

Note: CC's do not work in Manual mode.

Function	CC #	Global	Parm Range	Value
Port Speed/Amt	05		0-127	0-63
Prog Volume	07		0-127	0-63
MIDI clk divider	09		0-127	0-3
Osc1 Waveform	14		0-127	0-3
Osc1 Freq	15		0-127	0-63
Osc1 On	16		0-127	0,1
Osc1 PW	17		0-127	0-63
Osc2 Waveform	18		0-127	0-3
Osc2 Freq	19		0-127	0-63
Osc2 Half/Full On	20		0-127	0,1
Osc2 PW	21		0-127	0-63
Osc2 Detune Amt	22		0-127	0-63
Osc2 Sync	23		0-127	0,1
F-Env to Osc2	24		0-127	0,1
Noise On	25		0-127	0,1
VCF 4P	26		0-127	0,1
VCF Modulation (Env)	27		0-127	0-63
VCF Keytrack	28		0-127	0,1
VCF Env Attack	29		0-127	0-63
VCF Env Decay	30		0-127	0-63
VCF Env Sustain	31		0-127	0-63
VCF Env Release	32		0-127	0-63
VCA Env Decay	33		0-127	0-63
VCA Env Sustain	34		0-127	0-63
LFO Freq	35		0-127	0-63
LFO Trig Point	36		0-127	0-63
LFO Waveform	37		0-127	0-7
LFO FM Amt/Mod Dpth 1	38		0-127	0-63
LFO PWM AmtMod Dpth 2	39		0-127	0-63
LFO to Osc1 Frq/Osc1 FM	40		0-127	0,1
LFO to Osc2 Frq/Osc2 FM	41		0-127	0,1
LFO to Filt/Filt FM	42		0-127	0,1
LFO to Osc1 PW	43		0-127	0,1
LFO to Osc2 PW	44		0-127	0,1
LFO to Ampl/VCA Mod	45		0-127	0,1
LFO Track	46		0-127	0,1
LFO Env Mod	47		0-127	0,1
LFO Wave Retrig	48		0-127	0-7
Attack Mod1	49		0-127	0-63
Attack Mod2	50		0-127	0-63
Delay Mod1	51		0-127	0-63
Delay Mod2	52		0-127	0-63
Invert1	53		0-127	0,1
Invert2	54		0-127	0,1
Quantize1 (FM)	55		0-127	0,1
Quantize2 (PWM)	56		0-127	0,1
Osc1 LFO PWM Mod Invert	57		0-127	0,1
Osc1 LFO Frq Mod Invert	58		0-127	0,1

Unison, Legato Port	59		0-127	0,1,2,3	1 Uni, 2,3 Uni + Leg
Port Bend/Expo/Equal	60		0-127	0,1,2	
Port Quantize	61		0-127	0,1	
Port Match	62		0-127	0,1	
Voice Detune	63		0-127	0-63	
Damper Pedal (Sustain)	--	64	0-127	0,1	
Port Bend Amount	65		0-127	0-63	
LFO Phase 0/90/180	67		0-127	0-3	0-0, 1-90, 2,3-180
VCF Resonance	71		0-127	0-63	
VCA Env Release	72		0-127	0-63	
VCA Env Attack	73		0-127	0-63	
VCF Cutoff	74		0-127	0-63	
LFO FM Amt/Mod Dpth 1	77		0-127	0-63	

Some specific examples: (values are in hexadecimal)

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Bn 0E 00 ;set osc 1 to triangle
Bn 0E 20 ;set osc 1 to saw
Bn 0E 40 ;set osc 1 to pulse
Bn 0E 60 ;set osc 1 to saw + pulse

Bn 25 00 ;LFO waveform sine
Bn 25 10 ;LFO waveform sine
Bn 25 20 ;LFO waveform square
Bn 25 30 ;LFO waveform up sawtooth
Bn 25 40 ;LFO waveform sample and hold
Bn 25 50 ;LFO waveform trig lfo
Bn 25 60 ;LFO waveform down sawtooth
Bn 25 70 ;LFO waveform sampled vibrato

Bn 3B 00 ;not Unison, not Legato Port
Bn 3B 20 ;Unison on
Bn 3B 40 ;Unison and Legato Port both on

Bn 3C 00 ;Port Bend
Bn 3C 20 ;Port Expo
Bn 3C 40 ;Port Equal Time

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For simple on/off controls, (0,1 in table)
any value from 0-3Fh (0-63 decimal) will turn it off
any value from 40-7Fh (64-127 decimal) will turn it on

To use MIDI clocking, turn the internal arp clock rate all the way down.
This does not shut off the clock, but slows it way down. Once MIDI
clocking starts, the internal clock is effectively disabled.
MIDI clocking starts and stops with MIDI Start and Stop messages.
MIDI clocks are assumed to be 24PPQ, but arpeggiator notes can be half
notes, quarter notes, eighth notes, or sixteenth notes. To set this,
hold one of the Group switches when powering on the OB-8:

- A: Slowest arp clock rate (half notes, 48 pulses per arp step)
- B: "Normal" clock rate (quarter notes, 24 pulses per arp step)
- C: Faster clock rate (eighth notes, 12 pulses per arp step)
- D: Fastest clock rate (sixteenth notes, 6 pulses per arp step)

This setting is preserved when power is off.

CC 9 can also be used to change this setting, and is equivalent to holding a Group switch at power up:

- Bn 09 00 Slowest clock (half notes)
- Bn 09 20
- Bn 09 40
- Bn 09 60 Fastest clock (sixteenth notes)

There are now four options for MIDI Sysex transmission. What is sent is controlled using the 4 Pole and Noise switches. To send a sysex, enter Page 2 mode, optionally press and hold 4 Pole or Noise, and then press and hold Write for 1-2 seconds

Noise	4 Pole	Sysex transmitted
Up	Up	Patch loaded before entering page 2 (one sysex packet. 60 MIDI bytes)
Up	Pressed	All 120 programs as 120 separate sysex packets (7200 MIDI bytes)
Pressed	Up	Saved Splits and Doubles (one sysex packet, 293 MIDI bytes)
Pressed	Pressed	Saved Envelope Offset Calibration settings (one sysex packet, 69 MIDI bytes)

These files can be sent to the OB-8 at any time to re-load RAM. The Protect switch must be Off for the data to be written to RAM

MIDI Sysex files have the following format:

- 0) F0
- 1) 10
- 2) 01
- 3) 01 (patch data), 02 (splits & doubles), or 03 (env offsets) for packet type
- 4) low nibble of first data byte
- 5) high nibble of first data byte
- 6) low nibble of second data byte
- etc
- F7 is last byte (EOX)

The format for a patch as it appears in RAM is given in the user manual.

Here is the format for the envelope offsets as they appear in RAM:

Lower voice offsets are first:

- 0) VCF release offset low byte
- 1) VCF release offset high byte
- 2) VCA release low
- 3) VCA release high
- 4) VCF decay low
- 5) VCF decay high
- 6) VCA decay low
- 7) VCA decay high

- 8) VCF attack low
- 9) VCF attack high
- 10) VCA attack low
- 11) VCA attack high
- 12) VCF sustain low
- 13) VCF sustain high

Then upper voice offsets:

- 14) VCF release offset low byte
- 15) VCF release offset high byte
- 16) VCA release low
- 17) VCA release high
- 18) VCF decay low
- 19) VCF decay high
- 20) VCA decay low
- 21) VCA decay high
- 22) VCF attack low
- 23) VCF attack high
- 24) VCA attack low
- 25) VCA attack high
- 26) VCF sustain low
- 27) VCF sustain high

And finally, the output volume offsets:

- 28) Lower voices output volume offset low byte
- 29) Lower voices output volume offset high byte
- 30) Upper voices output volume offset low byte
- 31) Upper voices output volume offset high byte

12 Splits and 12 doubles can be saved in RAM and dumped using sysex

All 12 splits and 12 doubles are sent in one sysex file.

The placement in RAM is all 12 doubles, then all 12 splits.

Each group is stored in RAM in the order ABCD12345678

This the same order in which they appear in a sysex dump.

Each split or double occupies six bytes in RAM

The format for a split or a double as it appears in RAM is:

- 0) Lower patch program number (0-119)
- 1) Upper patch program number (0-119)
- 2) D7:2 is split point, D1:0 top two bits of balance
- 3) D7:2 is lower transpose value, D1:0 is middle two bits of balance
- 4) D7:2 is upper transpose value, D1:0 is low two bits of balance
- 5) Lower voices detune

Patch A1 would be represented as 0

A2 would be 1

A8 would be 7

B1 would be 8

B2 would be 9

etc.

Groups of 8 patches are stored in RAM in the following order:
(And dumped in the same order when all 120 are dumped)

- 1) A
- 2) B
- 3) BA
- 4) C
- 5) C A
- 6) CB
- 7) CBA
- 8) D
- 9) D A
- 10) D B
- 11) D BA
- 12) DC
- 13) DC A
- 14) DCB
- 15) DCBA

This is the same as the "Program Advance Order" in Table 5-2 of the user manual.