

MIDI Handout



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MIDI Message Byte 1:

Status Byte:

Nibble 1 = Status Bit 1, remaining 3 bits for Status message
Note On & Off (in this example)

Nibble 2 = Channel number

MIDI Message Byte 2:

Data Byte 1:

Data bit 0, remaining 7 bits for Note Number

MIDI Message Byte 3:

Data Byte 2:

Data bit 0, remaining 7 bits for Note Velocity

Yamaha & Most Companies C3 = Middle C or note 60

Roland C4 = Middle C or note 60

American Standard Pitch Notation (ASPN) &
Scientific pitch notation (SPN) both use C4 as
Middle C https://enm.wikipedia.org/wiki/Scientific_pitch_notation



ASPN G9, MIDI Note 127 or Highest MIDI Note = 12,543.856Hz

ASPN C8, MIDI Note 108 or Highest Piano Note = 4,186.009 Hz

ASPN C4, MIDI Note 60 or Middle C = 261.626 Hz

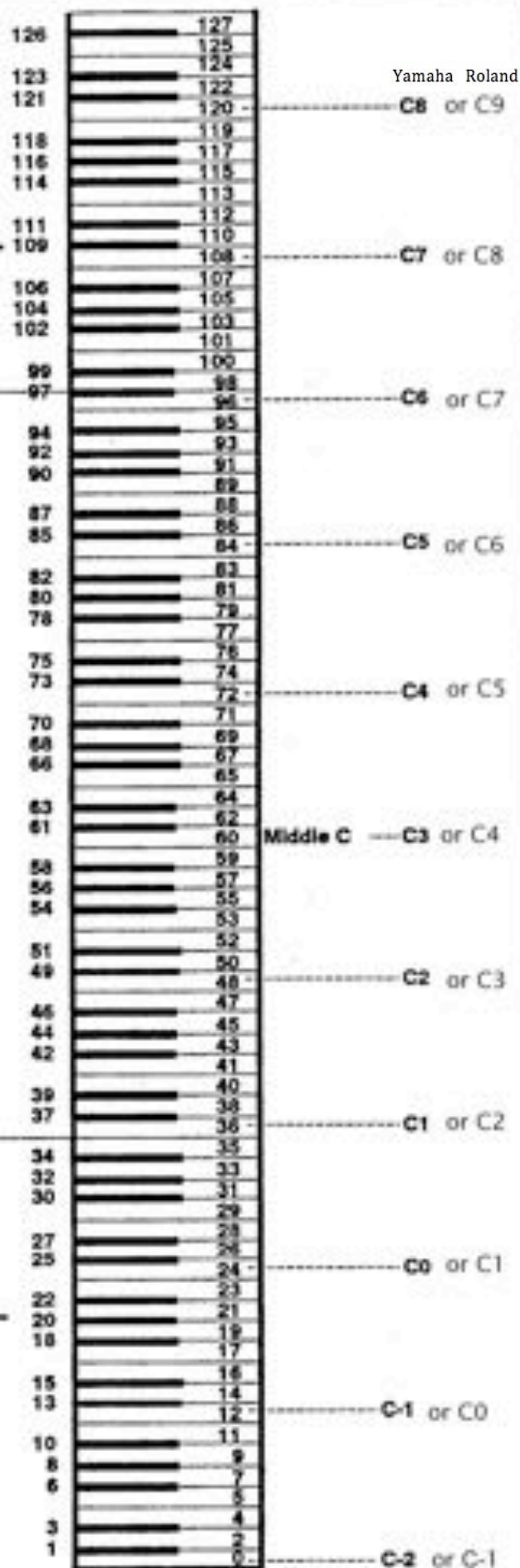
ASPN A0, MIDI Note 21 or Lowest Piano Note = 27.5 Hz

The range below is often used for key switches

ASPN E0 = 20.602 Hz

ASPN C0 = 16.352 Hz

ASPN C-1, MIDI Note 0 or Lowest MIDI Note = 8.176 Hz



MIDI Status Byte				
Status Nibble 1	Status Nibble 1 (3 bits)	Nibble 2 (4 bits) Channel #	Data Byte 1	Data Byte 2
(1)000	Note Off	1-16*	Note Number	Note Velocity
(1)001	Note On	1-16	Note Number	Note Velocity
(1)010	Polyphonic Key Pressure (Multi-Aftertouch)	1-16	Note Number	Aftertouch Amount
(1)011	Control/Mode Change	1-16	Continuous Controller #	CC Value
(1)100	Program Change	1-16	Program #	None
(1)101	Channel Pressure (Mono-Aftertouch)	1-16	Aftertouch Amount	None
(1)110	Pitch Wheel Change	1-16	Pitch Wheel LSB	Pitch Wheel MSB
(1)111	System Messages	1-16	---	---

(1)111 0000	System Exclusive****	NA	---	---
(1)111 0001	MIDI Time Code Qtr. Frame**	NA	See Spec	See Spec
(1)111 0010	Song Position Pointer**	NA	LSB	MSB
(1)111 0011	Song Select (Song Number)**	NA	0-127	None
(1)111 0100	Undefined	NA	---	---
(1)111 0101	Undefined	NA	---	---
(1)111 0110	Tune Request**	NA	None	None
(1)111 0111	End of SysEx****	NA	None	None
(1)111 1000	Timing Clock***	NA	None	None
(1)111 1001	Undefined	NA	---	---
(1)111 1010	Start***	NA	None	None
(1)111 1011	Continue***	NA	None	None
(1)111 1100	Stop***	NA	None	None
(1)111 1101	Undefined	NA	---	---
(1)111 1110	Active Sensing***	NA	None	None
(1)111 1111	System Reset***	NA	None	None

** System Common Messages

*** System Realtime Messages

**** System Exclusive Messages

<http://www.midi.org/techspecs/midimessages.php>

*Channel Numbers

0000	1
0001	2
0010	3
0011	4
0100	5
0101	6
0110	7
0111	8
1000	9
1001	10
1010	11
1011	12
1100	13
1101	14
1110	15
1111	16

Defined Controllers

0	<u>Bank Select (coarse)</u>		71	<u>Sound Timbre</u>
1	<u>Modulation Wheel (coarse)</u>	GM1	72	<u>Sound Release Time</u>
2	<u>Breath controller (coarse)</u>		73	<u>Sound Attack Time</u>
4	<u>Foot Pedal (coarse)</u>		74	<u>Sound Brightness</u>
5	<u>Portamento Time (coarse)</u>		75	<u>Sound Control 6</u>
6	<u>Data Entry (coarse)</u>		76	<u>Sound Control 7</u>
7	<u>Volume (coarse)</u>	GM1	77	<u>Sound Control 8</u>
8	<u>Balance (coarse)</u>		78	<u>Sound Control 9</u>
10	<u>Pan position (coarse)</u>	GM1	79	<u>Sound Control 10</u>
11	<u>Expression (coarse)</u>	GM1	80	<u>General Purpose Button 1 (on/off)</u>
12	<u>Effect Control 1 (coarse)</u>		81	<u>General Purpose Button 2 (on/off)</u>
13	<u>Effect Control 2 (coarse)</u>		82	<u>General Purpose Button 3 (on/off)</u>
16	<u>General Purpose Slider 1</u>		83	<u>General Purpose Button 4 (on/off)</u>
17	<u>General Purpose Slider 2</u>		91	<u>Effects Level</u>
18	<u>General Purpose Slider 3</u>		92	<u>Tremolo Level</u>
19	<u>General Purpose Slider 4</u>		93	<u>Chorus Level</u>
32	<u>Bank Select (fine)</u>		94	<u>Celeste Level</u>
33	<u>Modulation Wheel (fine)</u>		95	<u>Phaser Level</u>
34	<u>Breath controller (fine)</u>		96	<u>Data Button increment</u>
36	<u>Foot Pedal (fine)</u>		97	<u>Data Button decrement</u>
37	<u>Portamento Time (fine)</u>		98	<u>Non-registered Parameter (fine)</u>
38	<u>Data Entry (fine)</u>		99	<u>Non-registered Parameter (coarse)</u>
39	<u>Volume (fine)</u>		100	<u>Registered Parameter (fine)</u>
40	<u>Balance (fine)</u>		101	<u>Registered Parameter (coarse)</u>
42	<u>Pan position (fine)</u>		120	<u>All Sound Off</u>
43	<u>Expression (fine)</u>		121	<u>All Controllers Off</u> GM1
44	<u>Effect Control 1 (fine)</u>		122	<u>Local Keyboard (on/off)</u>
45	<u>Effect Control 2 (fine)</u>		123	<u>All Notes Off</u> GM1
64	<u>Hold Pedal (on/off)</u> GM1		124	<u>Omni Mode Off</u>
65	<u>Portamento (on/off)</u>		125	<u>Omni Mode On</u>
66	<u>Sustenuto Pedal (on/off)</u>		126	<u>Mono Operation</u>
67	<u>Soft Pedal (on/off)</u>		127	<u>Poly Operation</u>
68	<u>Legato Pedal (on/off)</u>			
69	<u>Hold 2 Pedal (on/off)</u>			
70	<u>Sound Variation</u>			

Status byte

Data byte 1

Data byte 2

1 001 0000

0 1000000

0 11111111

Note On MIDI Chan.(1)
Note Off MIDI Chan.(1)
Continuous Control MIDI Chan.(1)

Note number (64)
Note number (64)
Continuous Control (64)

Velocity (127)
Release Velocity (127)
Continuous Control Value (127)

Dec	Hex	Oct	Bin	Dec	Hex	Oct	Bin	Dec	Hex	Oct	Bin	Dec	Hex	Oct	Bin
0	0	000	00000000	16	10	020	00010000	32	20	040	00100000	48	30	060	00110000
1	1	001	00000001	17	11	021	00010001	33	21	041	00100001	49	31	061	00110001
2	2	002	00000010	18	12	022	00010010	34	22	042	00100010	50	32	062	00110010
3	3	003	00000011	19	13	023	00010011	35	23	043	00100011	51	33	063	00110011
4	4	004	00000100	20	14	024	00010100	36	24	044	00100100	52	34	064	00110100
5	5	005	00000101	21	15	025	00010101	37	25	045	00100101	53	35	065	00110101
6	6	006	00000110	22	16	026	00010110	38	26	046	00100110	54	36	066	00110110
7	7	007	00000111	23	17	027	00010111	39	27	047	00100111	55	37	067	00110111
8	8	010	00001000	24	18	030	00011000	40	28	050	00101000	56	38	070	00111000
9	9	011	00001001	25	19	031	00011001	41	29	051	00101001	57	39	071	00111001
10	A	012	00001010	26	1A	032	00011010	42	2A	052	00101010	58	3A	072	00111010
11	B	013	00001011	27	1B	033	00011011	43	2B	053	00101011	59	3B	073	00111011
12	C	014	00001100	28	1C	034	00011100	44	2C	054	00101100	60	3C	074	00111100
13	D	015	00001101	29	1D	035	00011101	45	2D	055	00101101	61	3D	075	00111101
14	E	016	00001110	30	1E	036	00011110	46	2E	056	00101110	62	3E	076	00111110
15	F	017	00001111	31	1F	037	00011111	47	2F	057	00101111	63	3F	077	00111111

Dec	Hex	Oct	Bin	Dec	Hex	Oct	Bin	Dec	Hex	Oct	Bin	Dec	Hex	Oct	Bin
64	40	100	01000000	80	50	120	01010000	96	60	140	01100000	112	70	160	01110000
65	41	101	01000001	81	51	121	01010001	97	61	141	01100001	113	71	161	01110001
66	42	102	01000010	82	52	122	01010010	98	62	142	01100010	114	72	162	01110010
67	43	103	01000011	83	53	123	01010011	99	63	143	01100011	115	73	163	01110011
68	44	104	01000100	84	54	124	01010100	100	64	144	01100100	116	74	164	01110100
69	45	105	01000101	85	55	125	01010101	101	65	145	01100101	117	75	165	01110101
70	46	106	01000110	86	56	126	01010110	102	66	146	01100110	118	76	166	01110110
71	47	107	01000111	87	57	127	01010111	103	67	147	01100111	119	77	167	01110111
72	48	110	01001000	88	58	130	01011000	104	68	150	01101000	120	78	170	01111000
73	49	111	01001001	89	59	131	01011001	105	69	151	01101001	121	79	171	01111001
74	4A	112	01001010	90	5A	132	01011010	106	6A	152	01101010	122	7A	172	01111010
75	4B	113	01001011	91	5B	133	01011011	107	6B	153	01101011	123	7B	173	01111011
76	4C	114	01001100	92	5C	134	01011100	108	6C	154	01101100	124	7C	174	01111100
77	4D	115	01001101	93	5D	135	01011101	109	6D	155	01101101	125	7D	175	01111101
78	4E	116	01001110	94	5E	136	01011110	110	6E	156	01101110	126	7E	176	01111110
79	4F	117	01001111	95	5F	137	01011111	111	6F	157	01101111	127	7F	177	01111111

Dec	Hex	Oct	Bin	Dec	Hex	Oct	Bin	Dec	Hex	Oct	Bin	Dec	Hex	Oct	Bin
128	80	200	10000000	144	90	220	10010000	160	A0	240	10100000	176	80	260	10110000
129	81	201	10000001	145	91	221	10010001	161	A1	241	10100001	177	81	261	10110001
130	82	202	10000010	146	92	222	10010010	162	A2	242	10100010	178	82	262	10110010
131	83	203	10000011	147	93	223	10010011	163	A3	243	10100011	179	83	263	10110011
132	84	204	10000100	148	94	224	10010100	164	A4	244	10100100	180	84	264	10110100
133	85	205	10000101	149	95	225	10010101	165	A5	245	10100101	181	85	265	10110101
134	86	206	10000110	150	96	226	10010110	166	A6	246	10100110	182	86	266	10110110
135	87	207	10000111	151	97	227	10010111	167	A7	247	10100111	183	87	267	10110111
136	88	210	10001000	152	98	230	10011000	168	A8	250	10101000	184	88	270	10111000
137	89	211	10001001	153	99	231	10011001	169	A9	251	10101001	185	89	271	10111001
138	8A	212	10001010	154	9A	232	10011010	170	AA	252	10101010	186	8A	272	10111010
139	8B	213	10001011	155	9B	233	10011011	171	AB	253	10101011	187	8B	273	10111011
140	8C	214	10001100	156	9C	234	10011100	172	AC	254	10101100	188	8C	274	10111100
141	8D	215	10001101	157	9D	235	10011101	173	AD	255	10101101	189	8D	275	10111101
142	8E	216	10001110	158	9E	236	10011110	174	AE	256	10101110	190	8E	276	10111110
143	8F	217	10001111	159	9F	237	10011111	175	AF	257	10101111	191	8F	277	10111111

Dec	Hex	Oct	Bin	Dec	Hex	Oct	Bin	Dec	Hex	Oct	Bin	Dec	Hex	Oct	Bin
192	C0	300	11000000	208	D0	320	11010000	224	E0	340	11100000	240	80	360	11110000
193	C1	301	11000001	209	D1	321	11010001	225	E1	341	11100001	241	81	361	11110001
194	C2	302	11000010	210	D2	322	11010010	226	E2	342	11100010	242	82	362	11110010
195	C3	303	11000011	211	D3	323	11010011	227	E3	343	11100011	243	83	363	11110011
196	C4	304	11000100	212	D4	324	11010100	228	E4	344	11100100	244	84	364	11110100
197	C5	305	11000101	213	D5	325	11010101	229	E5	345	11100101	245	85	365	11110101
198	C6	306	11000110	214	D6	326	11010110	230	E6	346	11100110	246	86	366	11110110
199	C7	307	11000111	215	D7	327	11010111	231	E7	347	11100111	247	87	367	11110111
200	C8	310	11001000	216	D8	330	11011000	232	E8	350	11101000	248	88	370	11111000
201	C9	311	11001001	217	D9	331	11011001	233	E9	351	11101001	249	89	371	11111001
202	CA	312	11001010	218	DA	332	11011010	234	EA	352	11101010	250	8A	372	11111010
203	CB	313	11001011	219	DB	333	11011011	235	EB	353	11101011	251	8B	373	11111011
204	CC	314	11001100	220	DC	334	11011100	236	EC	354	11101100	252	8C	374	11111100
205	CD	315	11001101	221	DD	335	11011101	237	ED	355	11101101	253	8D	375	11111101
206	CE	316	11001110	222	DE	336	11011110	238	EE	356	11101110	254	8E	376	11111110
207	CF	317	11001111	223	DF	337	11011111	239	EF	357	11101111	255	8F	377	11111111

GM1 Device Features¹

To be GM1 compatible, a GM1 sound generating device (keyboard, sound module, sound card, IC, software program or other product) must meet the General MIDI System Level 1 performance requirements outlined below, instantaneously upon demand, and without additional modification or adjustment/configuration by the user.

- **Voices:** A minimum of either 24 fully dynamically allocated voices are available simultaneously for both melodic and percussive sounds, or 16 dynamically allocated voices are available for melody plus 8 for percussion. All voices respond to velocity.
- **Channels:** All 16 MIDI Channels are supported. Each Channel can play a variable number of voices (polyphony). Each Channel can play a different instrument (sound/patch/timbre). Key-based percussion is always on MIDI Channel 10.
- **Instruments:** A minimum of 16 simultaneous and different timbres playing various instruments. A minimum of 128 preset instruments (MIDI program numbers) conforming to the [GM1 Instrument Patch Map](#) and 47 percussion sounds which conform to the [GM1 Percussion Key Map](#).
- **Channel Messages:** Support for continuous controllers 1, 7, 10, 11, 64, 121 and 123; RPN #s 0, 1, 2; Channel Pressure, Pitch Bend.
- **Other Messages:** Respond to the data entry controller and the RPNs for fine and course tuning and pitch bend range, as well as all General MIDI Level 1 System Messages.

Developer Information

The MMA's [GM Developer Guidelines](#) document (also included in the Complete MIDI 1.0 Specification) describes additional recommendations and clarifications of the GM Specification for content producers and device makers, to insure improved compatibility among GM products.

The [GM1 Logo](#) was created to insure consumer recognition for products that meet the General MIDI Level 1 Specification. The GM Logo is the property of the MMA and AMEI and must be used in accordance with guidelines established to insure the value of the GM Logo for our members and for the consumer.

¹ http://www.midi.org/about-midi/gm/gm1_spec.shtml

Comparison of MIDI standards

From Wikipedia, the free encyclopedia

This table provides summary of comparison of various [MIDI](#) enhancement standards by various parameters.

	MT-32	GM	GS	XG level 1	XG level 2	XG level 3	GM level 2
Entry date	1987	1991	1991	1994	1997	1998	1999
Organization	Roland	MMA	Roland	Yamaha			MMA
Minimum equipment requirements							
Simultaneous voices	8 or more (up to 32 partials)	24	24	32	64	128	32
Simultaneous melodic voices	N/A	16	16	N/A XG synths have no separate limits on melodic / percussion sounds			16
Simultaneous percussion voices		8	8				16
MIDI channels allocation	8 channels, 1 rhythm channel	16 channels, #10 is fixed for percussion	16 channels, one channel can be set to play drum kits	16 channels, every channel can play drum kits with bank set to 16256	32 channels, 2 ports, drums as in XG level 1	64 channels, 4 ports, drums as in XG level 1	16 channels, #10 and #11 are used for percussion
Channel recommendations				#1: melody; #2: melody (duet); #3: bass; #4: pad; #5: rff; #10: drums [1] [6]			
Sounds/effects available							
Melodic instruments	128	128	226	480			256
Drum kits	1	1	8 + 1 SFX kit	9 + 2 SFX kits			9
Drum sounds per kit	30	47	61	72			61
Controllers		11	26 (GM+11)				23
RPNs		4					5
SysEx messages		2					14

Prog#	INSTRUMENT	Prog#	INSTRUMENT
1-8 PIANO		9-16 CHROMATIC PERCUSSION	
1	Acoustic Grand	9	Celesta
2	Bright Acoustic	10	Glockenspiel
3	Electric Grand	11	Music Box
4	Honky-Tonk	12	Vibraphone
5	Electric Piano 1	13	Marimba
6	Electric Piano 2	14	Xylophone
7	Harpsichord	15	Tubular Bells
8	Clav	16	Dulcimer
17-24 ORGAN		25-32 GUITAR	
17	Drawbar Organ	25	Acoustic Guitar(nylon)
18	Percussive Organ	26	Acoustic Guitar(steel)
19	Rock Organ	27	Electric Guitar(jazz)
20	Church Organ	28	Electric Guitar(clean)
21	Reed Organ	29	Electric Guitar(muted)
22	Accoridan	30	Overdriven Guitar
23	Harmonica	31	Distortion Guitar
24	Tango Accordion	32	Guitar Harmonics
33-40 BASS		41-48 STRINGS	
33	Acoustic Bass	41	Violin
34	Electric Bass(finger)	42	Viola
35	Electric Bass(pick)	43	Cello
36	Fretless Bass	44	Contrabass
37	Slap Bass 1	45	Tremolo Strings
38	Slap Bass 2	46	Pizzicato Strings
39	Synth Bass 1	47	Orchestral Strings
40	Synth Bass 2	48	Timpani
49-56 ENSEMBLE		57-64 BRASS	
49	String Ensemble 1	57	Trumpet
50	String Ensemble 2	58	Trombone
51	SynthStrings 1	59	Tuba
52	SynthStrings 2	60	Muted Trumpet
53	Choir Aahs	61	French Horn
54	Voice Oohs	62	Brass Section
55	Synth Voice	63	SynthBrass 1
56	Orchestra Hit	64	SynthBrass 2

65-72 REED

65	Soprano Sax
66	Alto Sax
67	Tenor Sax
68	Baritone Sax
69	Oboe
70	English Horn
71	Bassoon
72	Clarinet

73-80 PIPE

73	Piccolo
74	Flute
75	Recorder
76	Pan Flute
77	Blown Bottle
78	Shakuhachi
79	Whistle
80	Ocarina

81-88 SYNTH LEAD

81	Lead 1 (square)
82	Lead 2 (sawtooth)
83	Lead 3 (calliope)
84	Lead 4 (chiff)
85	Lead 5 (charang)
86	Lead 6 (voice)
87	Lead 7 (fifths)
88	Lead 8 (bass+lead)

89-96 SYNTH PAD

89	Pad 1 (new age)
90	Pad 2 (warm)
91	Pad 3 (polysynth)
92	Pad 4 (choir)
93	Pad 5 (bowed)
94	Pad 6 (metallic)
95	Pad 7 (halo)
96	Pad 8 (sweep)

97-104 SYNTH EFFECTS

97	FX 1 (rain)
98	FX 2 (soundtrack)
99	FX 3 (crystal)
100	FX 4 (atmosphere)
101	FX 5 (brightness)
102	FX 6 (goblins)
103	FX 7 (echoes)
104	FX 8 (sci-fi)

105-112 ETHNIC

105	Sitar
106	Banjo
107	Shamisen
108	Koto
109	Kalimba
110	Bagpipe
111	Fiddle
112	Shanai

113-120 PERCUSSIVE1

113	Tinkle Bell
114	Agogo
115	Steel Drums
116	Woodblock
117	Taiko Drum
118	Melodic Tom
119	Synth Drum
120	Reverse Cymbal

121-128 SOUND EFFECTS

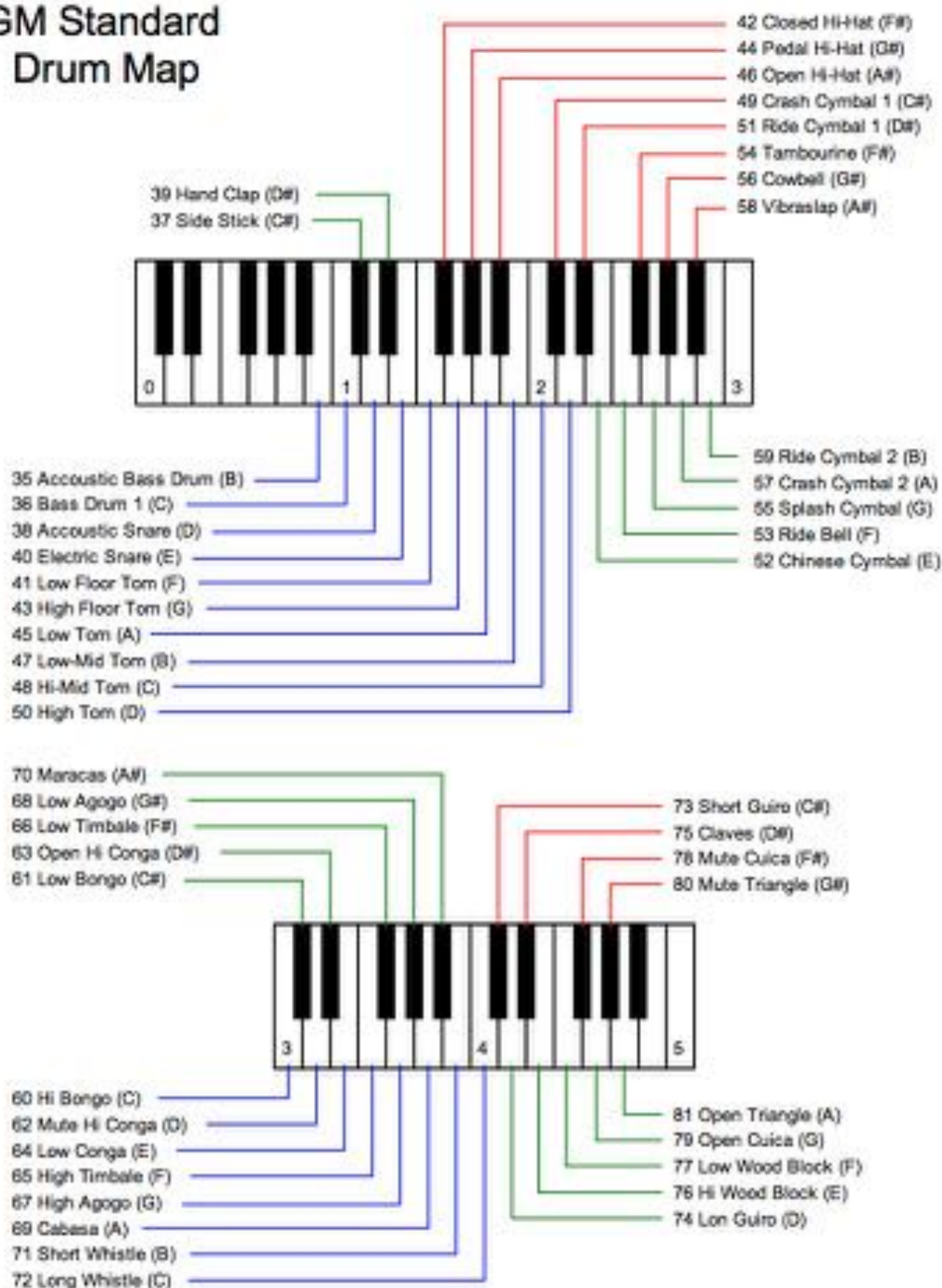
121	Guitar Fret Noise
122	Breath Noise
123	Seashore
124	Bird Tweet
125	Telephone Ring
126	Helicopter
127	Applause
128	Gunshot

General MIDI Drums

All note messages are sent on channel number 10

Key #	Drum Sound	Key #	Drum Sound
35	Acoustic Bass	59	Ride Cymbal 2
36	Bass Drum 1	60	Hi Bongo
37	Side Stick	61	Low Bongo
38	Acoustic Snare	62	Mute Hi Conga
39	Hand Clap	63	Open Hi Conga
40	Electric Snare	64	Low Conga
41	Low Floor Tom	65	High Timbale
42	Closed Hi Hat	66	Low Timbale
43	High Floor Tom	67	High Agogo
44	Pedal Hi-Hat	68	Low Agogo
45	Low Tom	69	Cabasa
46	Open Hi-Hat	70	Maracas
47	Low-Mid Tom	71	Short Whistle
48	Hi Mid Tom	72	Long Whistle
49	Crash Cymbal 1	73	Short Guiro
50	High Tom	74	Long Guiro
51	Ride Cymbal 1	75	Claves
52	Chinese Cymbal	76	Hi Wood Block
53	Ride Bell	77	Low Wood Block
54	Tambourine	78	Mute Cuica
55	Splash Cymbal	79	Open Cuica
56	Cowbell	80	Mute Triangle
57	Crash Cymbal 2	81	Open Triangle

GM Standard Drum Map



Understanding Parts Per Quarter Note

There are 960 p.p.q's in most DAW's

Straight P.P.Q.

1/1	3,840	= 960/.25	or	= 960*4	or	= 7,680/2
1/2	1,920	= 960/.5	or	= 960*2	or	= 3,840/2
1/4	960	= 960/1	or	= 960*1	or	= 1,920/2
1/8	480	= 960/2	or	= 960*.5	or	= 960/2
1/16	240	= 960/4	or	= 960*.25	or	= 480/2
1/32	120	= 960/8	or	= 960*.125	or	= 240/2
1/64	60	= 960/16	or	= 960*.0625	or	= 120/2
1/128	30	= 960/32	or	= 960*.03125	or	= 60/2

Triplets P.P.Q.

1/1	2,560	= 960/.375	or	= 960*2.66	or	= 7,680/3
1/2	1,280	= 960/.75	or	= 960*1.33	or	= 3,840/3
1/4	640	= 960/1.5	or	= 960*.66	or	= 1,920/3
1/8	320	= 960/3	or	= 960*.33	or	= 960/3
1/16	160	= 960/6	or	= 960*.166	or	= 480/3
1/32	80	= 960/12	or	= 960*.0833	or	= 240/3
1/64	40	= 960/24	or	= 960*.04166	or	= 120/3
1/128	20	= 960/48	or	= 960*.020833	or	= 60/3

CS-10 CONTROLLER ASSIGNMENTS

All Continuous Controllers must be sent on channel 16

Controller # and Name

- 0 Mute 1
- 1 Mute 2
- 2 Mute 3
- 3 Mute 4
- 4 Mute 5
- 5 Mute 6
- 6 Mute 7
- 7 Mute 8

- 8 Mode
- 9 Shift

- 10 F1
- 11 F2
- 12 F3
- 13 F4
- 14 F5
- 15 F6
- 16 F7
- 17 F8
- 18 F9

- 19 REWIND
- 20 FAST FORWARD
- 21 STOP
- 22 PLAY
- 23 RECORD

- 24 LEFT WHEEL
- 25 RIGHT WHEEL

- 26 UP CURSOR
- 27 DOWN CURSOR
- 28 LEFT CURSOR
- 29 RIGHT CURSOR

- 30 FOOTSWITCH

- 64 FADER 1
- 65 FADER 2
- 66 FADER 3
- 67 FADER 4
- 68 FADER 5
- 69 FADER 6
- 70 FADER 7
- 71 FADER 8

- 72 BOOST / CUT
- 73 FREQUENCY
- 74 BANDWIDTH
- 75 SEND 1
- 76 SEND 2
- 77 PAN

- 96 WHEEL



MIDI IMPLEMENTATION CHART

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	X * * * * *	1 – 16	
Mode	Default Messages Altered	X X * * * * *	Mode 3 X	
Note Number	True Voice	X * * * * *	0 – 127 0 – 127	
Velocity	Note On Note Off	X X	O X	
After Touch	Key's Ch's	X X	O	
Pitch Bender		X	O	
Control Change	0 – 123	X	O	
Prog Change	True #	X * * * * *	O 0 – 127 0 – 99 Preset, 00-27 User	
System Exclusive		O	O	
System Common	Song Pos Song Sel Tune	X X X	X X X	
System Realtime	Clock Commands	X X	X X	
Aux Messages	Local On/Off All Notes Off Active Sense Reset	X X X X	X X X X	
Notes				

Mode 1: OMNI ON, POLY
Mode 2: OMNI ON, MONO

Mode 3: OMNI OFF, POLY
Mode 4: OMNI OFF, MONO

O : Yes
X : No

MIDI Implementation Chart

Lexicon Reflex Digital Effects System

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 1-16	1 1-16	memorized can be set from APM
Mode	Default Messages Altered		X 3 X	
Note Number		X	0-127	used as controller
Velocity	Note ON Note OFF	X	O 9n v = 0-127	used as controller
After Touch	Keys Channel	X X	X O	
Pitch Bend		X	O	
Control Change	1-119	OX	OX	
Program Change	True #	X	0-127	
System Exclusive	Lexicon Real-time non Real-time	O X X	O X X	
System Common	:Song Pos :Song Sel :Tune	X X X	X X X	
System Real Time	:Clock :Commands	X X	O X	used as controller
Aux Messages	:Local ON/OFF	X	X	
	:All Notes OFF	X	X	
	:Active Sense	X	X	
	:Reset	X	O	
	:Reset All Controllers	X	X	
Notes				

Mode 1: OMNI ON, POLY
Mode 3: OMNI OFF, POLY

Mode 2: OMNI ON, MONO
Mode 4: OMNI OFF, MONO

O : Yes OX: Selectable
X : No

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1	1	
	Changed	1-16	1-16	
Mode	Default			
	Messages	X	X	
	Altered			
Note Number		X	X	
	True Voice	X	X	
Velocity	Note ON	X	X	
	Note OFF	X	X	
After Touch	Key's	X	X	
	Ch's	X	X	
Pitch Bend		X	X	
Control Change		from 16 and up	from 16 and up	Eng 1: 16-31 Eng 2: 48-63 System: 70-78 All Controllers are single byte type, scaled to parameter range.
Prog Change		O	O	
System Excl. Common		O	O	
	Song Pos	X	X	
	Song Sel	X	X	
	Tune	X	X	
System real time	Clock	X	O	
	Commands	X	X	
Aux Messages	Local ON/OFF	X	X	
	All Notes OFF	X	X	
	Active Sense	X	X	
	Reset	X	X	

O: YES **Mode 1: OMNI ON, POLY** **Mode 2: OMNI ON, MONO**
X: NO **Mode 3: OMNI OFF, POLY** **Mode 4: OMNI OFF, MONO**

MIDI Implementation Chart

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default	X	1 - 16, OFF	Memorized
	Changed	X	1 - 16, OFF	
Mode	Default	X	Mode 3	
	Messages Altered	X *****	Mode 3, 4 (M=1)	
Note Number :	True Voice	X	0 - 127	
		*****	0 - 127	
Velocity	Note ON	X	0	
	Note OFF	X	0	
After Touch	Key's	X	0 * 1	
	Ch's	X	0 * 1	
Pitch Bend		X	0 * 1	Resolution : 9 bits
Control Change	0 - 95	X	0 * 2	Bank select Modulation Breath Foot type Portamento time Data entry Volume Balance Panpot Expression Hold 1 Portamento Sostenuto Soft pedal Hold 2 Portamento control General purpose effects 1 (Reverb) General purpose effects 2 (Chorus) ARP LSR, MSH
	0, 32	X	0 *	
	1	X	0 *	
	2	X	0 *	
	3	X	0 *	
	4	X	0 *	
	5, 38	X	0 *	
	6	X	0 *	
	7	X	0 *	
	8	X	0 *	
	9	X	0 *	
	10	X	0 *	
	11	X	0 *	
	12	X	0 *	
	13	X	0 *	
	14	X	0 *	
	100, 101	X	0 *	
Prog Change	: True #	X	0 * 1	Program Number 1 - 128
		*****	0 - 127	
System Exclusive		0	0 * 1	
System Common	: Song Pos	X	X	
	: Song Sel	X	X	
	: Tune	X	X	
System Real Time	: Clock	X	0 * 1	
	: Commands	X	X	
Aux Message	: All Sound OFF	X	0	
	: Reset All Controllers	X	0	
	: Local ON/OFF	X	X	
	: All Notes OFF	X	0 (123 - 127)	
	: Active Sense	X	0	
	: Reset	X	X	
Notes		* 1 Can be set to 0 or X manually and memorized. * 2 Can be changed manually and memorized.		

Mode 1 : OMNI ON, POLY

Mode 2 : OMNI ON, MONO

0 : Yes

Mode 3 : OMNI OFF, POLY

Mode 4 : OMNI OFF, MONO

X : No

MIDI IMPLEMENTATION CHART

MODEL A-33
(MIDI Keyboard Controller)

Date: January 1996
Version: 1.00

FUNCTION		TRANSMITTED	RECOGNIZED	REMARKS
Basic Channel	Default Changed	1 1-16, OFF	1-16 1-16, OFF	(a) 1 = Upper 2 = Lower (b)
Mode	Default Messages Altered	Mode 3 X *****	<input type="radio"/> <input type="radio"/> <input type="radio"/>	
Note Number	True voice	26-103 *****	0-127 X	
Velocity	Note ON Note OFF	<input type="radio"/> X	<input type="radio"/> <input type="radio"/>	
After Touch	Key's Ch's	X <input type="radio"/>	<input type="radio"/> <input type="radio"/>	
Pitch Bender		<input type="radio"/>	<input type="radio"/>	(c)
Control Change		<input type="radio"/>	<input type="radio"/>	(b)
Prog change	True #	1-128 *****	1-128 X	
System Exclusive		<input type="radio"/>	<input type="radio"/>	
System Common	Song Pos Song Sel Tune	X X X	<input type="radio"/> <input type="radio"/> <input type="radio"/>	
System Real Time	Clock Commands	<input type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/>	Midi File Record/Play Midi File Record/Play
Aux Messages	Local ON/OFF All Notes OFF Active Sense Reset	X X <input type="radio"/> X	X <input type="radio"/> <input type="radio"/> X	
<p>Notes:</p> <p>(a) = Factory Setup (b) = Memorized (c) = Message are TX over particular conditions.</p>				<p>Messages recognized from MIDI in are retransmitted on MIDI Out merged with the messages generated by the A-33 with no effect on A-33 performances.</p>

Mode 1: OMNI ON, POLY
Mode 3: OMNI OFF, POLY

Mode 2: OMNI ON, MONO
Mode 4: OMNI OFF, MONO

☐ YES
☐ NO

K61P

MIDI Implementation Chart

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 – 16 1 – 16	1 – 16 1 – 16	Memorized
Mode	Memorized Messages Altered	× ○ *****	3 ×	*1
Note Number:	True Voice	0 – 127 *****	0 – 127 0 – 127	
Velocity	Note On Note Off	○ 1 – 127 ○ 64	○ 1 – 127 ×	
Aftertouch	Polyphonic (Key) Monophonic (Channel)	× ○	× ×	MOD wheel
Pitch Bend		○	○	PITCH wheel
Control Change	1 7 10 11 64 66 67 120 121 0-127	○ ○ ○ ○ ○ ○ ○ ○ ○ ○	○ ○ ○ ○ ○ ○ ○ ○ ○ –	Modulation wheel Volume *2 Panpot Expression Damper Sostenuto Soft Pedal All Sound Off Reset All Controllers Controllers (KNOB1/2, SW1/2, Slider, ClickPoint, MOD wheel, Pedal)
Program Change	Variable Range	○ 0 – 127 *****	○ 0 – 23 0-23	*3
System Exclusive		○	○	*4
System Common	Song Position Song Select Tune	× × ×	× × ×	
System Real Time	Clock Command	× ×	× ×	
Aux Messages	Local On/Off All Notes Off Active Sense Reset	○ ○ ○ ×	○ ○ 123 – 127 ○ ×	*1 *1
Notes *1: Transmitting by allocating it to the controller becomes possible. *2: It receives it when the setting of Volume message filer is off. *3: It sends and receives it when enable/disable setting of the program change is enable. *4: It corresponds to Device Inquiry message besides KORG System Exclusive message.				

Mode 1: OMNI ON, POLY

Mode 2: OMNI ON, MONO

○ : Yes

Mode 3: OMNI OFF, POLY

Mode 4: OMNI OFF, MONO

× : No

Consult your local Korg distributor for more information on MIDI IMPLEMENTATION.

Veuillez vous adresser a votre revendeur Korg pour une copie de l'equipement MIDI.

Weitere Informationen zur MIDI IMPLEMENTATION erhalten Sie bei Ihrem Handler oder dem Korg-Vertrieb Ihres Landes.

MIDI Implementationの配布については、コルグお客様相談窓口へお問い合わせください。