

## Appendix B

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# General MIDI Patch Maps

A MIDI sequence identifies notes, instruments, and channels by number. A typical MIDI message says, in effect, turn on note 60 on instrument 15 in channel 6. Before the 1991 General MIDI (GM) standard, instrument numbers were not standardized, so instrument 15 could be anything from an accordion to a xylophone. The GM standard changed that by standardizing a 128-instrument patch map (table of instruments), organized in 16 instrument families with eight instruments each. Table B-1 shows the 128 instruments of the GM patch map.

The GM standard also calls for 16 channels so that 16 notes can be played at once for chord and ensemble effects. However, it reserves channel 10 for percussion instruments, which don't need notes, just beats. In channel 10 the note number, called a *key number*, identifies a percussion instrument. Table B-2 shows the GM percussion key map of 48 percussion instruments and their numbers, which start with 35.

Table B-1 *The General MIDI Instrument Set*

Patch Number	Instrument	Patch Number	Instrument
<b>Piano</b>		<b>Guitar</b>	
1	Acoustic Grand	25	Acoustic Guitar (nylon)
2	Bright Acoustic	26	Acoustic Guitar (steel)
3	Electric Grand	27	Electric Guitar (jazz)
4	Honky-Tonk	28	Electric Guitar (clean)
5	Electric Piano 1	29	Electric Guitar (muted)
6	Electric Piano 2	30	Overdriven Guitar
7	Harpsichord	31	Distortion Guitar
8	Clavichord	32	Guitar Harmonics
<b>Chrome Percussion</b>		<b>Bass</b>	
9	Celesta	33	Acoustic Bass
10	Glockenspiel	34	Electric Bass (finger)
11	Music Box	35	Electric Bass (pick)
12	Vibraphone	36	Fretless Bass
13	Marimba	37	Slap Bass 1
14	Xylophone	38	Slap Bass 2
15	Tubular Bells	39	Synth Bass 1
16	Dulcimer	40	Synth Bass 2
<b>Organ</b>		<b>Strings</b>	
17	Drawbar Organ	41	Violin
18	Percussive Organ	42	Viola
19	Rock Organ	43	Cello
20	Church Organ	44	Contrabass
21	Reed Organ	45	Tremolo Strings
22	Accordion	46	Pizzicato Strings
23	Harmonica	47	Orchestral Strings
24	Tango Accordion	48	Timpani

Patch Number	Instrument	Patch Number	Instrument
<b>Ensemble</b>		<b>Pipe</b>	
49	String Ensemble 1	73	Piccolo
50	String Ensemble 2	74	Flute
51	Synth Strings 1	75	Recorder
52	Synth Strings 2	76	Pan Flute
53	Choir Aahs	77	Blown Bottle
54	Voice Oohs	78	Skakuhachi
55	Synth Voice	79	Whistle
56	Orchestra Hit	80	Ocarina
<b>Brass</b>		<b>Synth lead</b>	
57	Trumpet	81	Lead 1 (square)
58	Trombone	82	Lead 2 (sawtooth)
59	Tuba	83	Lead 3 (calliope)
60	Muted Trumpet	84	Lead 4 (chiff)
61	French Horn	85	Lead 5 (charang)
62	Brass Section	86	Lead 6 (voice)
63	SynthBrass 1	87	Lead 7 (fifths)
64	SynthBrass 2	88	Lead 8 (bass+lead)
<b>Reed</b>		<b>Synth pad</b>	
65	Soprano Sax	89	Pad 1 (new age)
66	Alto Sax	90	Pad 2 (warm)
67	Tenor Sax	91	Pad 3 (polysynth)
68	Baritone Sax	92	Pad 4 (choir)
69	Oboe	93	Pad 5 (bowed)
70	English Horn	94	Pad 6 (metallic)
71	Bassoon	95	Pad 7 (halo)
72	Clarinet	96	Pad 8 (sweep)

*Continued*

Table B-1 *Continued*

Patch Number	Instrument	Patch Number	Instrument
<b>Synth effects</b>		<b>Percussion</b>	
97	FX 1 (rain)	113	Tinkle Bell
98	FX 2 (soundtrack)	114	Agogo
99	FX 3 (crystal)	115	Steel Drums
100	FX 4 (atmosphere)	116	Woodblock
101	FX 5 (brightness)	117	Taiko Drum
102	FX 6 (goblins)	118	Melodic Tom
103	FX 7 (echoes)	119	Synth Drum
104	FX 8 (sci-fi)	120	Reverse Cymbal
<b>Ethnic</b>		<b>Sound Effects</b>	
105	Sitar	121	Guitar Fret Noise
106	Banjo	122	Breath Noise
107	Shamisen	123	Seashore
108	Koto	124	Bird Tweet
109	Kalimba	125	Telephone Ring
110	Bagpipe	126	Helicopter
111	Fiddle	127	Applause
112	Shanai	128	Gunshot

Table B-2 *The General MIDI Percussion Map*

Number	Sound	Number	Sound
35	Acoustic Bass Drum	43	High Floor Tom
36	Bass Drum 1	44	Pedal Hi-Hat
37	Side Stick	45	Low Tom
38	Acoustic Snare	46	Open Hi-Hat
39	Hand Clap	47	Low-Mid Tom
40	Electric Snare	48	Hi-Mid Tom
41	Low Floor Tom	49	Crash Cymbal 1
42	Closed Hi-Hat		

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<b>Number</b>	<b>Sound</b>	<b>Number</b>	<b>Sound</b>
50	High Tom	66	Low Timbale
51	Ride Cymbal 1	67	High Agogo
52	Chinese Cymbal	68	Low Agogo
53	Ride Bell	69	Cabasa
54	Tambourine	70	Maracas
55	Splash Cymbal	71	Short Whistle
56	Cowbell	72	Long Whistle
57	Crash Cymbal 2	73	Short Guiro
58	Vibraslap	74	Long Guiro
59	Ride Cymbal 2	75	Claves
60	Hi Bongo	76	Hi Wood Block
61	Low Bongo	77	Low Wood Block
62	Mute Hi Conga	78	Mute Cuica
63	Open Hi Conga	79	Open Cuica
64	Low Conga	80	Mute Triangle
65	High Timbale	81	Open Triangle

