GENERAL MIDI SETTINGS

■ SOUND

P.CNG#	SOUND NAME	P.CNG#	SOUND NAME	P.CNG#	SOUND NAME	P.CNG#	SOUND NAME
1	Piano	33	Acoustic Bass	65	Soprano Sax	97	Ice Rain
2	Rock Piano	34	Bright E.Bass	66	Alto Sax	98	Soundtrack
3	Electric Grand	35	Picked E.Bass	67	Tenor Sax	99	Synth Glocken
4	Honky-Tonk Piano	36	Fretless Bass	68	Baritone Sax	100	Atmosphere
5	E.Piano 1	37	Slap Bass 1	69	Oboe	101	Mist
6	Modern E.P.1	38	Slap Bass 2	70	English Horn	102	Goblins
7	Harpsichord	39	Wow Bass 1	71	Bassoon	103	Echo Drops
8	Clavi	40	Synth Chopper	72	Jazz Clarinet 1	104	Star Theme
9	Celesta	41	Violin	73	Piccolo	105	Sitar
10	Glockenspiel	42	Viola	74	Jazz Flute	106	Banjo
11	Music Box	43	Cello	75	Recorder	107	Shamisen
12	Vibraphone	44	Bowed Bass	76	Pan Flute 1	108	Koto
13	Marimba	45	Tremolo Strings	77	Blown Bottle	109	Kalimba
14	Xylophone	46	Pizzicato Str.	78	Shakuhachi	110	Bagpipe
15	Tubular Bells	47	Harp	79	Whistle	111	Fiddle
16	Dulcimer	48	Timpani	80	Ocarina	112	Shanai
17	Full Drawbars	49	Classical Strings	81	Square Lead	113	Tinkle Bell
18	Jazz Organ	50	Slow Strings	82	Saw Lead	114	Agogo
19	Rock Organ	51	Synth Strings 1	83	Synth Calliope	115	Steel Drum
20	Pipe Organ 1	52	Synth Strings 2	84	Chiffer Lead	116	Wood Block
21	Harmonium	53	Vocal Ah	85	Charang	117	Taiko Drum
22	Bright Accordion	54	Vocal Doo	86	Air Vox	118	Melodic Tom
23	Blues Harmonica	55	Synth Vocal	87	5th Wave	119	Synth Drum
24	Bandoneon	56	Orchestra Hit 1	88	Bass & Lead	120	Reverse Cymbal
25	Jazz Ac.Guitar	57	Trumpet 1	89	Fantasia	121	Fret Noise
26	Folk Guitar	58	Bright Trombone	90	Mellow Ensemble	122	Breath Noise
27	Jazz Guitar 1	59	Orchestral Tuba	91	Polysynth	123	Seashore
28	Bright Solid Gtr	60	Harmon Mute Tpt	92	Spacy Pad	124	Bird Tweet
29	Mute Guitar	61	Open Fr.Horn	93	Bowed Glass	125	Telephone
30	Overdrive Guitar	62	Brass	94	Metal Pad	126	Helicopter
31	Distortion Gtr	63	Synth Brass 1	95	Halo Pad	127	Applause
32	Rock Harmonics	64	Mellow Synth Brass	96	Sweep Pad	128	Gun Shot

■ Parts

MIDI CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PART	R1	R2	L	P4	P5	P6	P7	P8	P9	P16	P11	P12	P13	P14	P15	P10
SEQUENCER TRACK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

■ Non-working Function

DEMO,RHYTHM GROUP,ONE TOUCH PLAY/MUSIC STYLE SELECT,
MUSIC STYLE ARRANGER, PANEL MEMORY, TECHNI-CHORD, AUTO PLAY CHORD, COMPOSER,
SOUND ARRANGER,SOUND EDIT etc.

QQCG0263A
Se0695F0

Technics

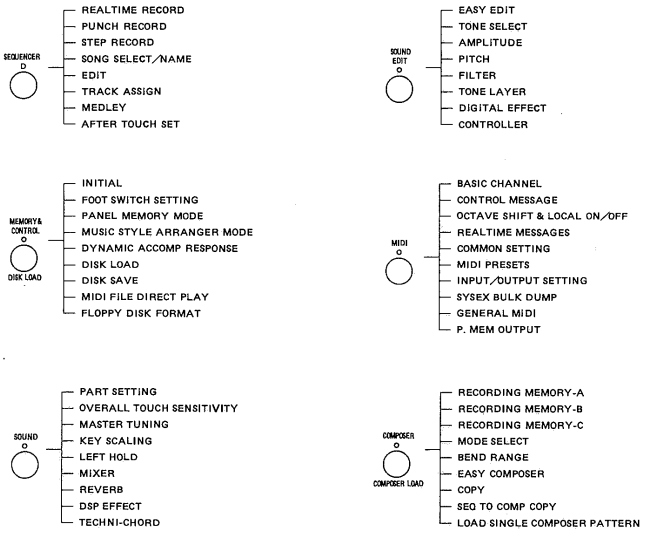
SX-KN3000 REFERENCE GUIDE

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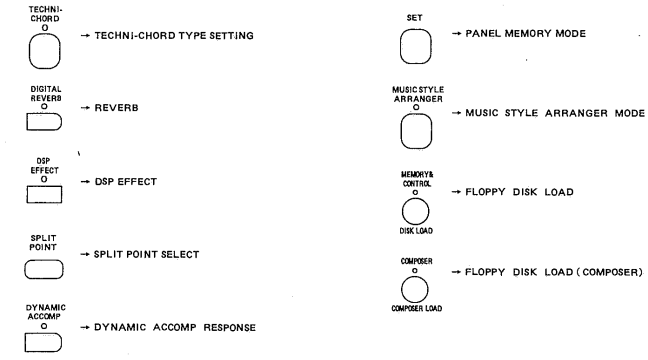
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DISPLAY GUIDE



EASY SETTING (Press and hold)



SOUND

Sound	MIDI Program change data					Sound	MIDI Program change data				
	Normal		Technics		GM		Normal		Technics		GM
	No.	Bank	Data	Bank			No.	Bank	Data	Bank	
PIANO & E PIANO						**HARPSI & MALLET**					
Piano	9	0	0	0	1	Harpsichord	1	0	16	0	7
Piano 1 Octave	9	1	0	16		Clavi	1	1	17	0	8
Piano 2 Octave	9	2	2	16		Synth Clavi	1	2	115	0	
Honky-Tonk Piano	9	3	1	16	4	Glockenspiel	1	3	9	0	10
Electric Grand	9	4	3	0	3	Vibraphone	1	4	8	0	12
Midi Grand 1	9	5	0	32		Marimba	1	5	10	0	13
E. Piano 1	9	6	5	0	5	Xylophone	1	6	11	0	14
Suitcase E.P.	9	7	4	32		Steel Drum	1	7	15	0	115
Modern E.P.1	9	8	6	0	6	Celeste	1	8	12	0	9
Modern E.P.2	9	9	4	0		Bottle Marimba	1	9	13	0	
Mellow Piano	9	10	2	0		Cembalo	1	10	18	0	
Solo Piano	9	11	0	48		Harpsi. Octave	1	11	16	16	
Rock Piano	9	12	3	32	2	Vibes & Jazz Guitar	1	12	8	64	
Midi Grand 2	9	13	0	64		Power Steel Drum	1	13	15	16	
Jangle Piano	9	14	1	48		Tubular Bells	1	14	14	0	15
E. Piano 2	9	15	5	32		Wind Chime	1	15	14	16	
Tremolo E. Piano	9	16	4	64		Tinkle Bell	1	16	14	32	113
Wurly E.P.	9	17	4	80		African Mallet	1	17	113	0	
Modern E.P.3	9	18	6	48		Caribbean Mallet	1	18	11	16	
Bell Piano	9	19	116	16		Synth Glocken	1	19	9	32	99
GUITAR						**SPECIAL PERC**					
Classical Guitar	10	0	20	0		Hawaiian Guitar 1	2	0	31	48	
Spanish Guitar	10	1	20	16		Hawaiian Guitar 2	2	1	31	0	
Folk Guitar	10	2	22	0	26	Banjo	2	2	33	0	106
Jazz Guitar 1	10	3	25	0	27	Mandolin	2	3	35	0	
Bright Solid Gtr	10	4	26	0	28	Harp	2	4	32	0	47
Clean Solid Gtr	10	5	26	16		Orchestra Hit 1	2	5	127	16	56
Mute Guitar	10	6	29	0	29	Timpani	2	6	126	0	48
Distortion Gtr	10	7	30	0	31	Koto	2	7	37	0	108
Overdrive Guitar	10	8	27	32	30	Kalimba	2	8	39	0	109
Country Guitar	10	9	31	16		Metal Kalimba	2	9	39	16	
Jazz Ac. Guitar	10	10	21	0	25	Orchestra Hit 2	2	10	127	32	
Guitar Harmonics	10	11	27	64		Music Box	2	11	7	0	11
12 String Guitar	10	12	23	0		Christmas Piano	2	12	7	32	
Electro Ac. Guitar	10	13	25	32		Shamisen	2	13	36	0	107
Jazz Guitar 2	10	14	24	0		Sitar	2	14	38	0	105
Mellow Solid Gtr	10	15	28	0		Gamelan 1	2	15	14	48	
Fusion Solid Gtr	10	16	28	32		Gamelan 2	2	16	14	112	
Funk Mute Guitar	10	17	29	48		Dulcimer	2	17	38	16	16
Rock Harmonics	10	18	27	16	32	Kanun	2	18	38	32	
MIDI Guitar	10	19	26	48		Cumbus	2	19	38	48	

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SOUND

Sound	MIDI Program change data				
	Normal		Technics		GM
	No.	Bank	Data	Bank	
STRINGS & VOCAL					
Symphonic Strings	11	0	100	48	
Classical Strings	11	1	100	0	49
Slow Strings	11	2	101	0	50
Pizzicato Str.	11	3	99	0	46
Synth Strings 1	11	4	103	0	51
Violin	11	5	96	0	41
Cello	11	6	97	0	43
Vocal Ah	11	7	104	48	53
Vocal Ooh	11	8	104	32	
Vocal Doo	11	9	109	0	54
Marcato Strings	11	10	100	64	
Octave Strings	11	11	102	0	
Bass Strings	11	12	98	16	
Tremolo Strings	11	13	100	32	45
Synth Strings 2	11	14	103	16	52
Jazz Violin	11	15	96	16	
Fiddle	11	16	96	32	111
Viola	11	17	97	32	42
Bowed Bass	11	18	98	0	44
Humming	11	19	105	0	
BRASS					
Brass	12	0	56	0	62
Brass & Synth	12	1	56	48	
Trumpet 1	12	2	48	0	57
Harmon Mute Tpt	12	3	50	0	60
Flugel Horn	12	4	51	0	
Bright Trombone	12	5	52	0	58
Cup Mute Trombone	12	6	52	48	
Closed Fr. Horn	12	7	54	0	
Open Fr. Horn	12	8	54	16	61
Synth Brass 1	12	9	60	0	63
Octave Brass	12	10	56	16	
Mute Brass Ens.	12	11	56	32	
Trumpet 2	12	12	48	64	
Orchest. Trumpet	12	13	48	32	
Straight Mute Tpt	12	14	50	16	
Cornet	12	15	49	16	
Mellow Trombone	12	16	53	0	
Orchestral Tuba	12	17	55	0	59
Marching Tuba	12	18	55	16	
Synth Brass 2	12	19	63	48	

Sound	MIDI Program change data				
	Normal		Technics		GM
	No.	Bank	Data	Bank	
ORGAN & ACCORDION					
Jazz Organ	3	0	88	0	18
Full Drawbars	3	1	89	0	17
Jazz Drawbars	3	2	93	0	
16' & 1'	3	3	91	0	
Pop Organ 1	3	4	90	0	
Pipe Organ 1	3	5	84	0	20
Theatre Organ 1	3	6	87	32	
Bright Accordion	3	7	80	0	22
Mellow Accordion	3	8	81	0	
Musette	3	9	82	0	
Mellow Drawbars	3	10	91	32	
Pop Organ 2	3	11	89	32	
Rock Organ	3	12	92	32	19
Organ Bass	3	13	94	16	
Pipe Organ 2	3	14	85	0	
Theatre Organ 2	3	15	87	48	
Theatre Organ 3	3	16	87	64	
Theatre Organ 4	3	17	87	80	
Harmonium	3	18	86	32	21
Bandoneon	3	19	80	16	24
REED					
Soprano Sax	4	0	76	0	65
Alto Sax	4	1	77	0	66
Mellow Alto Sax	4	2	77	16	
Tenor Sax	4	3	78	48	67
Breathy Tenor	4	4	78	16	
Baritone Sax	4	5	79	16	68
Jazz Clarinet 1	4	6	68	0	72
Oboe	4	7	66	0	69
Harmonica	4	8	83	0	
Blues Harmonica	4	9	83	16	23
Rock Tenor Sax	4	10	79	0	
Distortion Sax	4	11	78	32	
Synth Sax	4	12	79	48	
Jazz Clarinet 2	4	13	68	32	
Mellow Clarinet	4	14	68	16	
Classic Clarinet	4	15	69	0	
Bass Clarinet	4	16	69	16	
English Horn	4	17	67	0	70
Bassoon	4	18	70	0	71
Bagpipe	4	19	73	0	110

Program change number = Program change data + 1 / Bank number = Bank data + 1

SOUND

Sound	MIDI Program change data				
	Normal		Technics		GM
	No.	Bank	Data	Bank	
FLUTE & ETHNIC					
Piccolo	13	0	64	0	73
Jazz Flute	13	1	65	0	74
Classical Flute	13	2	65	16	
Alto Flute	13	3	64	16	
Pan Flute 1	13	4	72	0	76
Recorder	13	5	74	0	75
Ocarina	13	6	74	16	80
Whistle	13	7	111	0	79
Shakuhachi	13	8	75	0	78
Quena	13	9	75	16	
Alto Ensemble	13	10	64	48	
Pan Flute 2	13	11	72	16	
Blown Bottle	13	12	72	32	77
Ney	13	13	73	32	
Shanai	13	14	73	16	112
Synth Recorder	13	15	74	32	
Synth Calliope	13	16	72	48	83
Knock Whistle	13	17	112	48	
Misty Flute	13	18	75	64	
Flutter Flute	13	19	75	80	
BASS					
Acoustic Bass	14	0	43	0	33
Mellow Ac. Bass	14	1	43	16	
Electric Bass	14	2	40	0	
Bright E. Bass	14	3	40	16	34
Funky E. Bass	14	4	40	48	
Fretless Bass	14	5	40	32	36
Picked E. Bass	14	6	42	0	35
Slap Bass 1	14	7	41	0	37
Analog Bass	14	8	46	16	
Wow Bass 1	14	9	46	0	39
Fusion E. Bass	14	10	40	64	
Mute Bass	14	11	47	0	
Slap Bass 2	14	12	41	16	38
Soul Bass	14	13	42	16	
Synth Chopper	14	14	45	0	40
Wow Bass 2	14	15	46	64	
Dance Bass	14	16	47	48	
House Bass	14	17	47	32	
Plastic Bass	14	18	46	80	
Dr. M Bass	14	19	46	96	

Sound	MIDI Program change data				
	Normal		Technics		GM
	No.	Bank	Data	Bank	
SYNTH LEAD					
Square Lead	5	0	117	0	81
Saw Lead	5	1	118	16	82
Sine Lead	5	2	94	0	
Air Vox	5	3	106	16	86
Chiffer Lead	5	4	117	32	84
Charang	5	5	27	48	85
Metallica Solo	5	6	115	96	
Talking Lead	5	7	117	80	
Digi Stack	5	8	116	96	
80's Solo	5	9	121	80	
Steamy Keys	5	10	106	80	
Olymp Synth	5	11	60	64	
Voco Synth	5	12	118	32	
5th Wave	5	13	119	0	87
Bass & Lead	5	14	46	32	88
Sleigh Synth	5	15	61	64	
Talking Synth	5	16	60	80	
Synth Harp	5	17	32	64	
Afro Dance	5	18	11	80	
Digi Bells	5	19	14	96	
SYNTH PAD					
Mellow Ensemble	6	0	107	16	90
Warm Synth Pad	6	1	62	80	
Synth Vocal	6	2	107	0	55
Spacy Pad	6	3	107	32	92
Metal Pad	6	4	106	32	94
Star Theme	6	5	120	16	104
Bowed Glass	6	6	120	0	93
Atmosphere	6	7	21	48	100
Fantasia	6	8	116	48	89
Bell Pad	6	9	116	32	
Dream	6	10	108	32	
Mist	6	11	108	48	101
Sweep Pad	6	12	62	32	96
Halo Pad	6	13	107	48	95
Echo Drops	6	14	106	48	103
Polysynth	6	15	102	32	91
Mellow Synth Brass	6	16	62	64	64
Voxmosphere	6	17	61	96	
Wide Window	6	18	61	112	
Dark Universe	6	19	106	64	

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SOUND

Sound	MIDI Program change data				
	Normal		Technics		GM
	No.	Bank	Data	Bank	
KEYBOARD PERC					
Jazz Kit	15	0	113	128	
Brush Kit	15	1	117	128	
Trad Kit	15	2	118	128	
Standard Kit	15	3	112	128	GM
Room Kit	15	4	115	128	
Light Rock Kit	15	5	126	128	
Power Kit	15	6	119	128	
Funk Kit	15	7	120	128	
Soul Kit	15	8	121	128	
Electric Kit	15	9	114	128	
Dance Kit	15	10	122	128	
House Kit	15	11	123	128	
Synth Kit	15	12	116	128	
Orchestral Kit	15	13	124	128	
Sound Effect Kit	15	14	125	128	
User Kit	15	15			
MEMORY A					
MEMORY A - 1	8	0	0	128	
MEMORY A - 2	8	1	1	128	
MEMORY A - 3	8	2	2	128	
MEMORY A - 4	8	3	3	128	
MEMORY A - 5	8	4	4	128	
MEMORY A - 6	8	5	5	128	
MEMORY A - 7	8	6	6	128	
MEMORY A - 8	8	7	7	128	
MEMORY A - 9	8	8	8	128	
MEMORY A - 10	8	9	9	128	
MEMORY A - 11	8	10	10	128	
MEMORY A - 12	8	11	11	128	
MEMORY A - 13	8	12	12	128	
MEMORY A - 14	8	13	13	128	
MEMORY A - 15	8	14	14	128	
MEMORY A - 16	8	15	15	128	
MEMORY A - 17	8	16	16	128	
MEMORY A - 18	8	17	17	128	
MEMORY A - 19	8	18	18	128	
MEMORY A - 20	8	19	19	128	

Sound	MIDI Program change data				
	Normal		Technics		GM
	No.	Bank	Data	Bank	
PERC & EFFECT					
Agogo	7	0	122	0	114
Wood Block	7	1	122	16	116
Taiko Drum	7	2	123	48	117
Melodic Tom	7	3	122	32	118
Synth Drum	7	4	124	0	119
Reverse Cymbal	7	5	122	48	120
Ice Rain	7	6	121	48	97
Soundtrack	7	7	119	16	98
Goblins	7	8	106	0	102
Windy Sweep	7	9	106	96	
Sleigh Bell	7	10	125	0	
Talking Drum	7	11	123	64	
Fret Noise	7	12	124	16	121
Breath Noise	7	13	124	32	122
Seashore	7	14	124	48	123
Bird Tweet	7	15	125	32	124
Telephone	7	16	123	0	125
Helicopter	7	17	123	16	126
Applause	7	18	125	48	127
Gun Shot	7	19	123	32	128
MEMORY B					
MEMORY B - 1	0	0	20	128	
MEMORY B - 2	0	1	21	128	
MEMORY B - 3	0	2	22	128	
MEMORY B - 4	0	3	23	128	
MEMORY B - 5	0	4	24	128	
MEMORY B - 6	0	5	25	128	
MEMORY B - 7	0	6	26	128	
MEMORY B - 8	0	7	27	128	
MEMORY B - 9	0	8	28	128	
MEMORY B - 10	0	9	29	128	
MEMORY B - 11	0	10	30	128	
MEMORY B - 12	0	11	31	128	
MEMORY B - 13	0	12	32	128	
MEMORY B - 14	0	13	33	128	
MEMORY B - 15	0	14	34	128	
MEMORY B - 16	0	15	35	128	
MEMORY B - 17	0	16	36	128	
MEMORY B - 18	0	17	37	128	
MEMORY B - 19	0	18	38	128	
MEMORY B - 20	0	19	39	128	

Program change number = Program change data + 1 / Bank number = Bank data + 1

RHYTHM

Tempo

RHYTHM	MIDI PROGRAM CHANGE DATA			
	NORM		TECH	
8BEAT 1		bank		bank
8Bt Standard 108	7	(0)	90	(96)
8Bt Soft Rock 110	7	(1)	88	(64)
8Bt Rock 112	7	(2)	90	(112)
8Bt Pop Ballad 96	7	(3)	91	(64)
8Bt Ballad 1 70	7	(4)	91	(48)
8Bt Ballad 2 88	7	(5)	91	(32)
Country Rock 140	7	(6)	85	(32)
60's Pop 140	7	(7)	86	(32)
8BEAT 2				
Rock'n'Roll 1 152	0	(0)	80	(80)
Rock'n'Roll 2 168	0	(1)	80	(64)
U.S. Rock 140	0	(2)	94	(32)
Hard Rock 140	0	(3)	92	(32)
8Bt Soul 1 124	0	(4)	87	(32)
8Bt Soul 2 108	0	(5)	87	(16)
8Bt Pop 120	0	(6)	84	(64)
16BEAT				
16Bt Standard 1 87	8	(0)	96	(80)
16Bt Standard 2 87	8	(1)	96	(64)
16Bt Rock 79	8	(2)	100	(32)
16Bt Pop 98	8	(3)	101	(32)
16Bt Ballad 1 83	8	(4)	99	(16)
16Bt Ballad 2 83	8	(5)	99	(112)
16Bt Pop Ballad 75	8	(6)	107	(80)
JAZZ ROCK & SOUL				
Jazz Rock 1 110	1	(0)	113	(96)
Jazz Rock 2 90	1	(1)	113	(80)
Soul Rock 94	1	(2)	102	(64)
Jazz Funk 1 108	1	(3)	112	(48)
Jazz Funk 2 110	1	(4)	113	(64)
Soul Ballad 80	1	(5)	103	(32)
FUNK & LATIN ROCK				
Funk 117	9	(0)	110	(48)
Swingy Funk 95	9	(1)	65	(32)
Salsa 112	9	(2)	66	(64)
Samba Rock 110	9	(3)	117	(16)
Latin Pop 112	9	(4)	116	(16)
Carib. Rock 103	9	(5)	118	(48)

Tempo

RHYTHM	MIDI PROGRAM CHANGE DATA			
	NORM		TECH	
DANCE POP		bank		bank
Disco 1 120	2	(0)	124	(80)
Disco 2 110	2	(1)	123	(64)
Rap 112	2	(2)	127	(96)
Hip Hop 103	2	(3)	127	(80)
Dance 112	2	(4)	124	(96)
House 120	2	(5)	125	(32)
Garage 120	2	(6)	125	(48)
BIG BAND & SWING				
Big Band 1 174	10	(0)	36	(64)
Big Band 2 117	10	(1)	38	(80)
B. Band Ballad 84	10	(2)	39	(32)
Standard Swing 170	10	(3)	25	(32)
Orch. Swing 86	10	(4)	37	(32)
Jazz Waltz 176	10	(5)	46	(48)
ROCK (OTHERS)				
Shuffle R&R 1 164	3	(0)	76	(112)
Shuffle R&R 2 170	3	(1)	76	(16)
Shuffle Boogie 138	3	(2)	76	(0)
Shuffle H.Rock 140	3	(3)	79	(16)
Rock Ballad 74	3	(4)	74	(80)
Slow Soul Ballad 66	3	(5)	75	(32)
Swing Rock 94	3	(6)	72	(64)
Shuffle Ballad 76	3	(7)	78	(32)
JAZZ COMBO				
Jazz Combo 165	11	(0)	34	(80)
Euro Combo 132	11	(1)	34	(64)
Jazz Quartet 190	11	(2)	32	(64)
Jazz Ballad 86	11	(3)	44	(16)
Modern Jazz 190	11	(4)	40	(80)
Organ Blues 146	11	(5)	38	(96)
Dixie 180	11	(6)	24	(96)
U.S.TRAD				
Country 2 Step 142	4	(0)	17	(112)
Country Swing 132	4	(1)	17	(80)
Bluegrass 127	4	(2)	20	(48)
Hawaiian 112	4	(3)	22	(16)
R&B Soul 128	4	(4)	123	(80)
R&B Ballad 96	4	(5)	75	(64)
Gospel Shuffle 156	4	(6)	77	(64)

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RHYTHM

RHYTHM	MIDI PROGRAM CHANGE DATA NORM	TECH
MARCH & WALTZ	bank	bank
U.S.March 2/4	12 (0)	0 (80)
GermanMrch 2/4	12 (1)	1 (48)
U.S.March 6/8	12 (2)	2 (16)
Pop March	12 (3)	4 (64)
Polka 2/4	12 (4)	4 (32)
Stand. Waltz	12 (5)	8 (96)
Vienna Waltz	12 (6)	9 (32)
Chanson Waltz	12 (7)	11 (32)
Swingy Waltz	12 (8)	12 (16)
Polka 6/8	12 (9)	5 (32)
TRAD & SHOWTIME		
Foxtrot	5 (0)	29 (96)
Chanson Fox.	5 (1)	29 (64)
Jive	5 (2)	29 (0)
Quickstep	5 (3)	28 (16)
Soft shoe	5 (4)	24 (80)
Broadway Show	5 (5)	15 (32)
Hollywood	5 (6)	30 (16)
Cabaret	5 (7)	15 (48)
Paris.Ballad	5 (8)	74 (96)
MEMORY		
MEMORY A V1	14 (0)	0 (128)
MEMORY A V2	14 (1)	1 (128)
MEMORY A V3	14 (2)	2 (128)
MEMORY A V4	14 (3)	3 (128)
MEMORY B V1	14 (4)	4 (128)
MEMORY B V2	14 (5)	5 (128)
MEMORY B V3	14 (6)	6 (128)
MEMORY B V4	14 (7)	7 (128)
MEMORY C V1	14 (8)	8 (128)
MEMORY C V2	14 (9)	9 (128)
MEMORY C V3	14 (10)	10 (128)
MEMORY C V4	14 (11)	11 (128)

RHYTHM	MIDI PROGRAM CHANGE DATA NORM	TECH
LATIN 1	bank	bank
Rhumba	13 (0)	58 (64)
Beguine	13 (1)	59 (32)
Cha Cha	13 (2)	57 (48)
Mambo	13 (3)	56 (32)
Swingy Reggae	13 (4)	71 (32)
Modern Reggae	13 (5)	71 (48)
LATIN 2		
Bossanova 1	6 (0)	48 (112)
Bossanova 2	6 (1)	48 (96)
Samba	6 (2)	51 (80)
Tango Argent.	6 (3)	53 (48)
Tango Conti.	6 (4)	53 (64)
Arabian	6 (5)	60 (0)
COMPOSER CHORD MAP		
MAP 1	15 (0)	112 (128)
MAP 2	15 (1)	113 (128)
MAP 3	15 (2)	114 (128)
MAP 4	15 (3)	115 (128)
MAP 5	15 (4)	116 (128)

•The numbers in parentheses ( ) are bank data.
Program change number = Program change data+1 ／ Bank number = Bank data+1

KEYBOARD PERCUSSION

	GM	Other kits	MIDI NOTE NUMBER NORM	TECH	Orchestral kit	MIDI NOTE NUMBER NORM	TECH
		–	–	–	–	–	–
C1	36	Bass Drum	36	36	Orchestral Bass Drum	36	36
	37	Rim Shot	37	47	Rim Shot	37	47
D1	38	Snare Drum 1	38	38	Orchestral Snare Drum 1	38	38
		Special Snare Drum	39	31	Castanets	39	55
E1		Snare Drum 2	40	32	Orchestral Snare Drum 2	40	32
		Floor Tom	41	95	Triangle	41	57
F1		Splash Cymbal	42	24	Cymbal Soft Mallet	42	24
		Tom Low	43	41	Ohchestral Tambourine	43	21
A1		Crash Cymbal Low	44	51	Orchestral Cymbal 1	44	51
		Tom Mid	45	43	Tam-Tam	45	30
B1		Crash Cymbal High	46	25	Orchestral Cymbal 2	46	25
C2		Tom High	47	45	Rattle	47	58
		Hi Hat Close 1	48	48	Tublar Bells C	48	84
		Hi Hat Close 2	49	49	Tublar Bells C'	49	85
		Hi Hat Open	50	50	Tublar Bells D	50	86
		Ride Bell	51	28	Tublar Bells D'	51	87
		Ride Cymbal	52	52	Tublar Bells E	52	88
		Conga Low	53	53	Tublar Bells F	53	89
		Small Conga Low	54	54	Tublar Bells F'	54	90
		Conga High	55	55	Tublar Bells G	55	91
		Small Conga High	56	56	Tublar Bells G'	56	92
		Conga Crash	57	57	Tublar Bells A	57	93
		Metal Cabasa	58	58	Tublar Bells A'	58	94
		Timbales Low	59	99	Tublar Bells B	59	95
		Timbales High	60	100	Tublar Bells c	60	96
		Cowbell Low	61	66	Tublar Bells c'	61	97
		Cowbell High	62	62	Tublar Bells d	62	98
		Agogo Low	63	102	Tublar Bells d'	63	99
		Agogo High	64	101	Timpani E	64	64
		Samba Whistle Low	65	65	Timpani F	65	65
		Samba Whistle High	66	66	Timpani F'	66	66
		Claves	67	67	Timpani G	67	67
		Slap	68	68	Timpani G'	68	68
	39	Hand Claps	69	69	Timpani A	69	69
		Tambourine	70	74	Timpani A'	70	70
		Shaker	71	96	Timpani B	71	71
		Triangle Mute	72	108	Timpani c	72	72
		Maracas	73	105	Timpani c'	73	73
		Triangle Open	74	107	Timpani d	74	74
		Guiro Short	75	77	Timpani d'	75	75
		Guiro Long	76	76	Timpani e	76	76
		Orchestral Bass Drum	77	85	Timpani f	77	77
		Orchestral Snare Drum	78	86	Wood Block Low	78	115
		Orchestral Cymbal	79	87	Wood Block Mid	79	116
		Wind Chime	80	29	Wood Block High	80	117
		Scratch 1	81	118	Hi Hat Close 1	81	48
		Vibraslap	82	111	Hi Hat Close 2	82	49
		Scratch 2	83	119	Hi Hat Open	83	50

* Sounds in SEQUENCER and MIDI function.

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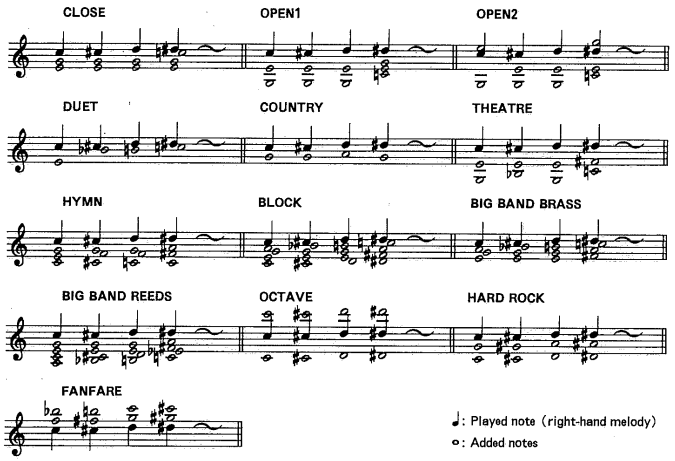
KEYBOARD PERCUSSION

		Sound Effect kit	MIDI NOTE NUMBER NORM	MIDI NOTE NUMBER TECH	General MIDI		MIDI NOTE NUMBER
B0		–	–	–	Bass Drum 2*		35
C1		Fret Noise	36	36	Bass Drum 1	36	36
D1		Picked Noise 1	37	47	Rim Shot	47	37
E1		Picked Noise 2	38	38	Snare Drum 1	38	38
F1		Picked Noise 3	39	31	Hand Claps	69	39
G1		Picked Noise 4	40	32	Snare Drum 2	32	40
A1		Sax Breath Noise	41	95	Floor Tom Low	95	41
B1		Flute Breath Noise	42	24	Hi Hat Close	48	42
C2		Slap Shot	43	26	Floor Tom High	✓	43
D2		Scratch 1	44	51	Hi Hat Pedal	✓	44
E2		Scratch 2	45	43	Tom Low	(41)	45
F2		Slap	46	25	Hi Hat Open	50	46
G2		Hand Claps	47	45	Tom Mid	43	47
A2		Applause 1	48	48	Tom High 1	45	48
B2		Applause 2	49	49	Crash Cymbal 1	25	49
C3		Whistle	50	50	Tom High 2	×	50
D3		Orchestra Hit Low	51	28	Ride Cymbal 1	52	51
E3		Orchestra Hit High	52	52	China Cymbal	✓	52
F3		Metal Hit Low	53	53	Ride Bell	28	53
G3		Metal Hit High	54	54	Tambourine	74	54
A3		Temple Block	55	55	Splash Cymbal	24	55
B3		Small Bell	56	56	Cowbell	66	56
C4		Sleigh Bell	57	57	Crash Cymbal 2	25	57
D4		Wind Chime	58	27	Vibraslap	111	58
E4		Tam-Tam	59	59	Ride Cymbal 2	×	59
F4		Gun Shot	60	100	Bongo High	×	60
G4		Explosion	61	66	Bongo Low	×	61
A4		Helicopter	62	62	Conga Mute Crash	57	62
B4		Train	63	102	Conga High	55	63
		Steam Whistle	64	101	Conga Low	53	64
		Telephone	65	65	Timbales High	100	65
		Wave 1	66	66	Timbales Low	99	66
		Wave 2	67	67	Agogo High	101	67
		Wind	68	96	Agogo Low	102	68
		Heart Beat	69	35	Cabasa	58	69
		Voice Ah	70	33	Maracas	105	70
		Voice Yeh	71	34	Samba Whistle Short	66	71
		Bird 1	72	108	Samba Whistle Long	65	72
		Bird 2	73	105	Guiro Short	77	73
		Bird 3	74	107	Guiro Long	76	74
		Bird 4	75	77	Claves	67	75
		Bird 5	76	76	Wood Block Mid	×	76
		Bird 6	77	85	Wood Block Low	×	77
		Bird 7	78	86	Cuica High	×	78
		Bullfrog	79	87	Cuica Low	×	79
		Little Dog	80	29	Triangle Mute	108	80
		Metronome Click	81	16	Triangle Open	107	81
		Metronome Bell	82	17	Shaker	96	82
		Square Click	83	15	Sleigh Bell		83

* Sounds in SEQUENCER and MIDI function.

TECHNI-CHORD TYPE

<Example: C major chord>



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REVERB

SINGLE DELAY	An echo effect, in which the original sound is repeated after a delay.	DELAY L	0	–	350 ms
		DELAY R	0	–	350 ms
		FEEDBACK L	–99	–	99
		FEEDBACK R	–99	–	99
		HIGH DUMP GAIN	–24	–	0 dB
		VOLUME	0	–	99

DELAY : Time difference between original sound and the repeat (ms).
FEEDBACK : Feedback volume (inverted when a minus level).
HIGH DUMP GAIN : Adjusts the degree of damping in the treble range.
VOLUME : Adjusts the volume of the sound to which the effect is applied.

MULTI TAP DELAY	An echo effect in which the length of the delay can be set to vary depending upon pan position.	DELAY 1	0	–	700 ms
		DELAY 2	0	–	700 ms
		DELAY 3	0	–	700 ms
		DELAY 4	0	–	700 ms
		PAN 1	0	–	99
		PAN 2	0	–	99
		PAN 3	0	–	99
		PAN 4	0	–	99
		FEED BACK	–99	–	99
		HIGH DUMP GAIN	–24	–	0 dB
		VOLUME	0	–	99

PAN : panning setting.

ROOM REVERB 1,2	Reverberations sound as if produced in a room (indoors) .	DEPTH	0	–	99
		REVERB TIME	0.1	–	10 S
		PRE DELAY	0	–	200 ms
		HIGH DUMP GAIN	–24	–	0 dB
		EARLY REFL LEVEL	0	–	99

DEPTH : Depth of the reverb.
REVERB TIME : The time it takes for the reverb effect to fade out.
PRE DELAY : The time elapsed between the beginning of the reverb effect.
EARLY REFL LEVEL : Adjusts the early-reflection level.

PLATE REVERB 1,2	A type of reverberation obtained from a reverb unit which utilizes the vibrations of a metal plate.	DEPTH	0	–	99
		REVERB TIME	0.1	–	10 S
		PRE DELAY	0	–	200 ms
		HIGH DUMP GAIN	–24	–	0 dB
		EARLY REFL LEVEL	0	–	99

CONCERT REVERB 1,2	Reverberations sound as if produced in a concert hall.	DEPTH	0	–	99
		REVERB TIME	0.4	–	30 S
		PRE DELAY	0	–	200 ms
		HIGH DUMP GAIN	–24	–	0 dB
		EARLY REFL LEVEL	0	–	99

DARK REVERB 1,2	Reverberations evoke images of darkness.	DEPTH	0	–	99
		REVERB TIME	0.4	–	30 S
		PRE DELAY	0	–	200 ms
		HIGH DUMP GAIN	–24	–	0 dB
		EARLY REFL LEVEL	0	–	99

REVERB

BRIGHT REVERB 1,2	Reverberations evoke images of brightness.	DEPTH	0	–	99
		REVERB TIME	0.4	–	30 S
		PRE DELAY	0	–	200 ms
		HIGH DUMP GAIN	–24	–	0 dB
		EARLY REFL LEVEL	0	–	99

WAVE REVERB 1,2	Reverberations evoke images of waves.	DEPTH	0	–	99
		REVERB TIME	0.4	–	30 S
		PRE DELAY	0	–	200 ms
		HIGH DUMP GAIN	–24	–	0 dB
		EARLY REFL LEVEL	0	–	99

DSP EFFECT

CHORUS	A natural fullness and richness is achieved by adding a sound of a slightly different pitch to the original sound.	DEPTH	0	–	99
		LFO SPEED	0	–	40.2 Hz
		LFO WAVEFORM	sin,tri,square		
		VOLUME	0	–	99
		REVERB SEND	0	–	99

DEPTH : Depth of the effect.
LFO SPEED : Transmission frequency of the LFO (low frequency oscillator) modulator.
LFO WAVEFORM : Waveform of the LFO (low frequency oscillator) modulator.
VOLUME : Volume of the sound to the effect is applied.
REVERB SEND : The volume sent to DIGITAL REVERB.

MODULATED CHORUS	A differently modulated chorus in which the swell is emphasized.	DEPTH	0	–	99
		SLOW LFO SPEED	0	–	40.2 Hz
		FAST LFO SPEED	0	–	40.2 Hz
		FAST LFO BALANCE	0	–	99
		LFO WAVEFORM	sin,tri,square		
		VOLUME	0	–	99
		REVERB SEND	0	–	99

FAST LFO BALANCE : The degree to which the fast LFO is applied.

ENHANCER	Emphasizes a specific frequency by shifting the phrase. Clarifies sound profile.	MANUAL	0	–	99
		LOW MIX	0	–	99
		HIGH MIX	0	–	99
		DELAY TIME L	0	–	350 ms
		DELAY TIME R	0	–	350 ms
		VOLUME	0	–	99
		REVERB SEND	0	–	99

MANUAL : Center frequency to which the effect is applied.
MIX : Adjusts the mix of the original sound and the harmonic.
DELAY TIME : Delay time.

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DSP EFFECT

FLANGER	An undulation is added,giving an intensity to sound s having many overtones (harmonics) .	DEPTH	0 – 99
		LFO SPEED	0 – 40.2 Hz
		RESONANCE	–99 – 99
		MANUAL	0 – 99
		PHASE	0 – 180 degree
		LFO WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99

RESONANCE : Feedback volume (inverted when a minus value).
PHASE : Phase difference between left and right modulation.

PHASER	A more distinct undulation effect than FLANGER. Ideal for electric piano type sounds.	DEPTH	0 – 99
		LFO SPEED	0 – 40.2 Hz
		RESONANCE	–99 – 99
		MANUAL	0 – 99
		PHASE	0 – 180 degree
		LFO WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99

ENSEMBLE	Produces the effect of many musical instruments being played together.	DEPTH	0 – 99
		LFO SPEED	0 – 40.2 Hz
		LFO WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99

GATED REVERB	Reverberation is applied for a limited time. An interesting effect can be obtained by muting a reverberation in the middle.	GATE TIME	10 – 2900 ms
		HIGH DUMP GAIN	–24 – 0 dB
		THRESHOLD	0 – 99
		MASK TIME	10 – 2900 ms
		VOLUME	0 – 99
		REVERB SEND	0 – 99

GATE TIME : The time period during which the effect is applied.
THRESHOLD : The boundary point at which the effect is applied.
MASK TIME : The time period during the effect is masked.

SINGLE DELAY	An echo effect,in which the original sound is repeated after a delay.	DELAY L	0 – 350 ms
		DELAY R	0 – 350 ms
		FEEDBACK L	–99 – 99
		FEEDBACK R	–99 – 99
		HIGH DUMP GAIN	–24 – 0 dB
		VOLUME	0 – 99
		REVERB SEND	0 – 99

DELAY : Time difference between original sound and the repeat (ms).
FEEDBACK : Feedback volume (inverted when a minus level).
HIGH DUMP GAIN : Adjusts the degree of damping in the treble range.
VOLUME : Adjusts the volume of the sound to which the effect is applied.

DSP EFFECT

MULTI TAP DELAY	An echo effect in which the length of the delay can be set to vary depending upon pan position.	DELAY 1	0 – 700 ms
		DELAY 2	0 – 700 ms
		DELAY 3	0 – 700 ms
		DELAY 4	0 – 700 ms
		PAN 1	0 – 99
		PAN 2	0 – 99
		PAN 3	0 – 99
		PAN 4	0 – 99
		FEED BACK	–99 – 99
		HIGH DUMP GAIN	–24 – 0 dB
		VOLUME	0 – 99
		REVERB SEND	0 – 99

PAN : panning setting.

DISTORTION	The sound is very distorted. A powerful effect when applied to a sound which is played solo.	DRIVE	0 – 99
		ADJUST	0 – 99
		VOLUME	0 – 99
		REVERB SEND	0 – 99

DRIVE : Degree of distortion.
ADJUST : The manner in which the effect is applied.

OVERDRIVE	A more natural distortion than the above effect, similar to that achieved with a vacuum tube amplifier.	DRIVE	0 – 99
		ADJUST	0 – 99
		VOLUME	0 – 99
		REVERB SEND	0 – 99

FUZZ	Powerful distortion effect ideal for electric guitar type sounds.	DRIVE	0 – 99
		ADJUST	0 – 99
		VOLUME	0 – 99
		REVERB SEND	0 – 99

EXCITER	Modulates sounds,clarifies sound profile,and projects sound forward.	DRIVE	0 – 99
		ADJUST	0 – 99
		EMPHASIS Fc	50 Hz – 16kHz
		EMPHASIS GAIN	0 – 99
		VOLUME	0 – 99
		REVERB SEND	0 – 99

EMPHASIS Fc : The frequency of the emphasis.
EMPHASIS GAIN : The volume of the emphasis.

COMPRESSOR	Compresses the dynamic range.	THRESHOLD	0 – 99
		RATIO	0 – 99
		ATTACK SENSITIVITY	0.001 – 0.1 S
		RELEASE SENSITIVITY	0.001 – 0.1 S
		VOLUME	0 – 99
		REVERB SEND	0 – 99

RATIO : The ratio of the effect.
ATTACK SENSITIVITY : Sensitivity of the effect at the time of attack (reaction speed) .
RELEASE SENSITIVITY : Sensitivity of the effect at the time of release (reaction speed) .

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DSP EFFECT

SLOW ATTACKER	Slows down the attack.	THRESHOLD	0 – 99
		ATTACK RATE	0.2 – 20.0 S
		RELEASE RATE	0.01 – 1.0 S
		VOLUME	0 – 99
		REVERB SEND	0 – 99

ATTACK RATE : Attack rate (slope).
RELEASE RATE : Release rate (slope).

PARAMETRIC EQ	An equalizer which sets sound quality for a precise frequency point.	BAND EMPHASIS 1 Fc	50 Hz – 16kHz
		BAND EMPHASIS 1 Q	0.1 – 20
		BAND EMPHASIS 1 G	−12 – 12 dB
		BAND EMPHASIS 2 Fc	50 Hz – 16kHz
		BAND EMPHASIS 2 Q	0.1 – 20
		BAND EMPHASIS 2 G	−12 – 12 dB
		BAND EMPHASIS 3 Fc	50 Hz – 16kHz
		BAND EMPHASIS 3 Q	0.1 – 20
		BAND EMPHASIS 3 G	−12 – 12 dB
		BAND EMPHASIS 4 Fc	50 Hz – 16kHz
		BAND EMPHASIS 4 Q	0.1 – 20
		BAND EMPHASIS 4 G	−12 – 12 dB
		BAND EMPHASIS 5 Fc	50 Hz – 16kHz
		BAND EMPHASIS 5 Q	0.1 – 20
		BAND EMPHASIS 5 G	−12 – 12 dB
		VOLUME	0 – 99
		REVERB SEND	0 – 99

BAND EMPHASIS Fc : Center frequency of the modified band.
BAND EMPHASIS Q : Sharpness of the curve of the frequency characteristic of the modified band.
BAND EMPHASIS G : Volume of emphasis/damping in the modified band.

AUTO PAN	Periodically shifts the sound's pan position.	DEPTH	0 – 99
		LFO SPEED	0 – 40.2 Hz
		PHASE	0 – 180 degree
		LFO WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99

VIBRATO	Modulates frequency in a vibrato pattern.	DEPTH	0 – 99
		LFO SPEED	0 – 40.2 Hz
		PHASE	0 – 180 degree
		LFO WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99

AUTO WAH	A filter effect which automatically changes peak frequency in response to an increase in the volume of the input.	RESONANCE	wide,middle,narrow
		MANUAL	0 – 99
		SWEEP RANGE	0 – 99
		VOLUME	0 – 99
		REVERB SEND	0 – 99

SWEEP RANGE : The range of frequencies to be changed.

DSP EFFECT

ROTARY SPEAKER	Produces sounds that seem to be emitted from rotary speakers.Ideal for organ type sounds.	DRIVE	0 – 99
		VOLUME ADJUST	0 – 99
		TREBLE DEPTH	0 – 99
		FAST	0 – 34.95 Hz
		SLOW	0 – 34.95 Hz
		WIND UP	1.0 – 61.0 S
		WIND DOWN	1.0 – 61.0 S
		BASS DEPTH	0 – 99
		FAST	0 – 34.95 Hz
		SLOW	0 – 34.95 Hz
		WIND UP	1.0 – 61.0 S
		WIND DOWN	1.0 – 61.0 S
		VOLUME	0 – 99
		SLOW/FAST	slow,fast
		REVERB SEND	0 – 99

WIND UP : The time it takes to reach the (TREBLE/BASS) FASTspeed when the speed is changed from slow to fast.
WIND DOWN : The time it takes to reach the (TREBLE/BASS) SLOW speed when the speed is changed from fast to slow.
SLOW/FAST : Switches speaker rotation speed between SLOW and FAST.

RING MODULATOR	Produces a metallic sound.Tends to sound off key.	OSC-SPEED	0 – 19.6 kHz
		PHASE	0 – 180 degree
		OSC WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99

OSC WAVEFORM : Oscillator waveform.
OSC SPEED : Oscillator frequency.

MIX UP	Mixes in LFO modulation.	DEPTH	0 – 99
		SLOW LFO SPEED	0 – 40.2 Hz
		FAST LFO SPEED L	0 – 40.2 Hz
		FAST LFO SPEED R	0 – 40.2 Hz
		PHASE	0 – 180 degree
		OSC WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99

SINGLE DELAY + CHORUS	Combines delay with chorus.	DELAY DRY/WET	0 – 99
		DELAY L	0 – 300 ms
		DELAY R	0 – 300 ms
		FEEDBACK L	−99 – 99
		FEEDBACK R	−99 – 99
		CHORUS DRY/WET	0 – 99
		DEPTH	0 – 99
		LFO SPEED	0 – 40.2 Hz
		LFO WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99

SINGLE DELAY + SINGLE DELAY	Combines two types of delay.	DELAY1 DRY/WET	0 – 99
		DELAY L	0 – 180 degree
		DELAY R	0 – 180 degree
		FEEDBACK L	−99 – 99
		FEEDBACK R	−99 – 99
		DELAY2 DRY/WET	0 – 99
		DELAY L	0 – 180 degree
		DELAY R	0 – 180 degree
		FEEDBACK L	−99 – 99
		FEEDBACK R	−99 – 99
		VOLUME	0 – 99
		REVERB SEND	0 – 99

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DSP EFFECT

SINGLE DELAY + FLANGER	Combines delay with flanger.	DELAY DRY/WET	0 – 99
		DELAY L	0 – 300 ms
		DELAY R	0 – 300 ms
		FEEDBACK L	–99 – 99
		FEEDBACK R	–99 – 99
		FLANGER DRY/WET	0 – 99
		DEPTH	0 – 99
		LFO SPEED	0 – 40.2 Hz
		RESONANCE	–99 – 99
		MANUAL	0 – 99
		PHASE	0 – 180 degree
		LFO WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99
SINGLE DELAY + VIBRATO	Combines delay with vibrato.	DELAY DRY/WET	0 – 99
		DELAY L	0 – 300 ms
		DELAY R	0 – 300 ms
		FEEDBACK L	–99 – 99
		FEEDBACK R	–99 – 99
		DEPTH	0 – 99
		LFO SPEED	0 – 40.2 Hz
		PHASE	0 – 180 degree
		LFO WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99
SINGLE DELAY + PHASER	Combines delay with phaser.	DELAY DRY/WET	0 – 99
		DELAY L	0 – 300 ms
		DELAY R	0 – 300 ms
		FEEDBACK L	–99 – 99
		FEEDBACK R	–99 – 99
		PHASER DRY/WET	0 – 99
		DEPTH	0 – 99
		LFO SPEED	0 – 40.2 Hz
		RESONANCE	–99 – 99
		MANUAL	0 – 99
		PHASE	0 – 180 degree
		LFO WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99
AUTO WAH + SINGLE DELAY	Combines auto wah with delay.	RESONANCE	wide,middle,narrow
		MANUAL	0 – 99
		SWEEP RANGE	0 – 99
		DELAY DRY/WET	0 – 99
		DELAY L	0 – 300 ms
		DELAY R	0 – 300 ms
		FEEDBACK L	–99 – 99
		FEEDBACK R	–99 – 99
		VOLUME	0 – 99
		REVERB SEND	0 – 99

DSP EFFECT

PEQ + CHORUS	Combines parametric equalizer with chorus.	BAND EMPHASIS 1 Fc	50 Hz – 16kHz
		BAND EMPHASIS 1 Q	0.1 – 20
		BAND EMPHASIS 1 G	–12 – 12 dB
		CHORUS DRY/WET	0 – 99
		DEPTH	0 – 99
		LFO SPEED	0 – 40.2 Hz
		LFO WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99
PEQ + SINGLE DELAY	Combines parametric equalizer with delay.	BAND EMPHASIS 1 Fc	50 Hz – 16kHz
		BAND EMPHASIS 1 Q	0.1 – 20
		BAND EMPHASIS 1 G	–12 – 12 dB
		DELAY DRY/WET	0 – 99
		DELAY L	0 – 300 ms
		DELAY R	0 – 300 ms
		FEEDBACK L	–99 – 99
		FEEDBACK R	–99 – 99
		VOLUME	0 – 99
		REVERB SEND	0 – 99
PEQ + FLANGER	Combines parametric equalizer with flanger.	BAND EMPHASIS 1 Fc	50 Hz – 16kHz
		BAND EMPHASIS 1 Q	0.1 – 20
		BAND EMPHASIS 1 G	–12 – 12 dB
		FLANGER DRY/WET	0 – 99
		DEPTH	0 – 99
		LFO SPEED	0 – 40.2 Hz
		RESONANCE	–99 – 99
		MANUAL	0 – 99
		PHASE	0 – 180 degree
		LFO WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99
PEQ + VIBRATO	Combines parametric equalizer with vibrato.	BAND EMPHASIS 1 Fc	50 Hz – 16kHz
		BAND EMPHASIS 1 Q	0.1 – 20
		BAND EMPHASIS 1 G	–12 – 12 dB
		DEPTH	0 – 99
		LFO SPEED	0 – 40.2 Hz
		PHASE	0 – 180 degree
		LFO WAVEFORM	sin,tri,square
		VOLUME	0 – 99
		REVERB SEND	0 – 99
PEQ + COMPRESSOR	Combines parametric equalizer with compressor.	BAND EMPHASIS 1 Fc	50 Hz – 16kHz
		BAND EMPHASIS 1 Q	0.1 – 20
		BAND EMPHASIS 1 G	–12 – 12 dB
		THRESHOLD	0 – 99
		RATIO	0 – 99
		ATTACK SENSITIVITY	0.001 – 0.1 S
		RELEASE SENSITIVITY	0.001 – 0.1 S
		VOLUME	0 – 99
		REVERB SEND	0 – 99

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DSP EFFECT

PEQ + COMPR + DIST	Combines parametric equalizer,compressor,and distortion.	BAND EMPHASIS 1 Fc	50 Hz	–	16kHz
		BAND EMPHASIS 1 Q	0.1	–	20
		BAND EMPHASIS 1 G	–12	–	12 dB
		THRESHOLD	0	–	99
		RATIO	0	–	99
		ATTACK SENSITIVITY	0.001	–	0.1 S
		RELEASE SENSITIVITY	0.001	–	0.1 S
		DRIVE	0	–	99
		ADJUST	0	–	99
		VOLUME	0	–	99
		REVERB SEND	0	–	99
PEQ + COMPR + OVERDR	Combines parametric equalizer,compressor,and overdrive.	BAND EMPHASIS 1 Fc	50 Hz	–	16kHz
		BAND EMPHASIS 1 Q	0.1	–	20
		BAND EMPHASIS 1 G	–12	–	12 dB
		THRESHOLD	0	–	99
		RATIO	0	–	99
		ATTACK SENSITIVITY	0.001	–	0.1 S
		RELEASE SENSITIVITY	0.001	–	0.1 S
		DRIVE	0	–	99
		ADJUST	0	–	99
		VOLUME	0	–	99
		REVERB SEND	0	–	99
PEQ + DIST + DELAY	Combines parametric equalizer,distortion,and delay.	BAND EMPHASIS 1 Fc	50 Hz	–	16kHz
		BAND EMPHASIS 1 Q	0.1	–	20
		BAND EMPHASIS 1 G	–12	–	12 dB
		DRIVE	0	–	99
		ADJUST	0	–	99
		DELAY DRY/WET	0	–	99
		DELAY L	0	–	300 ms
		DELAY R	0	–	300 ms
		FEEDBACK L	–99	–	99
		FEEDBACK R	–99	–	99
		VOLUME	0	–	99
		REVERB SEND	0	–	99
PEQ + OVERDR + DELAY	Combines parametric equalizer,overdrive,and delay.	BAND EMPHASIS 1 Fc	50 Hz	–	16kHz
		BAND EMPHASIS 1 Q	0.1	–	20
		BAND EMPHASIS 1 G	–12	–	12 dB
		DRIVE	0	–	99
		ADJUST	0	–	99
		DELAY DRY/WET	0	–	99
		DELAY L	0	–	300 ms
		DELAY R	0	–	300 ms
		FEEDBACK L	–99	–	99
		FEEDBACK R	–99	–	99
		VOLUME	0	–	99
		REVERB SEND	0	–	99

TONE

A PIANO
Piano
Bright Piano
E.Grand
E.Piano 1
E.Piano 2
Suitcase E.P.
Modern E.P.1
Modern E.P.2
Bell Piano

B HARPSI & MALLET
Harpsichord 1
Harpsichord 2
Clavi
Synth Clavi
Glockenspiel
Vibraphone
Celesta
Tubular Bells
Solid Bars
Steel Drum
Xylophone
Marimba
Bottle Marimba
African Mallet

C GUITAR
Classical Gtr.
Jazz Ac.Gtr.
Spanish Gtr.
Gtr.Harmonics
Folk Guitar
Electro Ac.Gtr.
Jazz Guitar
Bright Solid
Mellow Solid
Clean Solid
Fusion Solid
Mute Guitar
Funk Mute Gtr.
Distortion Gtr.
Overdrive Gtr.
Rock Harmonics
Country Gtr.
Hawaiian Gtr.1
Hawaiian Gtr.2

D SPECIAL PERCUSSION
Banjo
Mandolin
Harp
Orchestra Hit
Timpani
Music Box
Koto
Shamisen
Kalimba
Sitar
Dulcimer
Gamelan 1
Gamelan 2
Gamelan 3

E STRINGS & VOCAL
Clas. Strings 1
Clas. Strings 2
Marcato Str. 1
Marcato Str. 2
Pizzicato
Violin
Jazz Violin
Viola
Cello
Bowed Bass
Vocal Ah
Vocal Ooh 1
Vocal Ooh 2
Vocal Doo

F ORGAN & ACCORDION
Jazz Organ
Full Drawbars
Jazz Drawbars
16' & 1'
16' & 8'
16'
Pipe Organ 1
Pipe Organ 2
Brt.Accordion
Mel.Accordion
Musette

G BRASS
Brass 1
Brass 2
Trumpet 1
Trumpet 2
Orch.Trumpet
Mute Trumpet 1
Mute Trumpet 2
Flugel Horn
Cornet
Brt.Trombone
Mel.Trombone
Mute Trombone
Closed Fr.Horn
Open Fr.Horn
Tuba
Analog Brass
Saw Brass

H REED
Soprano Sax
Alto Sax
Mel.Alto Sax
Tenor Sax 1
Tenor Sax 2
Rock Tenor Sax
Baritone Sax
Jazz Clarinet 1
Jazz Clarinet 2
Clas.Clarinet
Mel.Clarinet
Bass Clarinet
Oboe
English Horn
Bassoon
Harmonica
Blues Harm.
Bagpipe

I FLUTE
Piccolo
Jazz Flute
Classic Flute
Alto Flute
Pan Flute
Recorder
Ocarina
Whistle
Shakuhachi

J BASS
Acoustic Bass
Mellow Ac.Bass
Electric Bass
Bright E.Bass
Fusion E.Bass
Funky E.Bass
Fretless Bass 1
Fretless Bass 2
Picked E.Bass
Mute Bass
Slap Bass 1
Pull Bass 1
Slap Bass 2
Pull Bass 2
Analog Bass
Soul Bass
Synth Chopper
Click Bass
Dance Bass
House Bass
Plastic Bass

K SYNTH BASICS
Click Sine
Sine Wave
Triangle Wave
Sawtooth Wave
Square Wave
Pulse Wave 1
Pulse Wave 2
Pulse Wave 3
Pulse Wave 4
Pulse Mod.
Organ Bell
Bright Bell
Digi Lead
Digi Wire
Crystal Wave
Bell Pad
Fog Vox
Mellow Ens.

L VARIOUS NOISE
White Noise
HiPass Noise
Sax Breath 1
Sax Breath 2
Flute Breath 1
Flute Breath 2
Flute Breath 3
Harpsi.key Off
Clavi key Off
Organ Click
Slap Shot
Pick Noise 1
Pick Noise 2
Pick Noise 3
Fret Noise
Gtr.Resonanse 1
Gtr.Resonanse 2
Ambient Hammer
Hammer

M SOUND EFFECTS
Scratch 1
Scratch 2
Voice Ah
Voice Yeh
Bird 1
Bird 2
Bird 3
Bird 4
Gun Shot
Helicopter
Telephone
Applause
Seashore

N DRUMS & PERCUSSION
Rock Bass Dr.
Elect. Bass Dr.
Dance Bass Dr.
House Bass Dr.
Soul Bass Dr.
Orch.Bass Dr.
Rock Snare
Soul Snare
House Snare
Analog Snare
Piccolo Snare
Orch.Snare
Reverse Snare
Melodic Tom
Electric Tom
Elect.Bass Tom
Analog Tom
Brush Short
Brush Long
Rim 1
Rim 2
Rim 3
HiHat Closed 1
HiHat Closed 2
HiHat Open 1
HiHat Open 2
Crash Cymbal
Splash Cymbal
China Cymbal
Orch.Cymbal
Ride Cymbal 1
Ride Cymbal 2
Ride Bell
Reverse Cymbl 1
Reverse Cymbl 2
Conga 1
Conga 2
Bongo
Timbales 1
Timbales 2
Samba Drum
Samba Drum Mute
Wood Block
Claves
Castanets
Slap
Hand Claps
Maracas
Cabasa
Shaker
Guiro Short
Guiro long
Cuica 1
Cuica 2
Triangle Mute
Triangle Open
Agogo
Cowbell
Sleigh Bell
Tambourine 1
Tambourine 2
Orch.Tamb.
Crickets
Vibraslap
Samba Whistle
Wind Chime

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DIGITAL EFFECT

EFFECT	PARAMETER	RANGE
CELESTE1•2	DEPTH	0 – 50
	SPEED	0 – 50
	DETUNE	−50 – +50
	DELAY	0 – 50
	BALANCE	0 – 100
	INTENSITY	−50 – +50
	REVERB DEPTH	−5 – +5
CHORUS1•2	DEPTH	0 – 50
	SPEED	0 – 50
	DETUNE	−50 – +50
	DELAY	0 – 50
	BALANCE	0 – 100
	INTENSITY	−50 – +50
	REVERB DEPTH	−5 – +5
ENSEMBLE1•2	DEPTH1	0 – 50
	SPEED1	0 – 50
	DEPTH2	0 – 50
	SPEED2	0 – 50
	DETUNE	−50 – +50
	DELAY	0 – 50
	INTENSITY	−50 – +50
	REVERB DEPTH	−5 – +5
TREMOLO	DEPTH	0 – 50
	SPEED	0 – 50
	WAVE	SIN/TRI/SQR/SAW
	BALANCE	0 – 100
	INTENSITY	−50 – +50
	REVERB DEPTH	−5 – +5

EFFECT	PARAMETER	RANGE
ORGAN TREMOLO	DEPTH1	0 – 50
	SPEED1	0 – 50
	DEPTH2	0 – 50
	SPEED2	0 – 50
	INTENSITY	−50 – +50
	REVERB DEPTH	−5 – +5
SINGLE DELAY	DELAY	0 – 50
	DETUNE	−50 – +50
	KEY SHIFT	−24 – +24
	BALANCE	0 – 100
	INTENSITY	−50 – +50
	REVERB DEPTH	−5 – +5
REPEAT DELAY	SPEED	0 – 30
	DECAY	0 – 30
	SUSTAIN	0 – 30
	RELEASE	0 – 30
	INTENSITY	−50 – +50
	REVERB DEPTH	−5 – +5
SOLO EFFECT1	DISTORTION	ON / OFF
	TOUCH DEPTH	0 – 50
	DEPTH	0 – 100
	REVERB DEPTH	−5 – +5
SOLO EFFECT2	DISTORTION	ON / OFF
	TOUCH DEPTH	0 – 50
	DEPTH	0 – 100
	INTENSITY	−50 – +50
	REVERB DEPTH	−5 – +5

MIDI Implementation Chart

Keyboard [SX−KN3000] (Transmitted)

Function		RIGHT1,2,LEFT, PART4~15	PART16	ACMP1	ACMP2,3	BASS	DRUMS	CHORD	CONTROL	Remarks
Basic	Default	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	memorized
Channel	Changed	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	
Mode	Default	3	3	3	3	3	3	3	3	OMNI OFF,POLY MODE
	Messages	×	×	×	×	×	×	×	×	
	Altered	–	–	–	–	–	–	–	–	
Note Number		0-119	0-119	0-119	0-119	0-119	0-119	0-119	–	Changes depending on the position of the transpose control,octave shift,and drums type.
	True voice	–	–	–	–	–	–	–	–	
Velocity	Note ON	○	○	○	○	○	○	○	–	
	Note OFF	×	×	×	×	×	×	×	–	
After Touch	Key's	×	×	×	×	×	×	×	–	
	Ch's	○× *	×	×	×	×	×	×	–	
Pitch Bend		○× *	×	○× *	○× *	○× *	×	○× *	×	
Control Change	0,32	○× *	○× *	○× *	○× *	○× *	○× *	○× *	×	bank select MSB, LSB
	1	○× *	×	○× *	○× *	○× *	×	○× *	×	modulation
	6,38	○× *	×	×	×	×	×	×	×	data entry MSB, LSB
	7	○× *	○× *	○× *	○× *	○× *	○× *	○× *	×	volume
	10	○× *	×	○× *	○× *	○× *	×	×	×	panpot
	11	○× *	○× *	○× *	○× *	○× *	○× *	×	○× *	expression
	64	○× *	×	○× *	○× *	○× *	×	×	×	sustain
	80	×	×	○× *	×	×	×	×	×	auto play chord
	82	×	×	×	×	×	○× *	×	×	intro, fill in, ending
	91	○× *	○× *	○× *	○× *	○× *	○× *	○× *	○× *	reverb
	93	○× *	○× *	×	×	×	×	×	×	DSP effect
	94	○× *	×	○× *	○× *	○× *	×	○× *	×	digital effect
	100,101	○× *	×	×	×	×	×	×	×	RPN LSB, MSB
	120	○	○	×	×	×	×	×	×	all sound off
	121	○× *	○× *	×	×	×	×	×	×	reset all cotrollers
Prog Change		○× *	○× *	○× *	○× *	○× *	○× *	○× *	×	Changes depending on program change mode and prog.cng to p.mem.
	True #	–	–	–	–	–	–	–	–	
System exclusive		○								
System common	Song Pos	○× *								
	Song Sel	○× * (0-19)								
	Tune	×								
System Real Time	Clock	○								
	Commands	○× *								start/stop,continue
Aux Messages	Local ON/ OFF	×	×	×	×	×	×	×	–	
	All notes OFF	×	×	×	×	×	×	×	–	
	Active Sense	○								
	Reset	×								
Notes		○× *……Whether or not the data for each of these items is transmitted can be set.								

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

Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO ×:No

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MIDI Implementation Chart

Keyboard [SX−KN3000] (Recognized)

Function		RIGHT1,2,LEFT, PART4~15	PART16	ACMP1	ACMP2,3	BASS	DRUMS	CHORD	CONTROL	Remarks
Basic Channel	Default	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	memorized
	Changed	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	
Mode	Default	3	3	3	3	3	3	3	3	OMNI OFF,POLY MODE
	Messages	×	×	×	×	×	×	×	×	
	Altered	–	–	–	–	–	–	–	–	
Note Number		0-127	0-127	0-127	0-127	0-127	0-127	0-127	–	Changes depending on the position of the transpose control,octave shift, and drums type.
	True voice	0-127	0-127	0-127	0-127	0-127	0-127	0-127	–	
Velocity	Note ON	○	○	○	○	○	○	○	–	
	Note OFF	×	×	×	×	×	×	×	–	
After Touch	Key's	×	×	×	×	×	×	×	–	
	Ch's	○× *	×	×	×	×	×	×	–	
Pitch Bend		○× *	×	○× *	○× *	○× *	×	○× *	×	
Control Change	0,32	○× *	○× *	○× *	○× *	○× *	○× *	○× *	×	bank select MSB, LSB
	1	○× *	×	○× *	○× *	○× *	×	○× *	×	modulation
	6,38	○× *	×	×	×	×	×	×	×	data entry MSB, LSB
	7	○× *	○× *	○× *	○× *	○× *	○× *	○× *	×	volume
	10	○× *	×	○× *	○× *	○× *	×	×	×	panpot
	11	○× *	○× *	○× *	○× *	○× *	○× *	×	○× *	expression
	64	○× *	×	○× *	○× *	○× *	×	×	×	sustain
	80	×	×	○× *	×	×	×	×	×	auto play chord
	82	×	×	×	×	×	○× *	×	×	intro, fill in, ending
	91	○× *	○× *	○× *	○× *	○× *	○× *	○× *	○× *	reverb
	93	○× *	○× *	×	×	×	×	×	×	DSP effect
	94	○× *	×	○× *	○× *	○× *	×	○× *	×	digital effect
	100,101	○× *	×	×	×	×	×	×	×	RPN LSB, MSB
	120	○	○	○	○	○	○	○	×	all sound off
	121	○× *	○× *	○× *	○× *	○× *	○× *	○× *	×	reset all cotrollers
Prog Change		○× *	○× *	○× *	○× *	○× *	○× *	○× *	×	Changes depending on program change mode and prog.cng to p.mem.
	True #	0-127	0-127	0-127	0-127	0-127	0-127	0-127	–	
System exclusive		○								
System common	Song Pos	○× *								
	Song Sel	○× * (0-19)								
	Tune	×								
System Real Time	Clock	○								
	Commands	○× *								start/stop,continue
Aux Messages	Local ON/ OFF	×	×	×	×	×	×	×	–	
	All notes OFF	○	○	○	○	○	○	○	–	
	Active Sense	○								
	Reset	×								
Notes		○× *·····Whether or not the data for each of these items is received can be set.								

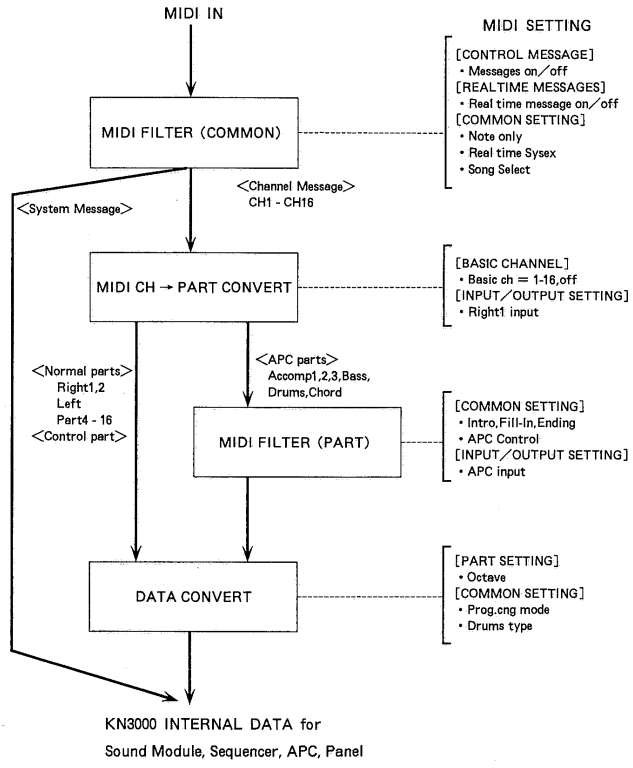
Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO ○:Yes

Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO ×:No

MIDI DATA FORMAT

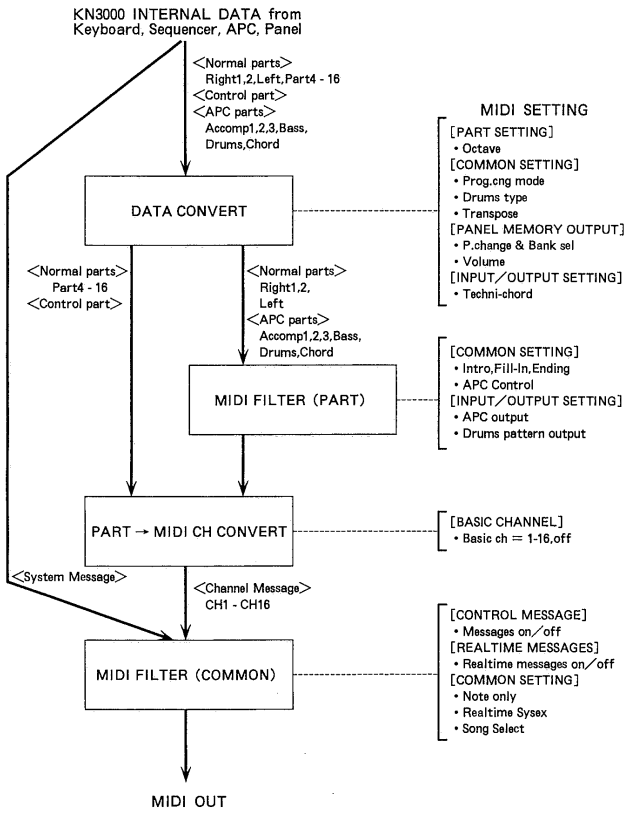
MIDI DATA FLOWCHART

<MIDI INPUT>



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<MIDI OUTPUT>



Message format

■ Channel voice message

Note off

8nH	Note off status
kk	Note number
vv	Velocity

n: 0—F Basic channel
kk: 00H—7FH Note number
vv: 00H—7FH Velocity
•This status is not used during transmission; rather, velocity=0 is transmitted with the note on status.

Note on

9nH	Note on status
kk	Note number
vv	Velocity

n: 0—F Basic channel
kk: 00H—7FH Note number
vv: 01H—7FH Velocity
00H Note off

Control change

Bank select

BnH	Control change status
00H	Bank select (MSB)
mm	Bank select value (MSB)
(BnH)	Control change status
20H	Bank select (LSB)
ll	Bank select value (LSB)

n: 0—F Basic channel
mm,ll : 00H—7FH
•Indicates program change bank. Used when program change mode is set to Normal mode or Technics mode.
•Reception of ACCOMP 1,2,3,BASS,and DRUMS bank select is possible only during COMPOSER record.

Modulation

BnH	Control change status
01H	Modulation
vv	Modulation depth value

n: 0—F Basic channel
vv: 00H—7FH
•Reception of ACCOMP 1,2,3 and BASS modulation is possible only during COMPOSER record.

Data entry

BnH	Control change status
06H	Data entry (MSB)
mm	Data entry value (MSB)
(BnH)	Control change status
26H	Data entry (LSB)
ll	Data entry value (LSB)

n: 0—F Basic channel
mm,ll: Values conform to the parameters specified for the RPN.

Volume

BnH	Control change status
07H	Part volume
vv	Part volume value

n: 0—F Basic channel
vv: 00H—7FH

Panpot

BnH	Control change status
0AH	Panpot
vv	Panpot value

n: 0—F Basic channel
vv: 00H—7FH
•Reception of ACCOMP 1,2,3 and BASS panpot is possible only during COMPOSER record.

Expression

BnH	Control change status
0BH	Expression
vv	Expression value

n: 0—F Basic channel
vv: 00H—7FH
•The expression for the CONTROL part is the total expression as regulated by the pedal operation.

Sustain

BnH	Control change status
40H	Sustain
vv	Sustain on/off

n: 0—F Basic channel
vv: 00H—3FH (00H) Off
40H—7FH (7FH) On
•Transmitted data is indicated by parentheses().
•Reception of ACCOMP 1,2,3 and BASS sustain is possible only during COMPOSER record.

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Auto Play Chord

BnH	Control change status
50H	APC message
vv	APC message value

n: 0－F Basic channel
vv: 00H =Off
01H =FINGERED
02H =ONE FINGER
03H =PIANIST

•Transmitted／received on the basic channel for the ACCOMP 1 part.

Rhythm control

BnH	Control change status
52H	Rhythm control message
vv	Rhythm control data

n: 0－F Basic channel
vv: 00H =off
01H =FILL IN 1
02H =ENDING 1
03H =INTRO 1
05H =FILL IN 2
06H =ENDING 2
07H =COUNT INTRO
08H =INTRO 2

•Transmitted／received on the basic channel for the DRUMS part.

Reverb

BnH	Control change status
5BH	Reverb
vv	Reverb on／off

n: 0－F Basic channel
vv (CONTROL part): 00H－3FH (00H) Off
40H－7FH (7FH) On
vv (Other parts): 00H－7FH

•Transmitted data is indicated by parentheses().
•The Reverb for the CONTROL part is the total reverb.

Digital effect

BnH	Control change status
5EH	Digital effect
vv	Digital effect on／off

n: 0－F Basic channel
vv: 00H－3FH (00H) Off
40H－7FH (7FH) On

•Transmitted data is indicated by parentheses().
•Transmission/reception of the DIGITAL EFFECT for ACCOMP 1,2,3 and BASS is possible only during COMPOSER record.

DSP effect

BnH	Control change status
5DH	DSP effect
vv	DSP effect on／off

n: 0－F Basic channel
vv: 00H－7FH

•Transmitted data is indicated by parentheses().

RPN

BnH	Control change status
65H	RPN (MSB)
mm	RPN data number (MSB)
(BnH)	Control change status
64H	RPN (LSB)
ll	RPN data number (LSB)

n: 0－F Basic channel
mm,ll :The most significant byte (MSB) and least significant byte (LSB) of the parameter number specified for the RPN.

The RPN which can be transmitted／received are Pitch Bend Sensitivity, Fine Tuning, Coarse Tuning (corresponding respectively to the Pitch bend Range, Tuning and Key Shift of the KN3000), and RPN reset.

RPN		Data Entry		
MSB	LSB	MSB	LSB	
00H	00H	mm	---	Pitch Bend Sensitivity mm:00H - 0CH (0 - 12semi-tones) ll:igored •Up to 1 octave can be specified in semi-tone increments.
00H	01H	mm	ll	Fine Tuning mm,ll:00H,00H - 40H,00H -7FH,7FH (－128＊100／128-0-127＊100／128cents) •ll:00H or40H (lower 6 bits ignored) •Can be specified in 100／128 cent increments.
00H	02H	mm	---	Coarse Tuning mm,34H - 40H - 4CH(－12 - 0 - +12semi-tones) ll:ignored •Up to 1 octave can be specified insemi-tone increments.
7FH	7FH	---	---	RPN Reset mm,ll:ignored •For when the RPN number is not specified. •The internal set value doesnot change.

Program change

CnH	Program change status
pp	Program change value

n: 0－F Basic channel
pp: 00H－7FH Program change value
Normal mode: Numbers are correspond to the SW of the SOUND GROUP(the variation is indicated by the Bank Select).
Technics mode: Numbers are standardized among Technics modes(Bank Select also used).
GM:GM program change numbers.
•The Program Change for the Drums part is recognized as a change in the rhythm pattern select.
•Reception of ACCOMP 1,2,3,BASS and DRUMS program change is possible only during COMPOSER record.

Channel pressure (After Touch)

DnH	Channnel pressure status
VV	Channnel pressure value

n: 0－F Basic channel
vv: 00H－7FH

Pitch bend change

EnH	Pitch bend status
ll	Pitch bend value (LSB)
mm	Pitch bend value (MSB)

n: 0－F Basic channel
ll ,mm: 00H－7FH Pitch bend data
•The Pitch Bend Range is determined by the Pitch Bend Range(Pitch Bend Sensitivity)of each part.
•Reception of accomp 1,2,3 and BASS pitch bend change is possible only during COMPOSER record.

■ Channel mode message

All sound off

BnH	Channel mode status
78H	All sound off
00H	Dummy data

n: 0－F Basic channel

Reset all controllers

BnH	Channel mode status
79H	Reset all controllers
00H	Dummy data

n: 0－F Basic channel

All note off

BnH	Channel mode status
7BH	All note off
00H	Dummy data

n: 0－F Basic channel
Receive only

OMNI off

BnH	Channel mode status
7CH	OMNI off
00H	Dummy data

n: 0－F Basic channel
•Processed in same manner as when ALL Note off is received.

OMNI on

BnH	Channel mode status
7DH	OMNI on
00H	Dummy data

n: 0－F Basic channel
•Processed in same manner as when ALL Note off is received. Does not change to OMNI on.

MONO

BnH	Channel mode status
7EH	MONO
00H	Dummy data

n: 0－F Basic channel
•Processed in same manner as when ALL Note off is received. Does not change to MONO.

POLY

BnH	Channel mode status
7FH	POLY
00H	Dummy data

n: 0－F Basic channel
•Processed in same manner as when ALL Note off is received.

■ System common message

Song position pointer

F2H	Song position pointer
ll	Least significant
mm	Most significant

ll,mm: 00H - 7FH

Song select

F3H	Song select
ss	Song number

ss: 0－19

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■ System real time message

Timing Clock

F8H	Timing clock

Start

FAH	Start

Continue

FBH	Continue

Stop

FCH	Stop

Active Sense

FEH	Active sense

System exclusive

F0H	System exclusive status
ii	ID number
dd	data
:	:
dd	data
F7H	End of exclusive status

ii: 7EH(universal non-real time ID),
50H(Technics ID)

dd: 00H－7FH

About the KN3000 MIDI exclusive

Outline of KN3000 MIDI exclusive

- KN3000 MIDI exclusive
  - Universal system exclusive
    - GM on
    - GM off
  - Technics MIDI exclusive
    - transmission／reception of Individual data
    - data dump
    - data request
    - transmission／reception of tempo data

Universal system exclusive Message format

Turn General MIDI System On:

F0H	Exclusive status
7FH	ID of target device (7F:Broadcast)
09H	sub-ID #1 = General MIDI message
01H	sub-ID #2 = General MIDI on
F7H	EOX

Turn General MIDI System Off:

F0H	Exclusive status
7FH	ID of target device (7F:Broadcast)
09H	sub-ID #1 = General MIDI message
02H	sub-ID #2 = General MIDI off
F7H	EOX

Technics MIDI exclusive Message format

■ Type of messages and their forms

SOX	Exclusive status
IDC	Technics ID number
CMD	Command ID
PC	Keyboard category ID
MD	Model differentiating ID
VER	Exclusive version ID
[data]	Body of data
EOX	End of exclusive

Messages are transmitted in order, beginning with SOX, IDC, etc. and continuing to the end.
The form of the transmission message differs depending on the type of command.

■ Explanation of messages

SOX: Indicates the start of exclusive

F0H	Exclusive status

IDC: Product manufacturer differentiating ID

50H	Technics ID number

CMD: Indicates type of transmission data and commands.

21H	HRQ: Hand shake request
22H	HRT: Hand shake routine
23H	ACK: Acknowledge
24H	NAK: Negative Acknowledge
25H	TMP: Tempo data
27H	EOK: End of Block
28H	END: End
29H	ERR: Error
2AH	FUL: Memory full
2BH	DRQ: Data request
2CH	ITR: Individual data
2DH	BTR: Data block
7EH	CDD: Continuing data

PC: Technics product category ID

01H	KN
7EH	DMY: Dummy data for ACK,NAK,EOK,END, ERR,FUL

MD: Model differentiating ID

20H	KN3000

VER: Exclusive version control ID

10H	Ver 2-0

[data]: Body of data

•[data] for Individual data, Data dump, and Data request.

ADR	ADR(MSB)	ADDRESS MSB (7bit)
	ADR	: (7bit)
	ADR(LSB)	ADDRESS LSB (7bit)
SIZ	SIZ(MSB)	MSB of the address length of relevant data from the above address. (7bit)
	SIZ	: (7bit)
	SIZ(LSB)	LSB of the address length of relevant data from the above address. (7bit)
DT		data
:		:
CN		Continue ID
SM		Checksum

ADR :
Indicates address length of beginning data. The type of data is recognized by this value. The 21-bit address is divided into 3bytes of 7 bits each, and is sent in order beginning with the upper end. (Refer to the address map.)

SIZ :
Indicates length of address from ADR. (Refer to the address map.) The 21-bit address length is divided into 3 bytes of 7 bytes each,and is sent in order beginning with the upper end.
If a size not consistent with the data is indicated, data request is ineffective. If the data request concerns the data dump, then dummy data is sent, although it has no significance.

DT :
Body of transmitted data. The 8-bit data is divided into 2 bytes of 4 bits each, and is sent in order beginning with the upper end.
Note that SIZ = number of bytes in DT divided by 2.

CN : Indicates data continue／discontinue
00h STP : End of data
01H CNT : More data follows
(CMD of next packet is CDD)
The number of bytes in one exclusive packet is 256. In a transmission where the number of bytes exceeds one packet, CN = CNT, and the continuing data is transmitted in the continuing data (CMD = CDD) format.

SM : Checksum
Checksum for checking data errors.
Based on EXCLUSIVE-OR operation from IDC to CN.

•[data] for Tempo.

DT1	Data LSB
DT2	Data MSB

DT2, DT1 : 02H, 08H - 12H,0Ch
(♩ =40-300)
Tempo data is 9bit Binary (= 101000～100101100)
The lower 4 bits is expressed as DT1, and the remaining upper 5 bits as DT2. DT1 is sent first followed by DT2.

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■ The form of the transmission message

Function	SOX	IDC	CMD	PC	MD	VER	[data]					EOX
	=F0H	=50H		=01H	=20H	=10H	ADR	SIZ	DT	CN	SM	=F7H
Hand shake request	SOX	IDC	HRQ	PC	MD	VER	–	–	–	–	–	EOX
Hand shake routine	SOX	IDC	HRT	PC	MD	VER	–	–	–	–	–	EOX
Acknowledge	SOX	IDC	ACK	DMY	–	–	–	–	–	–	–	EOX
Negative Acknowledge	SOX	IDC	NAK	DMY	–	–	–	–	–	–	–	EOX
End of Block	SOX	IDC	EOK	DMY	–	–	–	–	–	–	–	EOX
End	SOX	IDC	END	DMY	–	–	–	–	–	–	–	EOX
Error	SOX	IDC	ERR	DMY	–	–	–	–	–	–	–	EOX
Memory full	SOX	IDC	FUL	DMY	–	–	–	–	–	–	–	EOX
Tempo data	SOX	IDC	TMP	–	–	–	–	–	DT	–	–	EOX
Data request	SOX	IDC	DRQ	PC	MD	VER	ADR	SIZ	–	CN	SM	EOX
Individual data												
System data	SOX	IDC	ITR	PC	MD	VER	ADR	SIZ	DT	CN	SM	EOX
Part data	SOX	IDC	ITR	PC	MD	VER	ADR	SIZ	DT	CN	SM	EOX
Data dump												
Sound Memory												
header	SOX	IDC	BTR	PC	MD	VER	ADR	SIZ	DT	CN	SM	EOX
parameter	SOX	IDC	BTR	PC	MD	VER	ADR	SIZ	DT	CN	SM	EOX
Panel												
panel total data	SOX	IDC	BTR	PC	MD	VER	ADR	SIZ	DT	CN	SM	EOX
panel memory	SOX	IDC	BTR	PC	MD	VER	ADR	SIZ	DT	CN	SM	EOX
Composer												
location	SOX	IDC	BTR	PC	MD	VER	ADR	SIZ	DT	CN	SM	EOX
header	SOX	IDC	BTR	PC	MD	VER	ADR	SIZ	DT	CN	SM	EOX
performance	SOX	IDC	BTR	PC	MD	VER	ADR	SIZ	DT	CN	SM	EOX
Sequencer												
location	SOX	IDC	BTR	PC	MD	VER	ADR	SIZ	DT	CN	SM	EOX
header	SOX	IDC	BTR	PC	MD	VER	ADR	SIZ	DT	CN	SM	EOX
performance	SOX	IDC	BTR	PC	MD	VER	ADR	SIZ	DT	CN	SM	EOX
Continuing data	SOX	IDC	CDD	–	–	–	–	–	DT	CN	SN	EOX

■ MIDI exclusive address map

ADDRESS (Hex)		Area	Subarea	Sub-subarea
ADR MSB~LSB	ADDRESS (21bit)			
20 00 00~	080000H~	SYSTEM		REAL TIME
20 08 00~	080400H~	PART	COMMON	REAL TIME
20 60 00~	081800H~	PART	SPECIAL	REAL TIME
30 00 00~	0C0000H~	SOUND MEMORY	HEADER	NON-REAL TIME
30 00 10~	0C0010H~		PARAMETER	NON-REAL TIME
40 00 00~	100000H~	PANEL	PANEL DATA	NON-REAL TIME
41 00 00~	104000H~		PANEL MEMORY	NON-REAL TIME
50 00 00~	140000H~	COMPOSER	LOCATION	NON-REAL TIME
50 00 60~	140060H~		HEADER	NON-REAL TIME
50 27 40~	1413C0H~		PERFORMANCE	NON-REAL TIME
60 00 00~	180000H~	SEQUENCER	LOCATION	NON-REAL TIME
60 10 00~	180800H~		HEADER	NON-REAL TIME
61 30 00~	185800H~		PERFORMANCE	NON-REAL TIME

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Classification of individual data and data dump areas

Individual data area:

System	
Part	(Common/special)

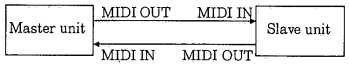
Data dump area:

Sound Memory	(Header+Parameter)
Panel	(Panel data+Panel Memory)
Composer	(Location+Header+Performance)
Sequencer	(Location+Header+Performance)

One-way transmission and handshake transmission

In one-way transmission,communication takes place in one direction only,that is from the master unit to the slave unit.

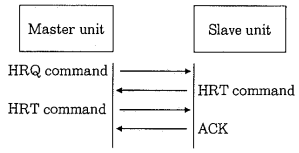
In handshake transmission,the transmission status between the master unit and slave unit is being confirmed during data transmission. For this reason, a MIDI cable connection from the slave unit to the master unit is also necessary. In comparison to one-way transmission, handshake transmission is faster.



In the KN3000, the transmission mode is switched automatically between handshake transmission and one-way transmission. Communication begins with handshake transmission, and if there is no response from the slave unit within a given time, communication switches automatically to one-way transmission.

Communication sequence between master unit and slave unit

■ Comunication sequence of handshake confirmation



HRQ command: handshake request

SOX	F0H
IDC	50H
HRQ	21H
PC	01H
MD	20H
VER	10H
EOX	F7H

HRT command: handshake routine

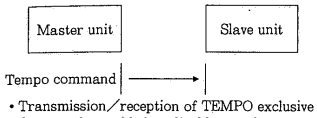
SOX	F0H
IDC	50H
HRT	22H
PC	01H
MD	20H
VER	10H
EOX	F7H

ACK: Acknowledge

SOX	F0H
IDC	50H
ACK	23H
DMY	7EH
EOX	F7H

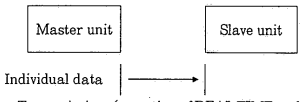
- There is no END command.
- If there is no response from the slave unit to the master unit even after the above handshake confirmation routine is performed three times,it is interpreted as inability to transmit handshake transmission data, and the transmission mode switches to one-way transmission (in the case of a MIDI sequencer, etc.) .
- Handshake communication is possible only during data dump.

■ Sequence of tempo data communication



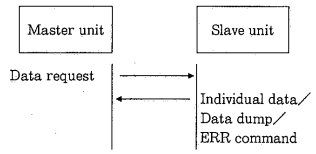
- Transmission/reception of TEMPO exclusive data can be enabled or disabled by the NOTE ONLY setting of the MIDI settings.

■ Sequence of individual data communication

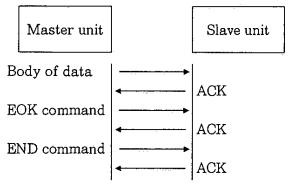


- Transmission/reception of REAL TIME exclusive data can be enabled or disabled by the COMMON SETTING setting of the MIDI settings.

■ Sequence of data request communication



■ Sequence of data dump communication



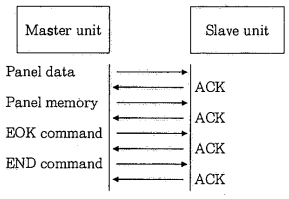
- Data dump is possible only while the SYSEX BULK DUMP display is selected during MIDI function setting.

In the KN3000, data is divided into five types: TOTAL KEYBOARD, PANEL MEMORY, SOUND MEMORY, COMPOSER, and SEQUENCER.

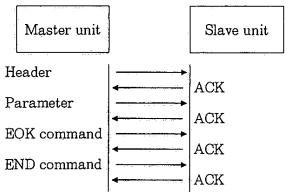
After the above handshake routine is concluded and communication link is established, the various kinds of data are respectively transmitted as described below.
For one-way transmission, the transmission interval between packets is more than 50 msec.

The number of bytes in one exclusive packet is 256. In a transmission where the number of bytes exceeds one packet, the continuing data is transmitted in the continuing data(CMD=CDD) format.

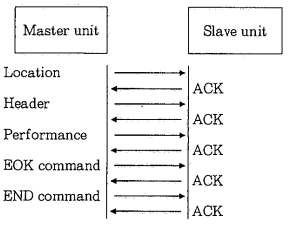
● Panel



● Sound memory

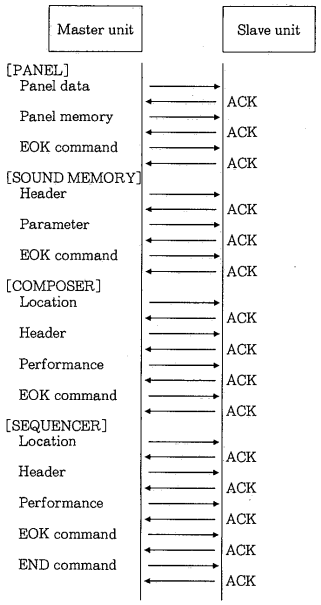


● Composer data,Sequencer data



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● All data



● SIZ of data dump area

SIZ MSB	SIZ LSB	Area	Subarea
00 00 10		SOUND MEMORY	HEADER
01 6F 70			PARAMETER
00 0D 00		PANEL	PANEL DATA
01 10 00			PANEL MEMORY
00 00 60		COMPOSER	LOCATION
00 26 60			HEADER
Variable			PERFORMANCE
00 10 00		SEQUENCER	LOCATION
01 20 00			HEADER
Variable			PERFORMANCE

● ADR of data request concerns the data dump

ADR MSB	ADR LSB	Area
30 00 00		SOUND MEMORY
40 00 00		PANEL
50 00 00		COMPOSER
60 00 00		SEQUENCER

SYSTEM AND PART PARAMETER

ADR(HEX) MSB	ADR(HEX) LSB	SIZ(HEX) MSB	SIZ(HEX) LSB	PARAMETER	DATA(HEX) RANGE	DISCRIPTION	NOTE *1
SYSTEM REAL TIME							
20 00 00		00 00 01		MASTER TUNING	C0-00-3F	427.3-440.0-453.0	QR
20 00 01		00 00 01		SCALE TYPE	00-01	00H:Equal.Temperament, 01H:Piano Tuning	QR
20 00 02		00 00 01		TRANSPOSE	00-05-0B	G-C-F#	QRT
20 00 03		00 00 01		OVERALL TOUCH SENSITIVITY	00-09	0-9	QR
20 00 10		00 00 01		PANEL MEMORY NUMBER	00-18	Off, 1-1, 1-2, ***, 3-8	QRT
20 00 11		00 00 01		PANEL MEMORY EXPAND MODE	00-01	00H:Normal, 01H:Expand	QR
20 00 12		00 00 01		MUSIC STYLE ARRANGER STYLE	00-04	00H:Off, 01H-04H:1-4	QRT
20 00 13		00 00 01		MUSIC STYLE ARRANGER MODE	01-03	01H:Rhythm 02H:Sound&Rhythm 03H:Panel Memory	QR
20 00 20		00 00 02		MANUAL SEQUENCE PADS CNG&BANK SELECT	00-7F 00-FF	00-127 00-255	RT
PART COMMON REAL TIME							
20 08 00		00 00 01		TOTAL EXPRESSION	00-7F	0-127	QRT
20 08 08		00 00 01		TECHNI-CHORD ON,/OFF	00-01	00H:Off, 01H:On	QRT
20 08 09		00 00 01		TECHNI-CHORD TYPE	00-0C	00H:Close, 07H:Block 01H:Open1 08H:Big Band Brass 02H:Open2 09H:Big Band Reeds 03H:Duet, 0AH:Octave 04H:Country 0BH:Hard Rock 05H:Theatre 0CH:Fanfare 06H:Hymn	QR
20 08 10		00 00 01		REVERB TOTAL ON,/OFF	00-7F	00H:Off 7FH:On	QRT
20 08 11		00 00 01		REVERB TYPE	09-1B	10H:Room Reverb1 17H:Dark Reverb2 11H:Room Reverb2 18H:Bright Reverb1 12H:Plate Reverb1 19H:Bright Reverb2 13H:Plate Reverb2 1AH:Wave Reverb1 14H:Concert Reverb1 1BH:Wave Reverb2 15H:Concert Reverb2 09H:Single Delay 16H:Dark Reverb1 0AH:Multi Tap Delay	QR
20 08 21		00 00 01		DSP EFFECT TYPE	01-63	01H:Chorus 34H:Auto Wah 02H:Modulated Chorus 35H:Rotary Speaker 03H:Enhancer 36H:Ring Modulator 04H:Flanger 38H:Mix up 05H:Phaser 40H:Single Delay＊Chorus 06H:Ensemble 41H:Single Delay＊Single Delay 08H:Gated Reverb 42H:Single Delay＊Flanger 09H:Single Delay 43H:Single Delay＊Vibrato 0AH:Multi Tap Delay 44H:Single Delay＊Phaser 20H:Distortion 46H:Auto Wah＊Single Delay 21H:Overdrive 47H:PEQ＊Chorus 22H:Fuzz 48H:PEQ＊Single Delay 23H:Exciter 49H:PEQ＊Flanger 24H:Compressor 4AH:PEQ＊Vibrato 25H:Slow Attacker 4BH:PEQ＊Compressor 27H:Parametric Equalizer 60H:PEQ＊Cmprs＊Distortion 30H:Auto Pan 61H:PEQ＊Cmprs＊Overdrive 32H:Vibrato 62H:PEQ＊Distortion＊Delay 63H:PEQ＊Overdrive＊Delay	QR
20 08 22		00 00 01		DSP EFFECT to REVERB send value	00-99		
PART SPECIAL REAL TIME							
20 60 00		00 00 02		RHYTHM PROG. CNG & Bank Select	00-7F 00-FF	0-127 0-255	QRT *2
20 60 02		00 00 01		APC TYPE	00-03	00H:Off 01H:One Finger 02H:Fingered 03H:Pianist	QRT *3
20 60 03		00 00 01		APC MEMORY ON,/OFF	00-01	00H:Off, 01H:On	QRT *3
20 60 04		00 00 01		DYNAMIC ACMP ON,/OFF	00-01	00H:Off, 01H:On	QRT
20 60 08		00 00 01		SYNCHRO,/BREAK	00-01	00H:Off, 01H:On	QRT *4
20 60 09		00 00 01		VARIATION	00-03	00H:Vari1, 01H:Vari2, 02H:Vari3, 03H:Vari4	QRT *4
20 60 0A		00 00 01		INTRO	00-02	00H:Off, 01H:Intro1 On, 02H:Intro2 On	RT *4
20 60 0B		00 00 01		COUNT INTRO	00-01	00H:Off, 01H:On	RT *4
20 60 0C		00 00 01		FILL IN	00-02	00H:Off, 01H:Fill In1 On, 02H:Fill In2 On	RT *4
20 60 0E		00 00 01		ENDING	00-02	00H:Off, 01H:Enging1 On, 02H:Enging2 On	RT *4

*1 Q: When Data Request is received, the relevant data is sent.
R: Data reception possible.
T: Data transmission possible.
*2 Corresponds to Technics numbers on the rhythm map.
*3 Not transmitted,/received when APC MODE ENABLE = 0 (disable) .
*4 Not transmitted,/received when FILL IN, INTRO ENABLE = 0(disable) .

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HOW TO USE MIDI PRESETS

The KN3000 can be connected to any MIDI equipped musical Instrument.
To connect the KN3000 to another instrument use a standard MIDI cable and connect the MIDI OUT socket of the MASTER UNIT (the one you are playing) to the MIDI IN socket of the SLAVE UNIT.

MIDI Presets are designed to help you set up the KN3000 quickly and easily for use with various other instruments.
There are two pages of MIDI Presets,the first with the KN3000 as the master unit and the second with the KN3000 as the slave. On the appropriate page highlight the other product type that you are using and select whether or not you want to use Auto Play Chord, and press OK.
Many applications are very simple, but the following guidelines should be helpful with more complicated setups.

■MIDI PRESETS FOR CONNECTING AN ORGAN TO THE KN3000 USING AUTO PLAY CHORD.

MASTER UNIT		MIDI PRESET	
EQUIPMENT	PLAY STYLE	TYPE	APC
ORGAN (ALL)	FINGERED	MASTER : ORGAN TYPE1	WITH APC
	ONE FINGER *	MASTER : ORGAN TYPE2	WITH APC

* TURN ON ONE FINGER(FA/GA/EA) OR FINGERED1(OTHERS) AND TURN DOWN APC VOLUME ON THE ORGAN.

■MIDI PRESETS FOR CONNECTING AN ORGAN TO THE KN3000 WITHOUT AUTO PLAY CHORD.

MASTER UNIT		MIDI PRESET	
EQUIPMENT	PLAY STYLE	TYPE	APC
ORGAN (FA/GA/EA)	---	MASTER : ORGAN TYPE2	WITHOUT APC
ORGAN (OTHERS)	---	MASTER : ORGAN TYPE1	WITHOUT APC

■MIDI PRESETS FOR CONNECTING THE KN3000 TO AN ORGAN USING AUTO PLAY CHORD.

SLAVE UNIT		MIDI PRESET	
EQUIPMENT	PLAY STYLE	TYPE	APC
ORGAN (FA/GA/EA)	---	SLAVE : ORGAN TYPE2	WITH APC
ORGAN (OTHERS)	---	SLAVE : ORGAN TYPE1	WITH APC

■MIDI PRESETS FOR CONNECTING THE KN3000 TO AN ORGAN WITHOUT AUTO PLAY CHORD.

SLAVE UNIT		MIDI PRESET	
EQUIPMENT	PLAY STYLE	TYPE	APC
ORGAN (FA/GA/EA)	---	SLAVE : ORGAN TYPE2	WITHOUT APC
ORGAN (OTHERS)	---	SLAVE : ORGAN TYPE1	WITHOUT APC

■MIDI PRESETS FOR CONNECTING A PR PIANO TO THE KN3000 USING AUTO PLAY CHORD.

MASTER UNIT		MIDI PRESET	
EQUIPMENT	PLAY STYLE	TYPE	APC
PR (307/305/303)	FINGERED	MASTER : PR PIANO TYPE1	WITH APC
PR (OTHERS)	FINGERED	MASTER : ORGAN TYPE1	WITH APC
PR (ALL)	ONE FINGER	MASTER : PR PIANO TYPE2	WITH APC
PR (ALL)	PIANIST	MASTER : PX PIANO	WITH APC

■MIDI PRESETS FOR CONNECTING A PR PIANO TO THE KN3000 WITHOUT AUTO PLAY CHORD.

MASTER UNIT		MIDI PRESET	
EQUIPMENT	PLAY STYLE	TYPE	APC
PR (307/305/303)	---	MASTER : PR PIANO TYPE2	WITHOUT APC
PR (OTHERS)	---	MASTER : PR PIANO TYPE1	WITHOUT APC

■MIDI PRESETS FOR CONNECTING THE KN3000 TO A PR PIANO USING AUTO PLAY CHORD.

SLAVE UNIT		MIDI PRESET	
EQUIPMENT	PLAY STYLE	TYPE	APC
PR (307/305/303)	---	SLAVE : PR PIANO TYPE2	WITH APC
PR (OTHERS)	---	SLAVE : PR PIANO TYPE1	WITH APC

■MIDI PRESETS FOR CONNECTING THE KN3000 TO A PR PIANO WITHOUT AUTO PLAY CHORD.

SLAVE UNIT		MIDI PRESET	
EQUIPMENT	PLAY STYLE	TYPE	APC
PR (307/305/303)	---	SLAVE : PR PIANO TYPE2	WITHOUT APC
PR (OTHERS)	---	SLAVE : PR PIANO TYPE1	WITHOUT APC

[NOTES]

1. About "KEYBOARD TYPE1" and "KEYBOARD TYPE2".
   KEYBOARD TYPE1 : Equipment which does not have MIDI presets.
   KEYBOARD TYPE2 : Equipment which has MIDI presets.
   = KN3000, KN2000, KN1200, KN700, KN901,KN701, KN501, etc.

2. If you use a MIDI preset to connect any other instrument (except a PX piano) to the KN3000 using Auto Play Chord , the KN3000 will be set to MIDI clock.
   This means that the KN3000's Rhythm will start & stop from the start/stop button of the master unit and the tempo will be controlled by the master unit. It is preferable to set the Rhythm and Accompaniment balances of the master unit to zero to avoid any unpleasant clashes with the KN3000's Rhythm & Accompaniment.

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