

Note: You must be in Edit mode to use CC's.

Function	CC # Dec/Hex	Value Interpretation (range used is always 0-127)
Mod wheel	01/01	0-127 Handled by original AX73 code
Volume	07/07	0-127 Handled by original AX73 code using VCA EG depth
VCO Octave	14/0E	E00 0-31: 16', 32-63: 8', 64-95: 4', 96-127: 2'
VCO Waveform	15/0F	E01 0-31: Saw, 32-63: Tri, 64-95: Pulse, 96-127 Saw+Tri
VCO Pulse Width	16/10	E02 0-127
VCO PWMS	17/11	E03 0-127
VCO EG Depth	18/12	E04 0-127
Noise on/off	19/13	E05 0-63: Noise Off, 64-127: Noise On
Sampler Enable	20/14	E06 0-63: Sampler not enabled, 64-127: Sampler Enabled
A/B Balance	21/15	E07 0-127
VCF OWMF	22/16	E12 0-127
VCF EG Depth/Pol	23/17	E13 0-127 0: -50, 64: 0, 127: +50
VCF Key Follow	24/18	E14 0-127
VCF Velo	25/19	E15 0-127 0: -50, 64: 0, 127: +50
HPF	26/1A	E16 0-127
EG Sel	27/1B	E20 0-63: Filter uses EGA, 64-127: Filter uses EGO
EGA Decay	28/1C	E22 0-127 VCA always uses this EG
EGA Sustain	29/1D	E23 0-127
EGO Attack	30/1E	E25 0-127 VCO always uses this EG
EGO Decay	31/1F	E26 0-127
EGO Sustain	32/20	E27 0-127
EGO Release	33/21	E28 0-127
VCA Level	34/22	E30 0-127
VCA Velo	35/23	E31 0-127 0: -50, 64: 0, 127: +50
LFO destination	36/24	E40 0-31: Off, 32-63: VCO, 64-95: VCF, 96-127: VCA
LFO waveform	37/25	E41 0-24: DnSaw, 25-49: UpSaw, 50-74: Tri, 75-99: Square, 100-127: Random
LFO freq	38/26	E42 0-127
LFO depth	39/27	E43 0-127
LFO delay	40/28	E44 0-127
Chorus	41/29	E45 0-42: Chorus off, 43-85: Mode 1, 86-127: Mode 2
Assign	42/2A	E50 0-42: Poly, 43-85: Dual, 86-127: Unison
Sol Port	43/2B	E51 0-127
Detune	44/2C	E52 0-127
Wh Bnd O	45/2D	E60 0-127 mapped to 0-12
Wh Bnd F	46/2E	E61 0-127
Wh Mod	47/2F	E62 0-127
MIDI SP	48/30	E70 0-42: Off, 43-85: Upp, 86-127: Low

Sustain	64/40	0-127 Sustain pedal, handled by original AX73 code
VCF Resonance	71/47	E11 0-127
VCA Release	72/48	E24 0-127
VCA Attack	73/49	E21 0-127
VCF Cutoff	74/4A	E10 0-127
All notes off	123/7B	Value not used, handled by original AX60 code

Decimal	Hex Equivalent
00	00
32	20
64	40
96	60

When configuring a controller to use the CC's , assign parameters that map to just a few values to switches, NOT to sliders. Using a slider for something like the LFO waveform will send many identical requests to the synth as it it moved in-between the threshold values. The synth doesn't detect that the same option is being selected each time, so a lot of time may be wasted processing CC's that don't change anything. Also, in the case of something like the LFO waveform, the firmware may also reset certain LFO variables each time the waveform is selected, even if it was the same one that was already selected. This is because with the original controls there was no way to select the same option over and over again, so the firmware was not designed to handle this.

To save all patches via MIDI sysex, initiate a tape save. The sysex dump (exactly 5205 bytes) always contains all of the patches. After the MIDI data has been sent, the tape save operation will take place. This takes a while, so you may want to select just one bank for the tape save first.

TAPE
0/Save
DOWN
0/Save

should do it. That will only send bank 9 to the tape output.

To load the patches via MIDI, just send the sysex file back to the AX73, with Memory Protect off. Do not select TAPE mode. Just have the synth in normal operating mode. Note that loading the patches into RAM via sysex does not re-load the currently selected patch. You won't see any change on the display and the currently loaded patch will play as before, until you load it again, then you will get the new one.

Note: You may need to slow down the MIDI transfer some when sending the sysex to the AX73/VX90. To do this in MIDI OX, set the buffer size to 1 and add a delay between buffers. Also, it's possible the MIDI pitch wheel messages could interfere with loading patches via sysex. Please insure that nothing is placing these messages on the bus while you are loading a sysex patch file.

Sysex message format:

Byte	Value	Descr
0	F0	Sysex Status byte
1	47	AKAI MIDI Mfr ID
2	7B	Device ID, chosen at random
3	73	Product ID
		First patch:
4	0-3	E00 VCO Octave selection
5	0-3	E01 VCO waveform selection
6	0-64h	E02 VCO Pulse Width
etc		Parameter values either 0-100, or 0-3 if four choices, or 0 or 1 for Noise On/Off, Sampler 40 values in the same order as listed in the user's manual. Then 12 ASCII characters for the name of the patch. 52 bytes/patch

100 patches,
then a single F7 byte (EOX) at the end of the message