

KENTON

User instructions for Kenton MIDI retrofit for **OBERHEIM OB-X / OB-Xa / OB-8**

*These instructions are only for Oberheim OB-series MIDI retrofit kits produced after 1st March 2006
Firmware OBXX5100 or later*

N.B. Different instructions apply to earlier Kenton Oberheim OB-series MIDI retrofit kits.

USING THE MIDI INTERFACE

When you turn on the synthesizer for the first time, you will be in omni-off mode channel 1 for receive and also channel 1 for transmit - See the following pages for other factory default settings. When you select a receive channel, this will be stored in memory and will be remembered for when you subsequently turn on the synth - all parameters listed on the next page are stored.

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.

RED PUSH BUTTON

Three modes are available by pushing the red push button during normal playing mode. Before you press the red button however, make sure that no keys are pressed on either the Oberheim or the remote MIDI keyboard otherwise the results may be unpredictable. The key presses can be entered on the Oberheim's own keyboard, or from the remote MIDI keyboard.

1) PROGRAM CHANGE MODE

For sending program changes from the keyboard. Press the red push button once only (short press – then release), any key then selects a program change which it sends through the MIDI Out. When the key is released, you are then automatically returned to playing mode. For example a short press on the red push button followed by bottom C will send program change #0 whereas top C will send #60. (Nothing is stored in non-volatile memory after this operation)

2) SET-UP MODE

For setting MIDI channels and assignments. Give the red push button two short presses (half a second each) - then release. Follow this with a key or sequence of keys as detailed on page 2. After making a MIDI channel assignment, 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. all set-ups are stored in non volatile memory).

2) TRANSPOSE MODE / ARPEGGIO CLOCK DIVIDE SETTING MODE

Press and hold the red push button for about four seconds - then release. Middle C will sound on the synth and continue to sound until you press a key. The key that you press on the remote keyboard 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 (where middle C = no transposition) . Note that transpose mode cannot be entered from set-up mode. (N.B. the transposition will be stored in non volatile memory).

The bottom four octaves on a 61 note remote keyboard are used to set "transpose" but the top octave will set the arpeggio divide (OB-8 only)

G	= Set triplet on (can be used with any of below)	Bb	= Clock divided by 2 (half speed)
Ab	= Clock divided by 8 (eighth speed)	B	= Clock normal - no divide (full speed)
A	= Clock divided by 4 (quarter speed)	TOP C	= Enter - return to normal playing & store new setting

For more information on the operation of the arpeggio clock with MIDI, see note #11 further on.

Function of keys during set-up mode:

C	Receive channel	1 (default)	[Bottom C - MIDI note #36]
Db	" "	2	
D	" "	3	
Eb	" "	4	
E	" "	5	
F	" "	6	
Gb	" "	7	
G	" "	8	
Ab	" "	9	
A	" "	10	
Bb	" "	11	
B	" "	12	
C	" "	13	
Db	" "	14	
D	" "	15	
Eb	" "	16	
E	Receive notes	OFF	
F	Transmit channel	1 (default)	
Gb	" "	2	The transmit channel can be
G	" "	3	changed independently of the
Ab	" "	4	of the receive channel, and
A	" "	5	can be set even during omni
Bb	" "	6	on mode.
B	" "	7	
C	" "	8	[Middle C - MIDI note #60]
Db	" "	9	
D	" "	10	
Eb	" "	11	
E	" "	12	
F	" "	13	
Gb	" "	14	
G	" "	15	
Ab	" "	16	
A	Transmit Key on velocity	decrease	
Bb	" " " "	normal (default)	
B	" " " "	increase	
C	Transmit Key off velocity	decrease	
Db	" " " "	normal (default)	
D	" " " "	increase	
Eb	program change	ON (default)	
E	" "	OFF	
F	local keyboard control	ON (default)	
Gb	" "	OFF	
G	not used		
Ab	not used		
A	Controller Source Select	Pitch-Bend Wheel	
Bb	Controller Source Select	Mod Wheel (cc#1)	
B	Controller Source Select	Aftertouch	
C	Controller Source Select	Velocity	
Db	Controller Source Select	Controller X (assignable – default cc#16)	
D	Controller Source Select	Controller Y (assignable – default cc#17)	
Eb	Controller Source Select	MIDI Volume (cc#7)	
E	Destination ON	Pitch-Bend	
F	Destination ON	Modulation	
Gb	Destination ON	VCF (Filter)	
G	Destination ON	not used	
Ab	Destination ON	VCA (Volume)	
A	Destination ON	not used	
Bb	Destinations OFF	all destinations OFF for the currently selected controller source	
B	Reset all Sources to their default Destinations (see next page for defaults)		
C	ENTER key	Press & release to store & return to play mode	[Top C - MIDI note #96]

ASSIGNING MIDI CONTROL SOURCES TO DESTINATIONS

SOURCE	DEFAULT DESTINATION
Pitch-bend wheel	Pitch-bend
Modulation wheel (cc#1)	Modulation
Aftertouch	Modulation
Velocity	----
Controller X (def cc#16)	VCF / Filter cutoff
Controller Y (def cc#17)	VCF / Filter cutoff
MIDI Volume (cc#7)	VCA / Volume

- 1) To assign sources to destinations,
 - a) press the red push button twice to enter set-up mode
 - b) select a source by using one of the keys A to Eb (see table on previous page)
 - c) [optionally if the source is Controller X or Y, you can assign a controller to it now – see below]
 - d) select destinations OFF to de-select previous assignments for this source
 - e) select destinations ON to make new assignments for this source
 - f) either hit Top C to enter/exit, or select a new source and make assignments for that [go back to b]

- 2) Controllers X & Y can be assigned to any continuous controller (cc). By default controller X is assigned to cc#16, and controller Y is assigned to cc#17. To re-assign either of them, first press the red push button twice to enter SET-UP mode. Next press the Db or D key (see table on previous page) to select the X or Y controller source, then send a MIDI message of the required continuous controller. Then either press top C to enter / exit, or use some of the destination keys to assign what this controller will control.
 - For example to set controller Y to respond to cc#4, press the red button twice, press D, send a cc#4 message to the Oberheim from another synth or MIDI controller, then press top C to enter /exit. [or select another function]

- 3) Sources can have multiple destinations, so for example controller X could be assigned to control both filter and volume at the same time, should you want it to.

- 4) Where pitch-bend wheel is the source, only the bend wheel UP will affect destinations other than pitch-bend. Also where pitch-bend is the destination, sources other than pitch-bend wheel will only bend the pitch UP.

- 5) Receive channel 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).

- 6) The ENTER key (Top C) also performs a “reset all controllers” function - OFF in most cases, but ON for volume, and centre for pitch bender.

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

- 8) During set-up mode, the retrofit will receive on ALL MIDI channels.

- 9) List of continuous controllers (cc) recognised - (numbers in decimal)

01 modulation wheel	
07 Main volume	
64 sustain pedal	
121 reset all controllers	123 all notes off
124 omni mode off (always poly)	125 omni mode on (always poly)
126 (mono mode) = all notes off	127 (poly mode) = all notes off
nnn Controller X (user defined where nnn = any controller) (default = cc#16)	
nnn Controller Y (user defined where nnn = any controller) (default = cc#17)	

- 10) List of other commands recognised - (numbers in hexadecimal)

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

11) Using arpeggio clock (OB-8 only). With the rear panel toggle switch in the UP position, the OB-8 will function as normal. With the switch in the DOWN position the OB-8 will use MIDI clock. You may need to set the divide rate – see the first page. If you want to use the external jack input for clock, you should set the switch in the up position.

To select MIDI clock merely set the rear panel switch to the DOWN position and the arpeggiator will take its tempo from MIDI. Note that if the switch is set to MIDI and there is no MIDI clock present, the OB-8 will not play, if it is in arpeggio mode.

To change the divide rate, press the push button and hold in for about four seconds, until a note sounds, (this is transpose mode) the bottom four octaves are used to set "transpose" but the top octave will set the arpeggio divide.

TOP C = ENTER - Return to normal playing and store
B = Clock normal - no divide (full speed)
Bb = Clock divided by 2 (half speed)
A = Clock divided by 4 (quarter speed)
Ab = Clock divided by 8 (eighth speed)
G = Set triplet on (can be used with any of above)

You will need to press TOP C (Enter) after any selection.

If you want to use Triplet, you will need to set this after the divide ratio, as pressing any of the divide ratios cancels Triplet.

GENERAL INFORMATION ABOUT MIDI CONNECTIONS

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

MIDI OUT (if fitted) 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). Note that kits should be fitted as soon as possible after purchase, as the retrofit kits are in a continuous state of development.

The logo for Kenton Electronics, featuring the word "KENTON" in a bold, white, sans-serif font centered within a solid orange rectangular background.

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