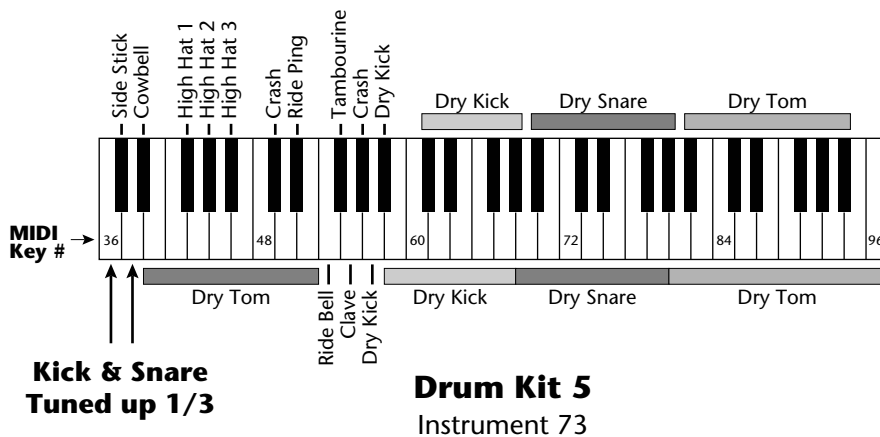
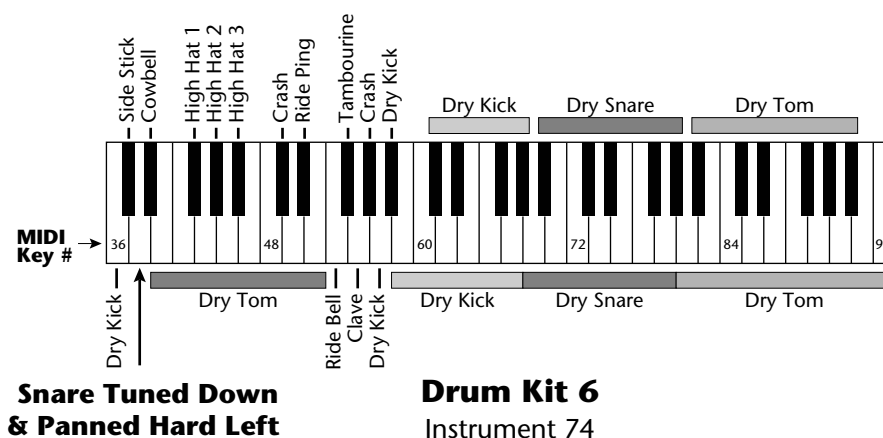


**KICK & SNARE
TUNED DOWN**



**KICK & SNARE
TUNED UP**



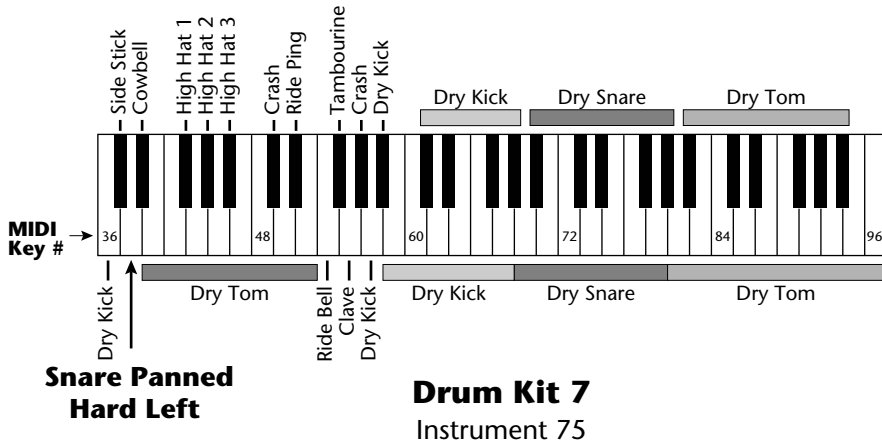
**SNARE TUNED
DOWN,
PANNED LEFT**

Allows you to create a stereo snare by panning the secondary snare hard right.
(Hint: use delay, tuning, sound start.)

PERCUSSION INSTRUMENT LOCATIONS

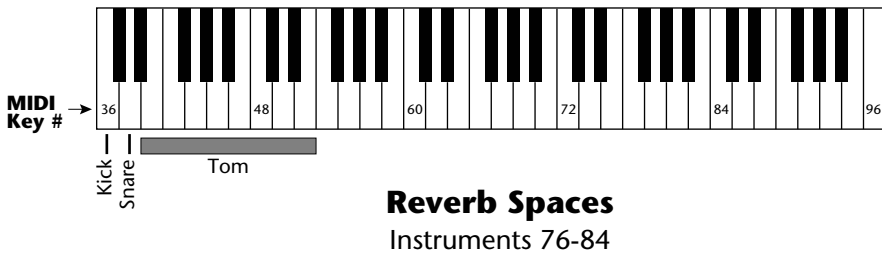
SNARE PANNED LEFT

Allows you to create a stereo snare by panning the secondary snare hard right.
(Hint: use delay, tuning, sound start.)



REVERB SPACES

Allows you to add reverb by layering with Drum Kits 1-7.



••• For more information on the Reverb Spaces, see the Practice Programming section of this manual.

Audio Channels: 32
Audio Outputs: 6 (2 main, 4 submix)
Submix Inputs: 4
Max. Output Level: +4 dB into 600Ω
Output Impedance: 1KΩ
MIDI: In, Out, Thru
Data Encoding: 16 bit Linear
Sample Playback Rate: 39 kHz
Signal to Noise: >90 dB
Dynamic Range: >90 dB
Frequency Response: 20 Hz-15 kHz
THD +N: <.05%
IMD: <.05%
Stereo Phase: Phase Coherent ±1° at 1 kHz

Power Requirements: 25 watts
Dimensions: H: 1.75" W: 19" L: 8.5"
Weight: 6 lb, 14 oz (3.1 Kg)

MIDI IMPLEMENTATION CHART

Function...	Transmitted	Recognized	Remarks
Basic Channel Default Changed	No No	1 1-16	Memorized
Mode Default Messages	Yes	Mode 1, 3, 4 MONO, POLY OMNI, ON/OFF	Memorized
Note Number True Voice	No No	0-127 0-127	
Velocity Note ON Note OFF	No No	Yes v=1-127 No	
After Touch Keys Channels	No No	Yes Yes	
Pitch Bender	No	Yes	
Control Change	No	Yes	0-31 64-79
Program Change True Number	No No	Yes 0-127 Yes 0-127	
All Sound Off	No	Yes	
All Notes Off	No	Yes	
Reset All Controllers	No	Yes	
System Exclusive	Yes	Yes	
System Common :Song Pos :Song Sel :Tune	No No No	No No No	
System Real Time :Clock :Commands	No No	No No	
Aux Messages :Local On/Off :Active Sense :Reset	No No No	No No No	
Notes: Pan 0=hard left 127=hard right Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO			

GENERAL INFORMATION FOR VINTAGE KEYS SYSEX

- Product ID for Vintage Keys is **0A**.
- Device ID is [00-0F] (0-15 decimal).
- Parameter Number and Parameter Value are 2 bytes each.
- Since MIDI data bytes cannot be greater than [7F] (127 decimal), the data values are “nibble-ized” to a 14-bit signed 2's complement format.
- There is only one edit buffer which is for the current preset (the preset shown in the display). Only one preset at a time can be edited via SysEx commands and changing the current preset erases the edit buffer.

RECEIVED CHANNEL COMMANDS

Channels number (n) = 0-15. Message bytes are represented in hex. All other numbers are decimal. Running Status is supported.

<i>Command</i>	<i>Message</i>	<i>Comments</i>
Note Off	8n kk vv	release velocity is ignored
Note On	9n kk vv	velocity 0 = note off
Key Aftertouch	An kk vv	kk = 0-127 vv = 0-127
Program Change	Cn vv	0-127
Channel Aftertouch	Dn vv	0-127
Pitch Bend	En ll mm	l = lsb, m = msb
Realtime Controller	Bn cc vv	cc = 00-31
Footswitch	Bn cc vv	cc = 64-79, vv ≥ 64 = on
Volume	Bn 07 vv	0-127
Pan	Bn 0A vv	0 = hard left, 127 = hard right
All Sound Off	Bn 78 00	turns all sound off
Reset All Controllers	Bn 79 00	ignored in omni mode
All Notes Off	Bn 7B 00	ignored in omni mode
Omni Mode Off*	Bn 7C 00	forces all notes & controls off
Omni Mode On*	Bn 7D 00	forces all notes & controls off
Mono Mode On (<i>Poly Off</i>)*	Bn 7E 00	forces all notes & controls off
Poly Mode On (<i>Mono Off</i>)*	Bn 7F 00	forces all notes & controls off

* Special Notes:

From Omni Mode ... Omni Off turns Poly On.

From Poly Mode Omni On turns Omni On; Mono On turns Mono On.

From Mono Mode ... Mono Off turns Poly On; Omni On turns Omni On.

From Multi Mode ... Omni On turns Omni On; Omni Off or Mono Off turns Poly On; Mono On turns Mono On.

All other changes have no effect.

●●● *Vintage Keys will receive Proteus presets, but will fill in the extra parameters with default values and set instruments to "None".*

●●● *Running Status is supported in Vintage Keys.*

▼ *There is only one edit buffer which is for the current preset (the preset shown in the display). Only one preset at a time can be edited via SysEx commands and changing the current preset erases the edit buffer.*

MIDI SYSEX COMMANDS

For system exclusive commands, the following format is used:

F0	system exclusive status byte
18	E-mu ID byte
0A	product ID byte <i>(will also respond to ID 04 - Proteus)</i>
dd	device ID byte
cc	command byte
...	data bytes
F7	EOX

SysEx Editing

Preset and setup parameters may be edited individually using system exclusive commands. The preset being edited is the active preset (the preset on the basic or global channel and the one which is shown in the LCD). The value of a given parameter may be changed by sending a *parameter value* command. The value of a parameter may be read by sending a *parameter value request*, to which the machine will respond by sending back the parameter value. Please note that there is only *one* edit buffer

Two MIDI bytes (lsb, msb) are required for each 14 bit data word. Bits 0-6 are sent first, followed by bits 7-13 in the next MIDI byte. All data words are signed 2's complement values with sign-extension out to the most significant bit (bit 13). This convention applies to all data words, regardless of the parameter's value range.

Preset data may also be transmitted or received in a single block (one complete preset) using system exclusive commands. A *preset data request* may be issued by a host computer, to which the machine will respond sending the data block for the requested preset. Conversely, the computer may send new preset data which will replace the specified preset currently in the machine. Additionally, a front panel command will transmit one or all user presets for backup onto an external sequencer. These presets may be restored by simply playing back the sequence into the machine.

Warning: When transferring preset banks and tuning table data back and forth from Vintage Keys to a computer, the data should be recorded as you would a regular sequence. Sending the data in one huge chunk will clog the input buffer on Vintage Keys unless a time period of approximately 100 mS is inserted between each preset.

RECEIVED SYSTEM EXCLUSIVE COMMANDS

<i>Command</i>	<i>Message</i>	<i>Comments</i>
Preset Data Request	F0 18 0A dd 00 ll mm F7	ll= preset # lsb mm = msb see note 6
Preset Data	F0 18 0A dd 01 ll mm cs F7	cs=checksum
Parameter Value Request <i>msb</i>	F0 18 0A dd 02 pl pm F7 pl = parameter # lsb pm =	
Parameter Value	F0 18 0A dd 03 pl pm vl vm F7 pl = parameter # lsb pm = msb vl = value lsb vm = msb	
Tuning Table Request	F0 18 0A dd 04 F7	see note 7
Tuning Table	F0 18 0A dd 05 F7	262 bytes
Program Map Request	F0 18 0A dd 06 F7	see note 8
Program Map Data	F0 18 0A dd 07 F7	262 bytes
Master Setting Request	F0 18 0A dd 08 F7	
Version Request	F0 18 0A dd 0A F7	see note 1
Configuration Request	F0 18 0A dd 0C F7	see note 2
Instrument List Request	F0 18 0A dd 0E F7	see note 3
Preset List Request	F0 18 0A dd 12 F7	see note 4
MMA Tuning Dump	F0 7E dd 08 01 tt <name (16 ascii)> ... F7	see note 5

... 281 bytes per preset
(272 data + 9 MIDI header)

TRANSMITTED SYSTEM EXCLUSIVE COMMANDS

Command	Message	Comments
Preset Data	F0 18 0A dd 01 ll mm CS F7 <i>ll= preset # lsb mm = msb cs = checksum</i>	
Parameter Value	F0 18 0A dd 03 pl pm vl vm F7 <i>pl = parameter # lsb pm = msb vl = value lsb vm = msb</i>	
Tuning Table	F0 18 0A dd 05 F7	<i>TT data = 256 bytes</i>
Program Map Data	F0 18 0A dd 07 F7	<i>see note 8</i>
Configuration Message	F0 18 0A dd 0D pl pm s1 l1 m1 s2 l2 m2 F7	<i>see note 2</i>
Instrument List	F0 18 0A dd 0F (14 bytes per instrument) F7	<i>see note 3</i>
Preset List	F0 18 0A dd 13 (13 bytes per preset) F7	<i>see note 4</i>

• **Note 1 - Version Request**

This command allows identification of machine type and software revision. Vintage Keys will respond to the request with the version data:
F0 18 0A dd **0B** 01 r1 r2 r3 F7
r1, r2, r3 = software revision # in ascii (decimal point between r1 & r2).

• **Note 2 - Configuration Message**

This MIDI command is used to identify the sound sets in a given Vintage Keys. The configuration request command is: F0 18 0A dd **0C** F7

Vintage Keys will respond to this command with the configuration message: F0 18 0A dd **0D** pl pm s1 l1 m1 s2 l2 m2 F7

where pl and pm are the lsb and msb of the total number of presets, s1 and s2 are the ID numbers of the sound sets contained in this unit, and n1=l1, m1 and n2=l2, m2 represent the lsb and msb of the number of instruments in each sound set. If no expansion set is present, s2 will be 7F and n2 will be zero. **Standard Vintage Keys Sound Set = 6.**

• *Note 3 - Instrument List*

This MIDI command allows external software to upload the instrument list as an array of ASCII strings. The instrument list request command is:

F0 18 0A dd **0E** F7

Vintage Keys will respond to this command with the instrument list message:

F0 18 0A dd **0F** (14 bytes per instrument) F7

The instruments are transmitted in the same order they appear to the user on Vintage Keys. Note that a given instrument's position in this list may be different from its actual number within the sound set.

instrument entry: il im (11 ascii bytes) 00

Each instrument entry in the list consists of the actual instrument number (as defined in "Sound Sets" - note 9) in lsb, msb format, followed by the instrument name (11 ascii characters plus a zero terminator) for a total of 14 (decimal) bytes. The first instrument is #1 as displayed on Vintage Keys. The total number of instrument names is equal to (n1+n2) in the configuration message above.

• *Note 4 - Preset List*

This MIDI command allows external software to upload all preset names as an array of ASCII strings. The preset list request command is:

F0 18 0A dd **12** F7

Vintage Keys will respond to this command with the preset list message:

F0 18 0A dd **13** (13 bytes per preset) F7

Each preset name is 12 ascii characters, plus a zero terminator, for a total of 13 (decimal) bytes. The first preset is #0. The total number of preset names is equal to pp in the configuration message above.

• **Note 5 - Bulk Tuning Dump**

Vintage Keys can receive MIDI Tuning Standard dumps in addition to its own SysEx tuning table dumps. Vintage Keys will *only* transmit in it's own SysEx tuning format. The MIDI Tuning Standard is as follows:

F0 7E **dd** 08 01 **tt** <**tuning name** (16 ascii)> ... F7

dd= device ID **tt**= tuning prog # (ignored) **tuning name** = (ignored)

... = data (xx yy zz) *frequency data for one note repeated 128x*

xx yy zz = 0xxxxxxx 0abcdefg 0hijklmn

xxxxxxx = semitone **abcdefghijklmn** = fraction of semitone in .0061 cent units. **Examples:** Middle C = 3C 00 00 A-440 = 45 00 00

• **Note 6 - Preset Data Request**

Vintage Keys presets are organized into banks. Each bank consists of 64 presets. Vintage Keys has six banks of presets (0-383). Banks may be requested using the preset request command and the appropriate preset code listed below.

<i>Bank</i>	<i>Preset Range</i>	<i>Preset Code</i>	<i>MIDI Message</i>
0	0-63	1024	F0 18 0A dd 00 00 08 F7
1	64-127	1025	F0 18 0A dd 00 01 08 F7
2	128-191	1026	F0 18 0A dd 00 02 08 F7
3	192-255	1027	F0 18 0A dd 00 03 08 F7
4	256-319	1028	F0 18 0A dd 00 04 08 F7
5	320-383	1029	F0 18 0A dd 00 05 08 F7
1	64-127	-1	F0 18 0A dd 00 7F 7F F7
0	0-63	-2	F0 18 0A dd 00 7E 7F F7
0-3	0-255	-3	F0 18 0A dd 00 7D 7F F7
4-5	256-383	-4	F0 18 0A dd 00 7C 7F F7

• **Note 7 - Alternate Tuning**

The “user tuning table” allows any key to be tuned to an arbitrary pitch over an 8 octave range. If selected in the preset, an alternate tuning may be achieved by modifying the tuning values from the front panel or downloading a new table into the machine. The table consists of 128 words, corresponding to the MIDI key range, kept in non-volatile memory. Each word is a pitch value expressed in 1/64 semitones, offset from key number 0 (c-2). Therefore, for equal temperament, each entry in the table would be equal to its key number times 64.

• **Note 8 - Program Mapping**

MIDI program changes will normally correspond to internal preset numbers 0-127. However, the user may “re-map” any MIDI program number, assigning it to an arbitrary internal preset. This feature allows any of the internal presets to be selected from a MIDI keyboard controller. See *Program* ➔ *Preset* on page 21.

PRESET DATA FORMAT

Preset data is transmitted and received using the following format: The standard system exclusive header is followed by the preset number (lsb, msb), a 14 bit word for each preset parameter value (lsb, msb) starting at parameter #0 and continuing upward, a one-byte checksum, and the end-of-exclusive byte (F7). The checksum is the modulo 128 sum of all the parameter value bytes; that is, all of the data bytes following the preset number and before the checksum.

PRESET PARAMETERS

Parameter No.	Parameter Name	Range	
0-11	preset name (12 ascii characters)	32-127	
12-14	preset link 1-3	0-383	A value of -1 = “Off”
15-18	preset, link 1-3 low key	0-127	
19-22	preset, link 1-3 high key	0-127	
23	pri instrument	0-249	See Note 9
24	pri sound start offset	0-127	
25	pri tuning (coarse)	-36 to +36	
26	pri tuning (fine)	-64 to +64	
27	pri volume	0-127	
28	pri pan	-7 to +7	
29	pri delay	0-127	

MIDI SPECIFICATIONS

	<i>Parameter No.</i>	<i>Parameter Name</i>	<i>Range</i>
	30	pri low key	0-127
	31	pri high key	0-127
	32	pri alt. volume attack	0-99
	33	pri alt. volume hold	0-99
	34	pri alt. volume decay	0-99
	35	pri alt. volume sustain	0-99
	36	pri alt. volume release	0-99
	37	pri alt. volume envelope on	0-1
	38	pri solo mode	0-2
	39	pri chorus	0-15
	40	pri reverse sound	0-1
<i>See Note 9</i>	41	sec instrument	0-249
	42	sec sound start offset	0-127
	43	sec tuning (coarse)	-36 to +36
	44	sec tuning (fine)	-64 to +64
	45	sec volume	0-127
	46	sec pan	-7 to +7
	47	sec delay	0-127
	48	sec low key	0-127
	49	sec high key	0-127
	50	sec alt. volume attack	0-99
	51	sec alt. volume hold	0-99
	52	sec alt. volume decay	0-99
	53	sec alt. volume sustain	0-99
	54	sec alt. volume release	0-99
	55	sec alt. volume envelope on	0-1
	56	sec solo mode	0-2
	57	sec chorus	0-15
	58	sec reverse sound	0-1
	59	crossfade mode	0-2
	60	crossfade direction	0-1
	61	crossfade balance	0-127
	62	crossfade amount	0-255

Parameter No.	Parameter Name	Range	
63	switch point	0-127	
64	LFO 1 shape	0-4	
65	LFO 1 rate	0-127	
66	LFO 1 delay	0-127	
67	LFO 1 variation	0-127	
68	LFO 1 amount	0-127	
69	LFO 2 shape	0-127	
70	LFO 2 rate	0-127	
71	LFO 2 delay	0-127	
72	LFO 2 variation	0-127	
73	LFO 2 amount	0-127	
74	aux. envelope delay	0-127	
75	aux. envelope attack	0-99	
76	aux. envelope hold	0-99	
77	aux. envelope decay	0-99	
78	aux. envelope sustain	0-99	
79	aux. envelope release	0-99	
80	aux. envelope amount	-128 to +127	
81-86	key/vel source 1-6	0-1	
87-92	key/vel dest 1-6	0-42	See Note 10
93-98	key/vel amount 1-6	-128 to +127	
99-106	realtime source 1-8	0-9	
107-114	realtime dest 1-8	<i>See list</i>	See Note 10
115-117	footswitch dest 1-3	0-10	
118-121	controller amount A-D	-128 to +127	
122	pressure amount	0-127	
123	pitch bend range	0-13	— A value of 13 = "Global"
124	velocity curve	0-5	— A value of 5 = "Global"
125	keyboard center	0-127	
126	submix	0-2	
127	keyboard tuning	0-5	
128	pri portamento rate	0-127	
129	sec portamento rate	0-127	

MIDI SPECIFICATIONS

Parameter No.	Parameter Name	Range
130	pri filter type	0-2
131	pri filter Fc	0-255
132	pri filter Q	0-15
133	sec filter type	0-2
134	sec filter Fc	0-255
135	sec filter Q	0-15

GLOBAL/SETUP PARAMETERS

Parameter No.	Parameter Name	Range
256	MIDI basic channel	0-15
257	MIDI volume (<i>basic channel</i>)	0-127
258	MIDI pan (<i>basic channel</i>)	-8 to +7
259	current preset (<i>basic channel</i>)	0-383
260	master tune	-64 to +64
261	transpose	-12 to +12
262	global pitch bend range	0-12
263	global velocity curve	0-4
264	MIDI mode	0-3
265	MIDI overflow	0-1
266-269	controller A-D numbers	0-31
270-272	footswitch 1-3 numbers	0-15
273	mode change enable	0-1
274	device ID number	0-15

A value of -8 = "P"
 The entire message to set pan to
 P:
 F0 18 0A dd 03 02 02 78 7F F7

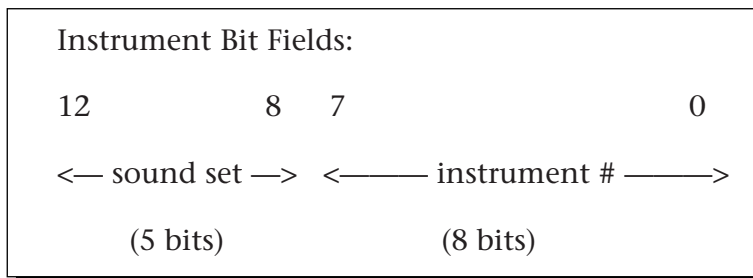
Per MIDI Channel

384-399	MIDI channel enable	0-1
400-415	MIDI program change enable	0-1
416-431	mix out	0-3
512-639	MIDI program/preset map	0-383

• Note 9 - Sound Sets

A Vintage Keys sound set consists of sample data (sound ROMs), plus additional instrument data in the program ROMs. Each sound set has a unique ID number. The sound set for Vintage Keys is #6.

It is necessary to include the sound set number as part of the instrument number when exchanging data. The complete instrument number contains two fields: bits 8-12 specify the sound set (0-31) and bits 0-7 specify the instrument within the sound set (0-255).



Within any given sound set, the first instrument is #1 and #0 selects “None”.

The “magic number” **1536** represents the start number for the standard Vintage Keys instruments. To calculate the complete instrument number follow the instructions below.

$$\text{SysEx Instr. No.} = 1536 + \text{Vintage Keys Instr. No.}$$

Next you must convert the SysEx instrument number to a 14-bit MIDI number. See the information on the following pages.

Example:

Suppose we want to change the instrument to **I002 B3 Dist Fast**.

- 1) $1536 + 2 = \mathbf{1538}$ ($1536 + \text{Instr. No.}$)
- 2) $1538 \div 128 = 12 \text{ r-}2 = \mathbf{12}$ (ignore remainder)
- 3) 12 in Hex = **0C** = msb
- 4) remainder 2 in Hex = **02** = lsb
- 5) SysEx Instrument Number =

lsb
02

msb
0C

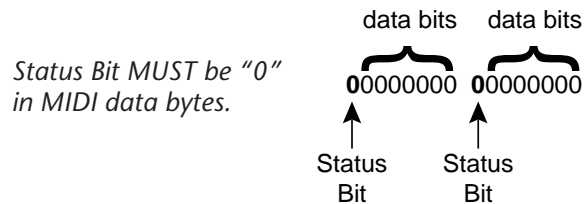
The complete message to change the primary instrument to #02:

F0 18 0A dd 03 17 00 02 0C F7

• 14-bit Signed 2's Complement Numbers

If the data value is negative, you must first take the 2's complement of the number: In the case of a 14-bit number this is equivalent to adding 16384 to the original negative value.

To fit the 7-bit MIDI protocol, numbers must be “nibble-ized”.



To get the 14-bit nibble-ized value (of a positive value or a 2's complemented negative value):

msb = value DIV 128 (divide and ignore the remainder)

lsb = value MOD 128 (divide and use only the remainder)

To go the other way (convert 14 bit signed 2's complement to a signed real number)

raw Value = (msb*128) + lsb (gives you the unsigned raw value)

if raw Value ≥ 8192 (8192 = 2^{13})

then signed Value = raw value - 16384 (16384 = 2^{14})

Example: To find the “nibble-ized” Hex value of -127:

- 1) $-127 + 16384 = \mathbf{16252}$
- 2) $16252 \div 128 = \mathbf{126 \text{ r-}124}$
- 3) 126 in Hex = **7E** = msb
- 4) 124 in Hex = **7C** = lsb
- 5) Parameter value would be transmitted as **7C 7E**

Example: To find the “nibble-ized” Hex value of parameter number 257:

- 1) $257 \div 128 = \mathbf{2 \text{ r-}1}$
- 2) 2 in Hex = **02** = msb
- 3) 1 in Hex = **01** = lsb
- 4) Parameter number would be transmitted as **01 02**

• **Note 10 - Patchcord Destinations**

The order in which patchcord destinations appear on the screen does not necessarily match the SysEx ordering. This is necessary for various reasons, one being to maintain Proteus compatibility.

Key/Velocity Controllers

MIDI value	Destination
0	Off
1	Pitch
2	Pri. Pitch
3	Sec. Pitch
4	Volume
5	Pri. Volume
6	Sec. Volume
7	Attack
8	Pri. Attack
9	Sec. Attack
10	Decay
11	Pri. Decay
12	Sec. Decay
13	Release
14	Pri. Release
15	Sec. Release
16	Crossfade
17	LFO 1 Amount
18	LFO 1 Rate
19	LFO 2 Amount
20	LFO 2 Rate
21	Aux. Envelope Amount
22	Aux. Envelope Attack
23	Aux. Envelope Decay
24	Aux. Envelope Release
25	Sound Start
26	Pri. Sound Start
27	Sec. Sound Start
28	Pan
29	Pri. Pan
30	Sec. Pan
31	Tone
32	Pri. Tone
33	Sec. Tone

Key/Velocity Controllers (cont)

MIDI value	Destination
34	Filter Fc
35	Pri. Filter Fc
36	Sec. Filter Fc
37	Filter Q
38	Pri. Filter Q
39	Sec. Filter Q
40	Portamento Rate
41	Pri. Portamento Rate
42	Sec. Portamento Rate

Realtime Controllers

MIDI value	Destination
0	Off
1	Pitch
2	Pri. Pitch
3	Sec. Pitch
4	Volume
5	Pri. Volume
6	Sec. Volume
7	Attack
8	Pri. Attack
9	Sec. Attack
10	Decay
11	Pri. Decay
12	Sec. Decay
13	Release
14	Pri. Release
15	Sec. Release
16	Crossfade
17	LFO 1 Amount
18	LFO 1 Rate
19	LFO 2 Amount
20	LFO 2 Rate
21	Aux. Envelope Amount
22	Aux. Envelope Attack
23	Aux. Envelope Decay
24	Aux. Envelope Release

Realtime Controllers (cont)

MIDI value	Destination
34	Filter Fc
35	Pri. Filter Fc
36	Sec. Filter Fc
40	Portamento Rate
41	Pri. Portamento Rate
42	Sec. Portamento Rate

Please read this warranty, as it gives you specific legal rights.

Length of Warranty

This warranty covers all defects in materials and workmanship for a period of one year from the date of purchase by the original owner, provided that the Warranty Registration Card is filled out and returned to E-mu Systems within 14 days from the date of purchase. Cases may arise where E-mu's Service Department or one of E-mu's authorized service centers will ask for a copy of your sales receipt to facilitate warranty service. Please keep your purchase receipt in a safe place.

E-mu Systems does not cover:

- Damages due to improper or inadequate maintenance, accident, abuse, misuse, alteration, unauthorized repairs, tampering, or failure to follow normal operating procedures as outlined in the owner's manual.
- Deterioration or damage of the cabinet.
- Damages occurring during any shipment of the product for any reason.
- An E-mu product that has in any way been modified by anyone other than E-mu Systems, Inc.

Limitation of Implied Warranties

No warranty is expressed or implied. E-mu Systems specifically disclaims the implied warranties of merchantability and fitness for a particular purpose.

Exclusion of Certain Damages

E-mu Systems' liability for a product found defective is limited to repair or replacement of the unit, at E-mu's option. In no event shall E-mu Systems be liable for damages based on inconvenience, whether incidental or consequential, loss of use of the unit, loss of time, interrupted operation or commercial loss, or any other consequential damages.

Some states do not allow limitation of the duration of implied warranties or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

How To Obtain Warranty Service

All E-mu products are manufactured with the highest standards of quality. If you find that your instrument does require service, it may be done by an authorized E-mu service center. If you are unable to locate a service center in your area, please contact E-mu Systems Service Department at (408) 438-1921. They will either refer you to an authorized service center or ask that you return your instrument to the factory.

When returning an instrument to the factory, you will be issued a Return Authorization number (RA). Please label all cartons, shipping documents and correspondence with this number. E-mu suggests you carefully and securely pack your instrument for return to the factory. Mark the outside of the shipping carton clearly with your RA number. Send to E-mu Systems, Inc. 1600 Green Hills Road, Scotts Valley, California, 95066. You must pre-pay shipping charges to the service location. E-mu Systems will pay return shipping fees. You will be responsible for any damage or loss sustained during shipment in any direction.

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