KENTON

INSTRUCTIONS FOR MIDI INTERFACE
YAMAHA CS-50 & CS-60

USING THE MIDI INTERFACE

When you turn on the synthesizer for the first time, you will be in omni-on mode for receive (all channels). Selecting any MIDI channel will automatically select omni-off. See below and the next page for factory default settings. When you select a MIDI receive channel, this will be stored in memory and will be remembered for when you next turn on the synth. All parameters listed on the next page are stored in non-volatile memory.

If you want to put the machine back to the factory default settings at any time, switch the synth on whilst holding the red push button pressed - hold for a couple of seconds then release.

SWITCH

The switch beside the headphone jack is to enable you to route the output of the CS-50/60 sub-oscillator through the MIDI Mod Wheel or Aftertouch before it goes to the VCO, VCF & VCA routing levers, instead of going direct as it normally would. This enables you to have MIDI control of the LFO signal level.

With the switch in the up/off position the CS-50/60 behaves completely as normal. However, with the switch in the down/on position, the VCO, VCF & VCA routing levers select the sub-oscillator destination as usual but no effect will be noticed until the MIDI Mod Wheel is advanced or aftertouch is used. So, with the switch down/on you must have at least one of the routing levers set to on for the effect of MIDI mod wheel or aftertouch to become apparent.

RED PUSH BUTTON

Two modes are available by pushing the red push button.

1) SET-UP MODE
Setting MIDI channels and assignments. Give the red push button one short press - then release. Follow this on the connected MIDI keyboard with a note or sequence of notes as detailed on page 2. After selecting a MIDI channel, you will be automatically returned to playing mode but after making other assignments you will need to press the ENTER key (Top C) to return to playing mode. This is to enable you to make the multiple key presses required when re-assigning sources to destinations. (N.B. set-ups are stored in non-volatile memory).

2) TRANSPOSE MODE
Press and hold the red push button for four seconds - then release. Middle C will sound on the synth and continue to sound until you press a key on the connected MIDI keyboard; the note that you press will be the new middle C for MIDI IN. You can set any value up to two octaves up or down. Settings outside this range will be ignored. Note that transpose mode cannot be entered from within setup mode.

ASSIGNING MIDI CONTROL SOURCES TO DESTINATIONS

SOURCES	*DESTINATIONS*	(d)=factory default
AFTERTOUCH	off / modulation (d) / p.bend / vcf	
CONTROLLER X	off / vcf (d) / unused	
CONTROLLER Y	off / vcf / unused (d)	
VELOCITY	off (d) / vcf / vca	
MIDI VOLUME	off / vca (d)	

Sources can control more than one destination at once, but a destination can only be controlled by one source at a time. Thus, if velocity is currently controlling VCF and then you switch aftertouch to VCF, velocity will then control nothing until re-assigned.

THESE KEY PRESSES ARE MADE ON THE CONNECTED MIDI KEYBOARD, not on the CS-50/60 itself

C	Receive channel	1 [Bottom C] MIDI note number 36	
Db	" "	2	
D	" "	3	
Eb	" "	4	
E	" "	5	
F	" "	6	
Gb	" "	7	
G	" "	8	Selecting a receive channel
Ab	" "	9	will automatically put the
A	" "	10	MIDI into omni off mode.
Bb	" "	11	That is, it will receive on
B	" "	12	the selected channel only.
C	" "	13	
Db	" "	14	
D	" "	15	
Eb	" "	16	
E	Omni on mode	(default)	
F	Not Used - - -		
Gb	" "		
G	" "		
Ab	" "		
A	" "		
Bb	" "		
B	" "		
C	" "		
Db	" "		
D	" "		
Eb	" "		
E	" "		
F	" "		
Gb	" "		
G	" "		
Ab	" "		
A	" "		
Bb	" "		
B	" "		
C	" "		
Db	" "		
D	" "		
Eb	“ “		
E	" "		
F	p.bend & mod wheel	OFF	
Gb	p.bend	ON (default)	
G	mod wheel	ON (default)	
Ab	controller Y	ignored (see page 3 re controller Y)	
A	"	vcf	
Bb	"	unused (default)	
B	controller X	ignored (see page 3 re controller X)	
C	"	vcf (default)	
Db	"	unused	
D	MONO aftertouch	ignored	
Eb	"	modulation (default)	
E	"	p.bend (up only)	
F	"	vcf	
Gb	"	unused	
G	velocity	ignored (default)	
Ab	"	vcf	
A	"	vca	
Bb	MIDI volume	ignored	
B	"	vca (default)	
C	ENTER key	Press and release. [Top C] MIDI note number 96	

NOTES

1) Controller X can be any MIDI controller but its default is CC#16. After giving the red push button one short press to enter SET-UP mode, operate the required MIDI controller before pressing the C or Db key that will assign it to 'VCF' or 'unused'. If you do not operate a controller before pressing the C or Db key, then controller X will respond to MIDI controller 16 - that is General purpose controller 1 (10 hexadecimal) 0

2) Controller Y can be any MIDI controller but its default is CC#17. After giving the red push button one short press to enter SET-UP mode, operate the required MIDI controller before pressing the A or Bb key that will assign it to 'VCF' or 'unused'. If you do not operate a controller before pressing the A or Bb key, then controller Y will respond to MIDI controller 17 - that is General purpose controller 2 (11 hexadecimal)

3) Controller X/Y will take priority over other control messages, so if controller X/Y is the mod wheel, mod wheel messages will operate whatever controller X/Y is currently assigned to, instead of operating modulation.

4) Receive channel and omni-on setting will return you directly to playing mode, all other keys will let you stay in SET-UP mode until you press the ENTER key (Top C)

5) The ENTER key (Top C) also resets all controllers to their default values - off in most cases - on for volume - centre for pitch bender.

6) After giving the red push button one short press to enter set-up mode, the first assignment that you make for any given source (after-touch for example) will cancel all other destinations currently assigned to that source - if you want to make multiple assignments, you will have to do this in the same set-up session, in other words, before you press top C. For example, irrespective of what aftertouch was previously assigned to, pressing F (and release) will assign it to VCF only - to make aftertouch also bend pitch, you will have to press E (and release) before pressing the top C which will ENTER the information and store it in non-volatile memory.
OTHER SET-UPS WILL REMAIN UNALTERED UNLESS SPECIFICALLY CHANGED

7) Control change commands recognised - (numbers in decimal)

121 reset all controllers	01 modulation wheel
123 all notes off	07 Main volume
124 omni mode off (always poly)	64 sustain pedal
125 omni mode on (always poly)	65 portamento
126 (mono mode) = all notes off	94 select transpose mode
127 (poly mode) = all notes off	95 select set-up mode

nnn Controller X (user defined where nnn = any controller) - Controller X default = CC#16
nnn Controller Y (user defined where nnn = any controller) - Controller Y default = CC#17

8) Other commands recognised - (numbers in hexadecimal)

8nH notes off	9nH notes on & velocity
BnH control change (see above)	CnH program change
DnH channel pressure (aftertouch)	EnH pitch-bend change
FEH active sensing	

MIDI CONTROL OF RED PUSH BUTTON

The red push button can be "pressed" for making channel & routing assignments via MIDI as MIDI switch number 95 (5Fh) for regular program mode or 94 (5Eh) for transpose mode. The selection of the push button is enough, it doesn't matter what the data value is.

In hexadecimal BX - 5F - 00 = program mode
In hexadecimal BX - 5E - 00 = transpose mode

Where X is the current MIDI channel.

[N.B. whilst in program/transpose modes the MIDI is in omni on mode]

MIDI CONNECTORS

MIDI IN should be connected to a MIDI OUT or a MIDI THRU similarly MIDI OUT should be connected only to a MIDI IN and a MIDI THRU should also be connected only to a MIDI IN.

MIDI OUT is the signal from the synthesizer (or drum machine etc.) that is to be sent to another instrument. MIDI IN is a received signal that contains MIDI information from another synth, and MIDI THRU is an exact copy of information arriving at the MIDI IN socket. This allows several instruments to be connected together.

If you want to wire your own MIDI cables the following information may be useful.
1) Although a 5 pin connector is used, only two connections plus an
earth connection are required.
2) If you look at the din plug from the wiring side you will see that the pins are numbered. From left to right (or clockwise) these are 1 - 4 - 2 - 5 - 3.
3) The pins numbered 1 & 3 are not used.
4) The screen (earth) is connected to pin 2 (centre pin)
5) Pin 4 of one plug should be connected to pin 4 of the other
6) Pin 5 of one plug should be connected to pin 5 of the other
7) You should now have a working MIDI lead
8) It is preferable to label one end of the cable MIDI IN & the other end MIDI OUT, to avoid confusion.

WARRANTY

All Kenton MIDI Kits come with a 12 month (from purchase date) back to base warranty, (i.e. customer must arrange and pay for carriage to and from Kenton Electronics Ltd).

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