MOOG ONE MANUAL ADDENDUM

MIDI LEARN

MOOG ONE MIDI LEARN ADDENDUM

New MIDI functionality has been added to Moog One in this Firmware release. Specifically, new CC, NRPN, and MIDI MAP options are available in the MIDI CONTROL OUTPUT parameter. In addition, a LEARN MIDI CC function and an EDIT MIDI MAPPING feature have been added to the Moog One SETTINGS page under the MIDI CONTROL category. Also, a complete list of all current MIDI NRPN (Non-Registered Parameter Numbers) available for Moog One is included in this addendum.

MIDI CONTROL OUTPUT

This parameter specifies how Moog One Front Panel controls are expressed via outgoing MIDI. There are three options.

CC: This option sends MIDI CC numbers when certain Front Panel controls are operated. This is the default setting used by Moog One since Version 1.0.

MIDI MAP: This option sends MIDI CC numbers as specified by the assignments made using the MIDI CC MAP, available using the LEARN MIDI CC and EDIT MIDI MAPPING features.

NRPN (Non-Registered Parameter Numbers): When this option is selected, operating the Front Panel controls sends MIDI data as specified by the NRPN table included in this document.

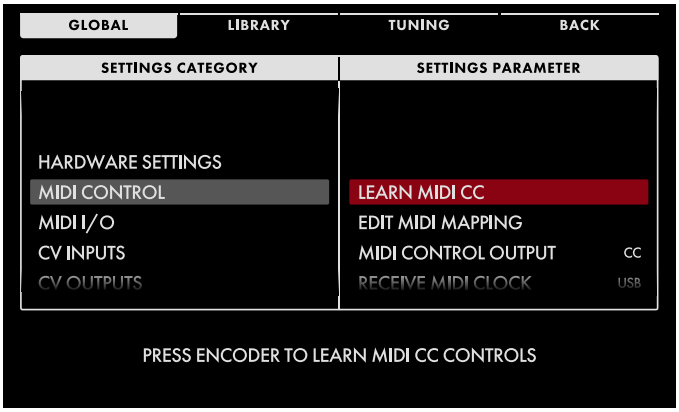
NOTE: *When NRPN is selected, the* ***ALWAYS SEND NRPN NUM*** *option will appear in the SETTINGS PARAMETER menu. When OFF, NRPN messages are sent according to the MIDI specification, where messages are sent for the last NRPN number that was selected. This reduces message traffic. When ON, the NRPN number is always sent before the NRPN data message. Some products require this to function correctly. Using this option makes Moog One NRPN output work with all products, but at the expense of increased MIDI message traffic.*

Press the **SETTINGS** button to open the Settings screen to the Global page. (If, for some reason, the Global page is not open, press the GLOBAL Soft Button at the top left corner of the screen.) Rotate the Master Encoder to highlight the MIDI CONTROL category, and press down on the Master Encoder to select this category. Now rotate the Master Encoder to highlight the **MIDI CONTROL OUTPUT** parameter, and use the **MIDI CONTROL OUTPUT** Soft Knob to scroll through these three available options. The selected option will also appear next to the **MIDI CONTROL OUTPUT** parameter in the **SETTINGS PARAMETER** menu above.

NOTE: *MIDI IN messages are received and obey the MIDI CC MAP assignments; these assignments override the default MIDI CC used by Moog One. The NRPN input always works and is never overridden.*

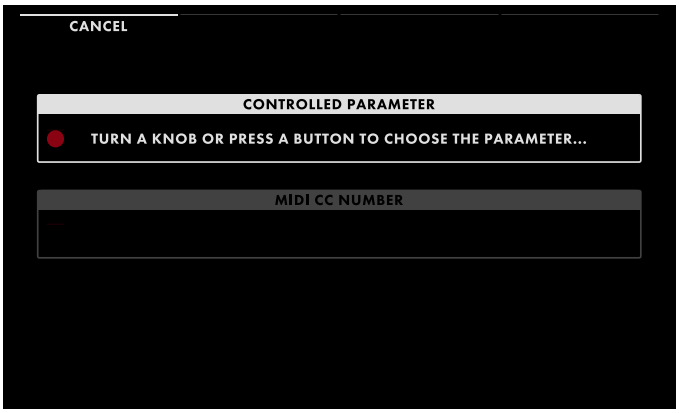
LEARN MIDI CC

This feature allows for fast and accurate mapping of MIDI CC messages to specific controls on the Front Panel. Basically, once a control is selected, the next MIDI CC message received will be mapped to that control. In this way you can quickly send and assign MIDI CC messages from a hardware controller, a DAW program, etc.



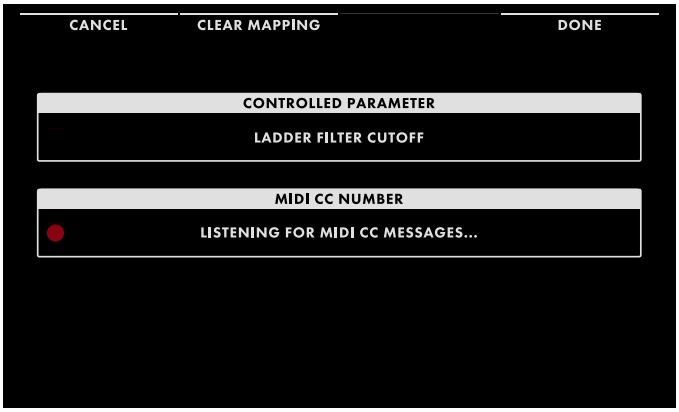
ACCESSING THE LEARN MIDI CC FEATURE:

Press the **SETTINGS** button to open the Settings screen to the Global page. Rotate the Master Encoder to highlight the MIDI CONTROL category, and press down on the Master Encoder to select this category. Now rotate the Master Encoder to highlight the LEARN MIDI CC feature, and press down on the Master Encoder to enter the LEARN MIDI CC dialog box.



SELECTING A CONTROLLED PARAMETER:

The Controlled Parameter window is now active. At this point, a blinking red dot will appear in the far left of this window, indicating Moog One is waiting for a Front Panel control to be selected. Follow the onscreen prompt, and operate the Front Panel control that you wish to operate via a MIDI CC.

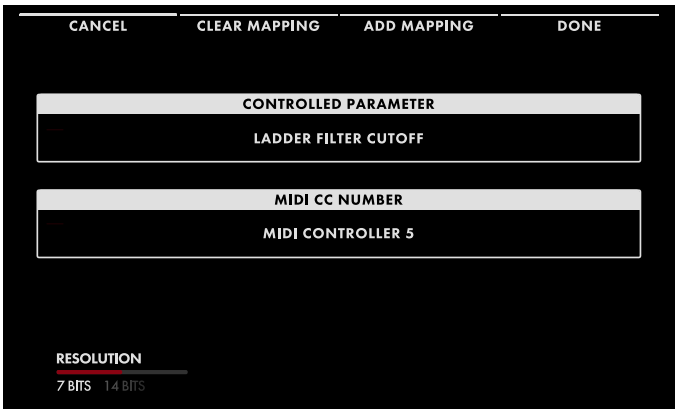


ASSIGNING A MIDI CC NUMBER:

Once a Front Panel control has been selected, (this example shows the **LADDER FILTER CUTOFF** knob as having been selected) the display will change to show the MIDI CC NUMBER window as active. The blinking red dot now indicates that Moog One is listening for an incoming MIDI CC number to assign to this control.

NOTE: *14-bit MIDI CC support is automatically detected, but can be set to 7 with the* ***RESOLUTION*** *soft knob.*

LEARN MIDI CC *(Continued)*



LEARN MIDI CC OPTIONS:
The MIDI CC Number shown in the screen is now assigned to the selected control, as shown. The four Soft Buttons at the top of the screen, and the Soft Knob at the bottom provide additional options.

CANCEL: Pressing this Soft Button discards any edits or assignment that were made in this session, and exits the LEARN MIDI CC feature.

CLEAR MAPPING: Pressing this Soft Button discards any edits or assignment that were made in this session. The LEARN MIDI CC feature remains active so you can start over.

ADD MAPPING: Pressing this Soft Button places any edits or assignment that were made in this session into a buffer, and returns the LEARN MIDI CC display to the CONTROLLED PARAMETER window so additional control assignments may be made.

DONE: Pressing this Soft Button saves any edits or assignment that were made in this session, and exits the LEARN MIDI CC feature.

RESOLUTION: Turning this Soft Knob selects between 7 and 14-bit MIDI resolution for the currently selected MIDI CC.

OTHER LEARN MIDI CC MESSAGES:
When using the LEARN MIDI CC feature, if you select a Front Panel control that has already been mapped using the LEARN MIDI CC feature, the complete mapping scheme will be shown. In this case, you can use the CLEAR MAPPING Soft Button to remove the MIDI CC assignment for that control. In addition, you may encounter one of these messages.

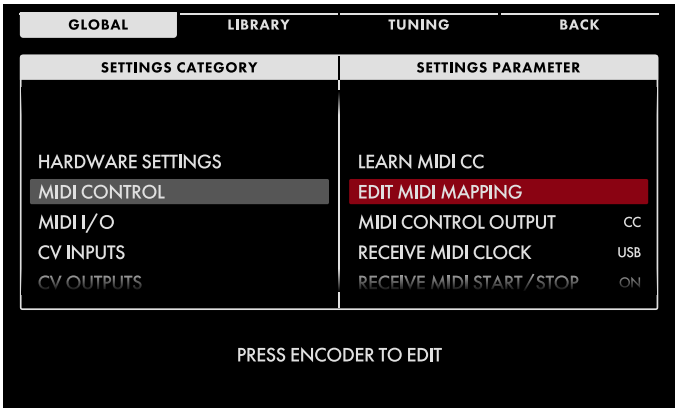
UNSUPPORTED PARAMETER FOR CC CONTROL: The Front Panel control selected does not support MIDI CC at this time.

RESERVED CONTROLLER NUMBER X: The MIDI CC number selected (indicated by X) is reserved for a different function. The MIDI CC NUMBER dialog box will remain active so a different MIDI CC number may be chosen.

EDIT MIDI CC

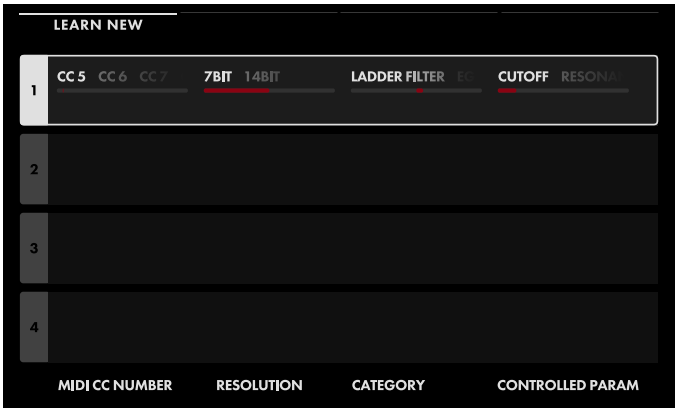
EDIT MIDI MAPPING

Opening the EDIT MIDI MAPPING feature allows you to quickly see and edit any and all of the MIDI CC control mappings, including those created using the LEARN MIDI CC feature. This feature allows for fast and accurate editing of all MIDI CC assignments.



ACCESSING THE EDIT MIDI MAPPING FEATURE:

Press the **SETTINGS** button to open the Settings screen to the Global page. (If the Global page is not open, press the GLOBAL Soft Button at the top left corner of the screen.) Rotate the Master Encoder to highlight the MIDI CONTROL category, and press down on the Master Encoder to select this category. Now rotate the Master Encoder to highlight the EDIT MIDI MAPPING feature, and press down on the Master Encoder to enter the EDIT MIDI MAPPING screen.



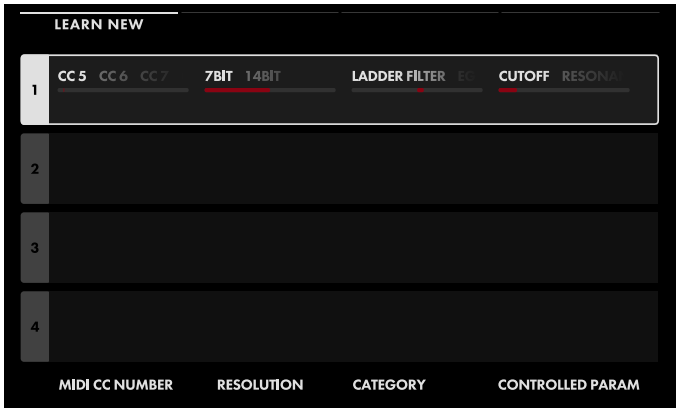
EDITING THE MIDI CC MAP ASSIGNMENTS:

The MIDI CC MAP screen is nearly identical to the Modulation Matrix screen, using the same concepts of lanes, and of column with values controlled by their corresponding Soft Knobs. The difference here is that the MIDI CC Mappings do not require switching to a second row to edit the data. Here, you can freely edit the MIDI CC NUMBER, RESOLUTION, CATEGORY, and CONTROLLED PARAM (Parameter) using the corresponding Soft Knobs at the bottom of the screen.

NOTE: *If a MIDI CC number that has been previously mapped to a different control is selected, then the previous mapping will become unassigned after 500ms. This built-in delay allows the smooth scrolling through all MIDI CC NUMBER values without causing any change in status.*

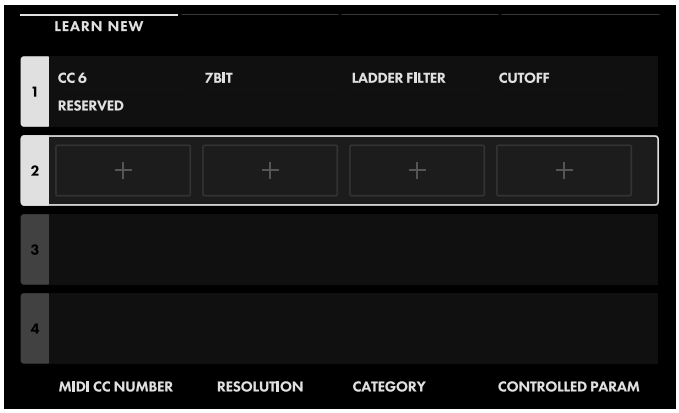
NOTE: *Conversely, if a Parameter has been previously mapped to a different MIDI CC number, then the previous mapping will become unassigned after 500ms. This built-in delay allows the smooth scrolling through all available CONTROLLED PARAM values without causing any change in status.*

MIDI CC MAP ASSIGNMENTS



RESERVED MIDI CC MAP ASSIGNMENTS:

Certain MIDI CC Numbers are reserved for a specific function. When a reserved MIDI CC number is selected, it will be indicated by the word RESERVED in the second row of the lane, and it cannot be edited.



ADDING AND DELETING MIDI CC MAP ASSIGNMENTS:

Just as with the Modulation Matrix screen, rotating the Master Encoder will highlight different lanes (or slots). To add a new MIDI CC assignment to the current MIDI CC MAP, rotate the Master encoder to highlight the first available empty lane, and press down on the Master Encoder to make that lane active and available for editing. Create a new MIDI CC MAP assignment using the four Soft Knobs at the bottom of the screen, or press the LEARN NEW Soft Button at the top left corner of the screen to return to the LEARN MIDI CC feature and create a new assignment using that method. To completely remove a previously assigned MIDI CC MAP item, highlight it using the Master Encoder, and use the **DELETE** button to remove that lane; all subsequent lanes will be renumbered.

NRPN (NON-REGISTERED PARAMETER NUMBERS)

	SYNTH 1	SYNTH 2	SYNTH 3	OPTIONS OR CONTINUOUS
LFO 1				
WAVEFORM	451 (3, 67)	4291 (33, 67)	8131 (63, 67)	TRI (0-4095) PULSE (4096-8191) SAW (8192-12287) S&H (12288-16383)
RATE FREE	463 (3, 79)	4303 (33, 79)	8143 (63, 79)	
RATE SYNC'D	464 (3, 80)	4304 (33, 80)	8144 (63, 80)	64 (0-1365) 32 (1366-2730) 16 (2731-4095) 8 (4096-5460) 4 (5461-6826) 2 (6827-8191) 1 (8192-9556) 1/2 (9557-10921) 1/4 (10922-12287) 1/8 (12288-13652) 1/16 (13653-15017) 1/32 (15018-16382) 1/64 (16383)
LFO 2				
WAVEFORM	501 (3, 117)	4341 (33, 117)	8181 (63, 117)	TRI (0-4095) PULSE (4096-8191) SAW (8192-12287) S&H (12288-16383)
RATE FREE	513 (4, 1)	4353 (34, 1)	8193 (64, 1)	
RATE SYNC'D	514 (4, 2)	4354 (34, 2)	8194 (64, 2)	64 (0-1365) 32 (1366-2730) 16 (2731-4095) 8 (4096-5460) 4 (5461-6826) 2 (6827-8191) 1 (8192-9556) 1/2 (9557-10921) 1/4 (10922-12287) 1/8 (12288-13652) 1/16 (13653-15017) 1/32 (15018-16382) 1/64 (16383)

NRPN *(Continued)*

	SYNTH 1	SYNTH 2	SYNTH 3	OPTIONS OR CONTINUOUS
LFO 3				
WAVEFORM	551 (4, 39)	4391 (34, 39)	8231 (64, 39)	TRI (0-4095) PULSE (4096-8191) SAW (8192-12287) S&H (12288-16383)
RATE FREE	563 (4, 51)	4403 (34, 51)	8243 (64, 51)	
RATE SYNC'D	564 (4, 52)	4404 (34, 52)	8244 (64, 52)	64 (0-1365) 32 (1366-2730) 16 (2731-4095) 8 (4096-5460) 4 (5461-6826) 2 (6827-8191) 1 (8192-9556) 1/2 (9557-10921) 1/4 (10922-12287) 1/8 (12288-13652) 1/16 (13653-15017) 1/32 (15018-16382) 1/64 (16383)
LFO 4				
WAVEFORM	601 (4, 89)	4441 (34, 89)	8281 (64, 89)	TRI (0-4095) PULSE (4096-8191) SAW (8192-12287) S&H (12288-16383)
RATE FREE	613 (4, 101)	4453 (34, 101)	8293 (64, 101)	
RATE SYNC'D	614 (4, 102)	4454 (34, 102)	8294 (64, 102)	64 (0-1365) 32 (1366-2730) 16 (2731-4095) 8 (4096-5460) 4 (5461-6826) 2 (6827-8191) 1 (8192-9556) 1/2 (9557-10921) 1/4 (10922-12287) 1/8 (12288-13652) 1/16 (13653-15017) 1/32 (15018-16382) 1/64 (16383)

NRPN *(Continued)*

	SYNTH 1	SYNTH 2	SYNTH 3	OPTIONS OR CONTINUOUS
OSCILLATOR 1				
OCTAVE	152 (1, 24)	3992 (31, 24)	7832 (61, 24)	32' (0-3276) 16' (3277-6553) 8' (6554-9829) 4' (9830-13106) 2' (13107-16383)
FREQUENCY	151 (1, 23)	3991 (31, 23)	7831 (61, 23)	
BEAT	156 (1, 28)	3996 (31, 28)	7836 (61, 28)	
SAW	158 (1, 30)	3998 (31, 30)	7838 (61, 30)	
TRIANGLE	157 (1, 29)	3997 (31, 29)	7837 (61, 29)	
PULSE WIDTH	300 (2, 44)	4140 (32, 44)	7980 (62, 44)	
MIX	900 (7, 4)	4740 (37, 4)	8580 (67, 4)	
WAVE	150 (1, 22)	3990 (31, 22)	7830 (61, 22)	TRI (0-8191) SAW (8192-16383)
OSCILLATOR 2				
OCTAVE	202 (1, 74)	4042 (31, 74)	7882 (61, 74)	32' (0-3276) 16' (3277-6553) 8' (6554-9829) 4' (9830-13106) 2' (13107-16383)
FREQUENCY	201 (1, 73)	4041 (31, 73)	7881 (61, 73)	
BEAT	206 (1, 78)	4046 (31, 78)	7886 (61, 78)	
SAW	208 (1, 80)	4048 (31, 80)	7888 (61, 80)	
TRIANGLE	207 (1, 79)	4047 (31, 79)	7887 (61, 79)	
PULSE WIDTH	350 (2, 94)	4190 (32, 94)	8030 (62, 94)	
MIX	904 (7, 8)	4744 (37, 8)	8584 (67, 8)	
WAVE	200 (1, 72)	4040 (31, 72)	7880 (61, 72)	TRI (0-8191) SAW (8192-16383)
HARD SYNC	217 (1, 89)	4057 (31, 89)	7897 (61, 89)	OFF (0-8191) ON (8192-16383)

NRPN *(Continued)*

	SYNTH 1	SYNTH 2	SYNTH 3	OPTIONS OR CONTINUOUS
OSCILLATOR 3				
OCTAVE	252 (1, 124)	4092 (31, 124)	7932 (61, 124)	32' (0-3276) 16' (3277-6553) 8' (6554-9829) 4' (9830-13106) 2' (13107-16383)
FREQUENCY	251 (1, 123)	4091 (31, 123)	7931 (61, 123)	
BEAT	256 (2, 0)	4096 (32, 0)	7936 (62, 0)	
SAW	258 (2, 2)	4098 (32, 2)	7938 (62, 2)	
TRIANGLE	257 (2, 1)	4097 (32, 1)	7937 (62, 1)	
PULSE WIDTH	400 (3, 16)	4240 (33, 16)	8080 (63, 16)	
MIX	908 (7, 12)	4748 (37, 12)	8588 (67, 12)	
WAVE	250 (1, 122)	4090 (31, 122)	7930 (61, 122)	TRI (0-8191) SAW (8192-16383)
HARD SYNC	267 (2, 11)	4107 (32, 11)	7947 (62, 11)	OFF (0-8191) ON (8192-16383)
PITCH MODULATION				
LFO 1 AMOUNT	850 (6, 82)	4690 (36, 82)	8530 (66, 82)	
MOD EG AMOUNT	851 (6, 83)	4691 (36, 83)	8531 (66, 83)	
RING MOD				
SOURCES	52 (0, 52)	3892 (30, 52)	7732 (60, 52)	1-2 (0-8191) 2-3 (8192-16383)
WAVEFORM MODULATION LFO 3				
WAVE ANGLE	852 (6, 84)	4692 (36, 84)	8532 (66, 84)	
PULSE WIDTH	853 (6, 85)	4693 (36, 85)	8533 (66, 85)	

NRPN *(Continued)*

	SYNTH 1	SYNTH 2	SYNTH 3	OPTIONS OR CONTINUOUS
FREQUENCY MODULATION				
FM AMOUNT	66 (0, 66)	3906 (30, 66)	7746 (60, 66)	
ROUTE	65 (0, 65)	3905 (30, 65)	7745 (60, 65)	1-2 (0-5460) 1-3 (5461-10921) 3-1 (10922-16383)
NOISE				
ATTACK	802 (6, 34)	4642 (36, 34)	8482 (66, 34)	
RELEASE	805 (6, 37)	4645 (36, 37)	8485 (66, 37)	
SUSTAIN	804 (6, 36)	4644 (36, 36)	8484 (66, 36)	OFF (0-8191) ON (8192-16383)
COLOR MIX	801 (6, 33)	4641 (36, 33)	8481 (66, 33)	
COLOR	800 (6, 32)	4640 (36, 32)	8480 (66, 32)	RED-WHITE (0-5460) RED-PURPLE (5461-10921) WHITE-PURPLE (10922-16383)
POLYPHONY				
DETUNE	1211 (9, 59)	5051 (39, 59)	8891 (69, 59)	
MONO	1203 (9, 51)	5043 (39, 51)	8883 (69, 51)	OFF (0-8191) ON (8192-16383)
UNISON	1209 (9, 57)	5049 (39, 57)	8889 (69, 57)	OFF (0-8191) ON (8192-16383)

NRPN *(Continued)*

	SYNTH 1	SYNTH 2	SYNTH 3	OPTIONS OR CONTINUOUS
MIXER				
OSC 1 LEVEL	901 (7, 5)	4741 (37, 5)	8581 (67, 5)	
OSC 1 SVF	902 (7, 6)	4742 (37, 6)	8582 (67, 6)	OFF (0-8191) ON (8192-16383)
OSC 1 LADDER	903 (7, 7)	4743 (37, 7)	8583 (67, 7)	OFF (0-8191) ON (8192-16383)
OSC 2 LEVEL	905 (7, 9)	4745 (37, 9)	8585 (67, 9)	
OSC 2 SVF	906 (7, 10)	4746 (37, 10)	8586 (67, 10)	OFF (0-8191) ON (8192-16383)
OSC 2 LADDER	907 (7, 11)	4747 (37, 11)	8587 (67, 11)	OFF (0-8191) ON (8192-16383)
OSC 3 LEVEL	909 (7, 13)	4749 (37, 13)	8589 (67, 13)	
OSC 3 SVF	910 (7, 14)	4750 (37, 14)	8590 (67, 14)	OFF (0-8191) ON (8192-16383)
OSC 3 LADDER	911 (7, 15)	4751 (37, 15)	8591 (67, 15)	OFF (0-8191) ON (8192-16383)
RING MOD LEVEL	912 (7, 16)	4752 (37, 16)	8592 (67, 16)	
RING MOD SVF	913 (7, 17)	4753 (37, 17)	8593 (67, 17)	OFF (0-8191) ON (8192-16383)
RING MOD LADDER	914 (7, 18)	4754 (37, 18)	8594 (67, 18)	OFF (0-8191) ON (8192-16383)
NOISE LEVEL	915 (7, 19)	4755 (37, 19)	8595 (67, 19)	
NOISE SVF	916 (7, 20)	4756 (37, 20)	8596 (67, 20)	OFF (0-8191) ON (8192-16383)
NOISE LADDER	917 (7, 21)	4757 (37, 21)	8597 (67, 21)	OFF (0-8191) ON (8192-16383)

NRPN *(Continued)*

	SYNTH 1	SYNTH 2	SYNTH 3	OPTIONS OR CONTINUOUS
FILTERS				
SVF CUTOFF	950 (7, 54)	4790 (37, 54)	8630 (67, 54)	
SVF RESONANCE	952 (7, 56)	4792 (37, 56)	8632 (67, 56)	
LADDER CUTOFF	1150 (8, 126)	4990 (38, 126)	8830 (68, 126)	
LADDER RESONANCE	1152 (9, 0)	4992 (39, 0)	8832 (69, 0)	
MIX	1103 (8, 79)	4943 (38, 79)	8783 (68, 79)	
SVF MODE	958 (7, 62)	4798 (37, 62)	8638 (67, 62)	LP (0-4095) HP (4096-8191) BP (8192-12287) NOTCH (12288-16383)
ROUTE	1102 (8, 78)	4942 (38, 78)	8782 (68, 78)	SER (0-8191) PAR (8192-16383)
LADDER MODE	1158 (9, 6)	4998 (39, 6)	8838 (69, 6)	LP (0-8191) HP (8192-16383)
LADDER SLOPE	1159 (9, 7)	4999 (39, 7)	8839 (69, 7)	6dB (0-4095) 12db(4096-8191) 18dB (8192-12287) 24dB (12288-16383)
CUTOFF MODULATION				
SVF LFO 2 AMOUNT	955 (7, 59)	4795 (37, 59)	8635 (67, 59)	
SVF EG AMOUNT	954 (7, 58)	4794 (37, 58)	8634 (67, 58)	
SVF FM AMOUNT	956 (7, 60)	4796 (37, 60)	8636 (67, 60)	
LADDER LFO 2 AMOUNT	1155 (9, 3)	4995 (39, 3)	8835 (69, 3)	
LADDER EG AMOUNT	1154 (9, 2)	4994 (39, 2)	8834 (69, 2)	
LADDER FM AMOUNT	1156 (9, 4)	4996 (39, 4)	8836 (69, 4)	

NRPN *(Continued)*

	SYNTH 1	SYNTH 2	SYNTH 3	OPTIONS OR CONTINUOUS
FILTER ENVELOPE				
ATTACK FREE	667 (5, 27)	4507 (35, 27)	8347 (65, 27)	
DECAY FREE	669 (5, 29)	4509 (35, 29)	8349 (65, 29)	
RELEASE FREE	670 (5, 30)	4510 (35, 30)	8350 (65, 30)	
ATTACK SYNC'D	672 (5, 32)	4512 (35, 32)	8352 (65, 32)	1/64 (0-1365) 1/32 (1366-2730) 1/16 (2731-4095) 1/8 (4096-5460) 1/4 (5461-6826) 1/2 (6827-8191) 1 (8192-9556) 2 (9557-10921) 4 (10922-12287) 8 (12288-13652) 16 (13653-15017) 32 (15018-16382) 64 (16383)
DECAY SYNC'D	674 (5, 34)	4514 (35, 34)	8354 (65, 34)	
RELEASE SYNC'D	675 (5, 35)	4515 (35, 35)	8355 (65, 35)	
SUSTAIN	652 (5, 12)	4492 (35, 12)	8332 (65, 12)	
MULTI TRIG	659 (5, 19)	4499 (35, 19)	8339 (65, 19)	OFF (0-8191) ON (8192-16383)
SYNC	660 (5, 20)	4500 (35, 20)	8340 (65, 20)	OFF (0-8191) ON (8192-16383)
LOOP	661 (5, 21)	4501 (35, 21)	8341 (65, 21)	OFF (0-8191) ON (8192-16383)
LATCH	662 (5, 22)	4502 (35, 22)	8342 (65, 22)	OFF (0-8191) ON (8192-16383)

NRPN *(Continued)*

	SYNTH 1	SYNTH 2	SYNTH 3	OPTIONS OR CONTINUOUS
AMPLIFIER ENVELOPE				
ATTACK FREE	717 (5, 77)	4557 (35, 77)	8397 (65, 77)	
DECAY FREE	719 (5, 79)	4559 (35, 79)	8399 (65, 79)	
RELEASE FREE	720 (5, 80)	4560 (35, 80)	8400 (65, 80)	
ATTACK SYNC'D	722 (5, 82)	4562 (35, 82)	8402 (65, 82)	1/64 (0-1365) 1/32 (1366-2730) 1/16 (2731-4095) 1/8 (4096-5460) 1/4 (5461-6826) 1/2 (6827-8191) 1 (8192-9556) 2 (9557-10921) 4 (10922-12287) 8 (12288-13652) 16 (13653-15017) 32 (15018-16382) 64 (16383)
DECAY SYNC'D	724 (5, 84)	4564 (35, 84)	8404 (65, 84)	
RELEASE SYNC'D	725 (5, 85)	4565 (35, 85)	8405 (65, 85)	
SUSTAIN	702 (5, 62)	4542 (35, 62)	8382 (65, 62)	
MULTI TRIG	709 (5, 69)	4549 (35, 69)	8389 (65, 69)	OFF (0-8191) ON (8192-16383)
SYNC	710 (5, 70)	4550 (35, 70)	8390 (65, 70)	OFF (0-8191) ON (8192-16383)
LOOP	711 (5, 71)	4551 (35, 71)	8391 (65, 71)	OFF (0-8191) ON (8192-16383)
LATCH	712 (5, 72)	4552 (35, 72)	8392 (65, 72)	OFF (0-8191) ON (8192-16383)

NRPN *(Continued)*

	SYNTH 1	SYNTH 2	SYNTH 3	OPTIONS OR CONTINUOUS
MODULATION ENVELOPE				
ATTACK FREE	767 (5, 127)	4607 (35, 127)	8447 (65, 127)	
DECAY FREE	769 (6, 1)	4609 (36, 1)	8449 (66, 1)	
RELEASE FREE	770 (6, 2)	4610 (36, 2)	8450 (66, 2)	
ATTACK SYNC'D	772 (6, 4)	4612 (36, 4)	8452 (66, 4)	1/64 (0-1365) 1/32 (1366-2730) 1/16 (2731-4095) 1/8 (4096-5460) 1/4 (5461-6826) 1/2 (6827-8191) 1 (8192-9556) 2 (9557-10921) 4 (10922-12287) 8 (12288-13652) 16 (13653-15017) 32 (15018-16382) 64 (16383)
DECAY SYNC'D	774 (6, 6)	4614 (36, 6)	8454 (66, 6)	
RELEASE SYNC'D	775 (6, 7)	4615 (36, 7)	8455 (66, 7)	
SUSTAIN	752 (5, 112)	4592 (35, 112)	8432 (65, 112)	
MULTI TRIG	759 (5, 119)	4599 (35, 119)	8439 (65, 119)	OFF (0-8191) ON (8192-16383)
SYNC	760 (5, 120)	4600 (35, 120)	8440 (65, 120)	OFF (0-8191) ON (8192-16383)
LOOP	761 (5, 121)	4601 (35, 121)	8441 (65, 121)	OFF (0-8191) ON (8192-16383)
LATCH	762 (5, 122)	4602 (35, 122)	8442 (65, 122)	OFF (0-8191) ON (8192-16383)
VCA				
LEVEL	50 (0, 50)	3890 (30, 50)	7730 (60, 50)	
PAN	51 (0, 51)	3891 (30, 51)	7731 (60, 51)	
OUTPUT				
MASTER VOLUME	1 (0, 1)			
HEADPHONES	2 (0, 2)			