

# MMA Technical Standards Board/ AMEI MIDI Committee

## Confirmation of Approval of New MIDI Message

Date of issue: 2/28/99 Originated by: MMAReference TSBB Item #: 149 Volume #: 22 (revised)Title: Key-Based Instrument ControllersCA#: 23Related item(s): General MIDI Level 2 R/P, UNIVERSAL REAL TIME SYSTEM EXCLUSIVE

### **Abstract:**

The Key-Based Instrument Controller message is intended to be a standard method of providing individual key-based instruments with the same performance control that is available for Channel-based instruments. Specific responses to this message may be defined in a separate recommended practice, such as General MIDI 2.

### **Background:**

Some manufacturers make sound modules with multiple drum sets, and provide the ability to modify sound parameters for each drum sound (assigned to individual keys) via MIDI IN. Since there is no common protocol for this function, the manufacturers use proprietary SysEx or NRPN messages. This message was developed for GM2, but is not specific to that use.

### **Details:**

The Key-Based Instrument Controllers provide the same functions as Channel-based Controllers for sounds which are assigned separately to individual keys of the keyboard, such as in a drum set. Of course, they can also be used for sound effects or any other key-based instrument. Key-based, in this sense, means that each key on the keyboard may produce a different sound.

### **[UNIVERSAL REAL TIME SYSTEM EXCLUSIVE] KEY-BASED INSTRUMENT CONTROL**

F0 7F <device ID> 0A 01 0n kk [nn vv] .. F7

F0 7F	Universal Real Time SysEx header
<device ID>	ID of target device (7F = all devices)
0A	sub-ID#1 = "Key-Based Instrument Control"
01	sub-ID#2 = 01 Basic Message
0n	MIDI Channel Number
kk	Key number

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[nn,vv]      Controller Number and Value
:
F7           EOX

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### SOME COMMONLY-USED CONTROLLERS

CC#	nn	Name	vv
7	07H	Note Volume	00H-40H-7FH
10	0AH	*Pan	00H-7FH absolute
33-63	21-3FH	LSB for 01H-1FH	
71	47H	Timbre/Harmonic Intensity	00H-40H-7FH
72	48H	Release Time	00H-40H-7FH
73	49H	Attack Time	00H-40H-7FH
74	4AH	Brightness	00H-40H-7FH
75	4BH	Decay Time	00H-40H-7FH
76	4CH	Vibrato Rate	00H-40H-7FH
77	4DH	Vibrato Depth	00H-40H-7FH
78	4EH	Vibrato Delay	00H-40H-7FH
91	5BH	*Reverb Send	00H-7FH absolute
93	5DH	*Chorus Send	00H-7FH absolute
120	78H	**Fine Tuning	00H-40H-7FH
121	79H	**Coarse Tuning	00H-40H-7FH

\*Depending on the recommended practice that is being followed, the value field can either be absolute or relative to the default setting for the sound. The marked items (nn) will be absolute in most cases.

\*\*The parameters (nn) 78H and 79H are not comparable to their Control Change usage, (Mode Change messages), but are redefined as Fine Tuning and Coarse Tuning.

Any controller (Control Change) may be used for "nn" except Bank Select MSB/LSB (00H, 20H), Data Entry MSB/LSB (06H, 26H), RPN/NRPN messages (60h – 65H), and Mode Change messages (78H-7FH). Since the numbers for these controllers are unused and available for other uses, some of them are redefined and noted with two asterisks (\*\*).

Multiple controller/value pairs can be sent in a single message.

Key-Based Instrument Control messages are generally expected to make relative adjustments to existing (preset) parameter values. Exceptions are marked with a single asterisk (\*). When a new sound set is selected by a Program Change message, the receiving device should adopt the preset setting for each key-based instrument. The value 40H should select the factory default setting for that controller. Values below 40H will decrease the parameter; values above 40H will increase it. Units and the exact behavior of the receiving device are left to the discretion of the manufacturer, unless following a defined recommended practice. See General MIDI Level 2 for an example.