Evolution UC16
USB MIDI Controller with 16 rotary programmable controllers, 25 Memory Banks and USB

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EVOLUTION UC16 USB MIDI CONTROLLER MANUAL

1. POWER SUPPLY

There are two methods of powering the UC16. **Only use one method at one time**

AC Power

You can also use an AC adapter (not included) with the following specification: 9-12V DC output, 250-300mA, centre positive.

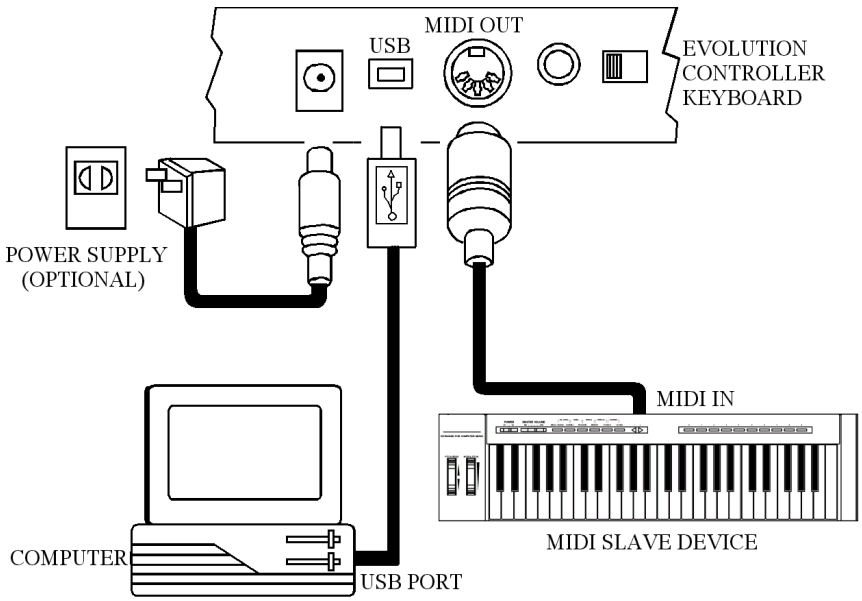
Connect to the USB port on your computer. The UC16 is powered from USB.

Note: Do not leave the adapter plugged in for long periods of time if the unit is not in use.

2. Preparation

Connect the unit with other MIDI equipment you may have:

The UC16 will act as a MIDI interface for any other MIDI equipment you may have. Note however, that it will only act as a MIDI THRU device. It will receive data from the USB port of the computer and pass this data on to the connected device. It can not transmit data from a connected device to the computer.



Turn on the POWER switch.
Turn all other equipment on.

3. Assignable Rotary controllers

There are 16 assignable controllers selected by the CONTROL SELECT & CONTROL ASSIGN functions.

'*Assignable Controllers'* refers to any of the 16 assignable Knobs.

The basic operation is:-
Select the controller by moving it. Alternatively, you can press the CONTROL SELECT button and then type in the number using the keypad or '+', '-' buttons. Press the CONTROL ASSIGN button and enter the new number using the keypad.

To change one of the assignable controllers, the UC16 uses the following method:

Press the CONTROL SELECT button and release. Alternatively simply move the rotary control. The number of the presently selected MIDI controller will flash.
Select a controller by moving any one of the assignable controllers, the numeric keypad or the +/- keys.
The LED display will show the new MIDI controller number assignment.
Repeat this process to see the *controller number assignment* (0-132) for any Knob (1-16), by moving the relevant controller or by typing a new number.
If no keys are pressed or any of the assignable controllers moved, the LED display stops flashing after 3 seconds and returns to normal operation.

Press the CONTROL ASSIGN button & release.
The number entered at this point will be assigned to the last selected controller.
The numeric entry uses the standard data entry system. (see section on Entering Numbers)
If a complete number is entered the display stops flashing and the new assignment is stored.
If the Inc/Dec keys are used, the revised value is shown on the LED display and the flashing time-out is reset.
Once a controller has been assigned the current knob position should be sent out.
This ensures that when the controller if first moved it does not trigger a large jump from it's previous setting.

During the data entry stage while the LED display is flashing, the Knobs, *do not function.*

4. Entering Numbers

When any number is entered it adheres to the following rules:-

Increment/Decrement Keys

Initially the LED display starts flashing.
The value displayed can be incremented/decremented using the +/- keys.
Pressing both + & - should call up the default value for that parameter.
The LED display shows the new value.
The new value is sent out except for the CONTROL ASSIGN which sends data when the display stops flashing)
When the display stops flashing the keyboard returns to normal operation.

Numeric Keys

Initially the LED display starts flashing.
A numeric value can be typed in using the numbers 0-9.
As each key is pressed the display continues to flash, the time-out value is reset.
When a *complete number** has been entered the display stops flashing and the value is selected.
Alternatively, if no key is pressed and the display stops flashing the number on the display is selected.
The update routine is triggered, so that the new value is sent out.
When the display stops flashing the keyboard returns to normal operation.

* The following table shows how many keys are required to enter a complete number:-

	1 key	**2 keys**	**3 keys**
Channel	**2-9**	**01, 10-16**	
Memory	**0-9**		
Control Select	**2-9**	**01,10-14**	
Control Assign		**14-99**	**000-013, 100-132**

5. Snap Shot

When both SNAP SHOT keys are pressed the UC-16 sends out the settings for all of the Assignable Controllers. The settings will be sent out on whichever channel each rotary dial is assigned to (see channel assignment later). This feature lets you record the settings of the Knobs into your sequencer. It is handy for setting up parameters in a song. Set the UC16 to all parameter levels you desire, engage record mode on your sequencer and press the SNAP SHOT buttons.

6. Memory banks and Presets

There are 25 memory banks in total. Memory banks 1-4 are accessible using the Preset buttons 1-4 respectively. This allows you to store settings you use a lot and makes for easy access to them. By default the 4 presets are:

1. Propellerhead's Reason mixer
2. Steinberg's Halion sampler
3. Native Instruments FM7
4. General GM/GS/XG preset.

The rest of the memory banks are accessible by pressing the RECALL button, then using either the +/- buttons or the numeric keys to type in the number of the memory bank you want (1-25). By default the remaining presets are:

5. Native Instruments B4
6. Native Instruments Pro-52
7. Steinberg Model-E
8. Waldorf Attack
9. Waldorf PPG wave 2V
10. Propellerhead's Rebirth Master
11. Propellerhead's Rebirth Rhythm section
12. Reason Subtractor
13. Reason Dr. Rex
14. Reason NN-19
15. AAS Lounge Lizard
16. Native Instruments Traktor DJ

17. cc numbers 40 – 55.
18. cc numbers 75 – 90
19. cc numbers 102 – 117
20. Volume (cc7) on channels 1 – 16
21. Pan (cc7) on channels 1 – 16

Bank numbers 22 – 25 have the same default as bank number 4.

For a fully detailed list of the memory bank presets please look at the UC16 Memory bank definitions document bundled with your UC16, or available to download from our website.

It is also possible to store your own presets.
To save the current settings for all 16 controllers press the MEMORY buttons (CHANNEL ASSIGN and RECALL), then type in the number of the memory bank you want (1-25). Alternatively, you can use the '+' and '-' buttons.

Each memory bank will store the current Program number and channel transmit number for all of the 16 controllers.

If you make a mess of things, don't worry – you can always get the factory presets back by holding down the '+' and '-' keys on power up.

7. Setting the MIDI Transmit Channel

The MIDI channel can be set for each rotary controller individually. To do this press the CHANNEL ASSIGN button. The channel the currently selected rotary dial is assigned to will flash on the LED display. For example, if the last selected dial is currently assigned to channel 1, the LED display will flash ‘c1’. Increment or decrement the channel using the numeric keypad, or the ‘+’ and ‘-‘ buttons.

8. MIDI OUT FROM USB

The MIDI output connector is normally used to send MIDI data from the UC16. If the UC16 is connected to a computer using USB the MIDI Out can also be used to send data received from USB.

Pressing both MIDI OUT FROM USB buttons flashes the current setting on the LCD display.
The +/- keys can be used to alter the current setting. + selects YES, - selects NO.
Pressing both + and - calls up the default setting which is NO.
When ‘NO’ is selected the MIDI Out sends the data from the UC16.
When YES is selected the MIDI Out sends the MIDI data received from USB.

The status of MIDI OUT FROM USB will be saved in non-volatile memory and restored when the UC16 is switched on again. The factory default is set to NO.

9. SPECIFICATIONS

1. Control: Switches: (CHANNEL ASSIGN, MEMORY, CONTROL ASSIGN, CONTROL SELECT, POWER ON/OFF, Numeric Keys (0-9), PRESET BUTTONS 1-4, + AND - KEYS)
3. Rotary Controls: 16 rotary controls with assignable controller and channel values
5. Memory storage - non volatile, 25 banks, 4 fast presets
6. Display: 3 digit LED
7. Jack: DC IN (DC 9V), MIDI OUT, USB
8. Dimension: 29.6cmX12.5cmX4.8cm
9. Weight: 0.75Kg
Note: Specifications are subject to change without prior notice.

APPENDIX A

MIDI IMPLEMENTATION CHART

Function	Transmitted	Received	Remarks
Basic :Default Channel:Changed	1-16 1-16		
:Default Mode :Messages :Altered	--------- X *********		
Note Number:True Voice	0-127 *********		
Velocity: Note ON : Note OFF	X X		
After :Key's Touch :Ch's	X •		
Pitch Bend	X		
0,32 1 Control 6 Change 7 64 1-31 33-95 102-121	• • • 0 0 • • •		Bank select Modulation Data Entry Volume Hold 1 Mod Wheel Assign
Program Change:True Number	0-127 *********		
System Exclusive	X		
:Song Position Common:Song Select :Tune	X X X		
System :Clock Exclusive:Commands	X X		
Aux :Local ON/OFF Messages:All Notes OFF :Active Sense :Reset	X X 0 X		
Notes:	• : Can be	set to 0	or X

For support email support@evolution.co.uk
Latest drivers and information at www.evolution.co.uk
Join the Evolution User's group at Yahoo groups, www.yahoogroups.com/group/evolution-users
or e-mail to this address: evolution-users-subscribe@yahoogroups.com

APPENDIX B

STANDARD CONTROLLER NUMBERS

No.	Controller	No.	Controller	No.	Controller
00	Bank Select	43	Expression LSB	86	Controller 86
01	Modulation	44	Controller 44	87	Controller 87
02	Breath Control	45	Controller 45	88	Controller 88
03	Controller 3	46	Controller 46	89	Controller 89
04	Foot Control	47	Controller 47	90	Controller 90
05	Porta Time	48	Gen Purpose 1 LSB	91	Reverb Depth
06	Data Entry	49	Gen Purpose 2 LSB	92	Tremelo Depth
07	Channel Volume	50	Gen Purpose 3 LSB	93	Chorus Depth
08	Balance	51	Gen Purpose 4 LSB	94	Celeste (De-tune)
09	Controller 9	52	Controller 52	95	Phaser Depth
10	Pan	53	Controller 53	96	Data Increment
11	Expression	54	Controller 54	97	Data Decrement
12	Effects Controller 1	55	Controller 55	98	Non-Reg Param LSB
13	Effects Controller 2	56	Controller 56	99	Non-Reg Param MSB
14	Controller 14	57	Controller 57	100	Reg Param LSB
15	Controller 15	58	Controller 58	101	Reg Param MSB
16	Gen Purpose 1	59	Controller 59	102	Controller 102
17	Gen Purpose 2	60	Controller 60	103	Controller 103
18	Gen Purpose 3	61	Controller 61	104	Controller 104
19	Gen Purpose 4	62	Controller 62	105	Controller 105
20	Controller 20	63	Controller 63	106	Controller 106
21	Controller 21	64	Sustain Pedal	107	Controller 107
22	Controller 22	65	Portamento	108	Controller 108
23	Controller 23	66	Sostenuto	109	Controller 109
24	Controller 24	67	Soft Pedal	110	Controller 110
25	Controller 25	68	Legato Pedal	111	Controller 111
26	Controller 26	69	Hold 2	112	Controller 112
27	Controller 27	70	Sound Variation	113	Controller 113
28	Controller 28	71	Resonance	114	Controller 114
29	Controller 29	72	Release Time	115	Controller 115
30	Controller 30	73	Attack Time	116	Controller 116
31	Controller 31	74	Cutoff Frequency	117	Controller 117
32	Bank Select LSB	75	Controller 75	118	Controller 118
33	Modulation LSB	76	Controller 76	119	Controller 119
34	Breath Control LSB	77	Controller 77		
35	Controller 35	78	Controller 78	**Channel Mode Messages**	
36	Foot Control LSB	79	Controller 79	120	All Sound off
37	Porta Time LSB	80	Gen Purpose 5	121	Reset all Controllers
38	Data Entry LSB	81	Gen Purpose 6	122	Local Control
39	Channel Volume LSB	82	Gen Purpose 7	123	All Notes Off
40	Balance LSB	83	Gen Purpose 8	124	Omni Off
41	Controller 41	84	Portamento Control	125	Omni On
42	Pan LSB	85	Controller 85	126	Mono On (Poly Off)
				127	Poly On (Mono Off)