
23	0,921	1,086	105	-	68	4,709	0,212	60	-
24	0,955	1,047	104	-	69	4,883	0,205	59	-
25	0,990	1,010	103	-	70	5,063	0,198	58	-
26	1,027	0,974	102	-	71	5,250	0,190	57	-
27	1,065	0,939	101	-	72	5,444	0,184	56	-
28	1,104	0,906	100	-	73	5,645	0,177	55	-
29	1,145	0,873	99	-	74	5,853	0,171	54	-
30	1,187	0,842	98	-	75	6,070	0,165	53	-
31	1,231	0,812	97	-	76	6,294	0,159	52	-
32	1,276	0,783	96	1/1	77	6,526	0,153	51	-
33	1,324	0,756	95	-	78	6,767	0,148	50	-
34	1,372	0,729	94	-	79	7,017	0,143	49	-
35	1,423	0,703	93	-	80	7,276	0,137	48	1/2
36	1,476	0,678	92	-	81	7,545	0,133	47	-
37	1,530	0,654	91	-	82	7,823	0,128	46	-
38	1,587	0,630	90	-	83	8,112	0,123	45	-
39	1,645	0,608	89	-	84	8,412	0,119	44	-
40	1,706	0,586	88	-	85	8,723	0,115	43	-
41	1,769	0,565	87	-	86	9,045	0,111	42	-
42	1,834	0,545	86	-	87	9,379	0,107	41	-
43	1,902	0,526	85	-	88	9,725	0,103	40	-
44	1,972	0,507	84	-	89	10,084	0,099	39	-



Table 12 – Conversion of “ARPG CLOCK RATE” parameter and CC #30 value to clock period (continue)

The param. or CC #81 value	Mode (param. “ARPG - Clock Mode”)				The param. or CC #81 value	Mode (param. “ARPG - Clock Mode”)			
	FIXED		MIDI			FIXED		MIDI	
	Freq. [Hz]	Period [sec]	Period [ticks]	Note length		Freq. [Hz]	Period [sec]	Period [ticks]	Note length
90	10,456	0,096	38	-	109	20,825	0,048	19	-
91	10,843	0,092	37	-	110	21,595	0,046	18	-
92	11,243	0,089	36	-	111	22,392	0,045	17	-
93	11,658	0,086	35	-	112	23,219	0,043	16	1/4³
94	12,089	0,083	34	-	113	24,076	0,042	15	-
95	12,535	0,080	33	-	114	24,965	0,040	14	-
96	12,998	0,077	32	1/2³	115	25,887	0,039	13	-
97	13,478	0,074	31	-	116	26,843	0,037	12	1/8
98	13,975	0,072	30	-	117	27,834	0,036	11	-
99	14,492	0,069	29	-	118	28,862	0,035	10	-
100	15,027	0,067	28	-	119	29,928	0,033	9	-
101	15,582	0,064	27	-	120	31,033	0,032	8	1/8³
102	16,157	0,062	26	-	121	32,179	0,031	7	-
103	16,754	0,060	25	-	122	33,367	0,030	6	1/16
104	17,372	0,058	24	1/4	123	34,599	0,029	5	-
105	18,014	0,056	23	-	124	35,877	0,028	4	1/16³
106	18,679	0,054	22	-	125	37,202	0,027	3	1/32
107	19,369	0,052	21	-	126	38,576	0,026	2	1/32³
108	20,084	0,050	20	-	127	40,000	0,025	1	1/64³

Note: The most used values for MIDI synchronization are marked in bold.

6.6 TECHNICAL SPECIFICATION

MIDI bus :	fully according to MIDI Manufacturers Association standards
MIDI connectors :	2x DIN 41524 (5 pins / 180°)
Transit data delay MIDI IN → THRU :	max. 1 ms, typ. 0,32 ms
Power supply voltage :	±5 V from instrument's power supply unit
Power current consumption:	max. 50 mA from +5V / max. 5 mA from -5V
Electrical design :	conforms to product specification ČSN EN 60335-1+A55, ČSN EN 60335-2-45, IEC 60065
EMC :	conforms to product specification EN 55013, EN55020
Operating environment :	standard indoor
Range of operating temperature :	+5°C to +40°C
Relative environmental humidity :	up to 85 %
Board dimensions :	80 x 60 mm

6.7 WARRANTY CONDITIONS

The equipment is provided with **thirty-months warranty** starting from the date of the equipment take-over by the customer. This date must be specified on warranty list together with dealer's confirmation.

During this period of time, all defects of equipment or its accessories, caused by defective material or faulty manufacturing, will be removed free of charge.

Warranty repair is asserted by the customer against the dealer.

Warranty period is to be extended for the time period, during which the product was under the warranty repair.

The relevant legal regulations take effect in case of cancellation of purchase contract.

The customer will lose the right for free warranty repair, if he will not be able to submit properly filled out warranty list or if the defects of the product had been caused by:

- unavoidable event (natural disaster),
- connecting the device to the incorrect supply voltage,
- inputs or outputs overloading by connecting the signals source or load source with not-corresponding characteristics etc.,
- faulty equipment operation, which is at variance with the instructions referred-to in the operating manual,
- mechanical damage caused by consumer during transportation or usage of equipment,
- unprofessional interference with the equipment or by equipment modification without manufacturer's approval.

6.8 IMPORTANT SAFETY INSTRUCTIONS



CAUTION
RISK OF ELECTRIC SHOCK - DO NOT OPEN
ATTENTION: RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR



The symbols shown above are internationally accepted symbols that warn of potential hazards with electrical products. The lightning flash with arrowpoint in an equilateral triangle means that there are dangerous voltages present within the unit. The exclamation point in an equilateral triangle indicates that it is necessary for the user to refer to the owner's manual.

These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Disconnect the unit during storms to prevent damage.

INFORMATION FOR USERS ON DISPOSAL OF OLD EQUIPMENT AND BATTERIES [EUROPEAN UNION ONLY]



Equipment bearing these symbols should not be disposed as general household waste.

You should look for appropriate recycling facilities and systems for the disposal of these products.

Notice: The sign Pb below the symbol for batteries indicates that this battery contains lead.

WARNING

FOR YOUR PROTECTION, PLEASE READ THE FOLLOWING:

WATER AND MOISTURE: Appliance should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

POWER SOURCES: The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

GROUNDING OR POLARIZATION: Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

POWER CORD PROTECTION: Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

SERVICING: To reduce the risk of fire or electric shock, the user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

FOR UNITS EQUIPPED WITH EXTERNALLY ACCESSIBLE FUSE RECEPTACLE: Replace fuse with same type and rating only.

All documents and support software are available at manufacturer's web pages.



Korg Polysix MIDI Interface
 Model P6-M, Nr. 8-427, ver. 1.00
 Document: 842710_manual, rev. 1

Manufacturer: CHD Elektroservis, Czech Republic

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