
SX-GA1 / SX-GA3 REFERENCE GUIDE

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DEMO PERFORMANCE

GA1

Style Demo	SHOW	SOUND	PIANO
	BIG BAND		GUITAR
	ORCHESTRA (Tschaikowsky : Swan Lake)		STRINGS
ORGAN	JAZZ ORGAN		BRASS BAND (J.P.Sousa : The stars and stripes forever)
	EUROPEAN		SOLO BRASS
	GOSPEL		SYNTH
	BOSSANOVA		RHYTHM
PIPE ORGAN	ORGAN SAMBA		
	8BT BALLAD		
	COUNTRY		
	FOXTROT		
		BROADWAY SHOW	

• Demonstration performances for which no source is indicated are Technics original compositions.

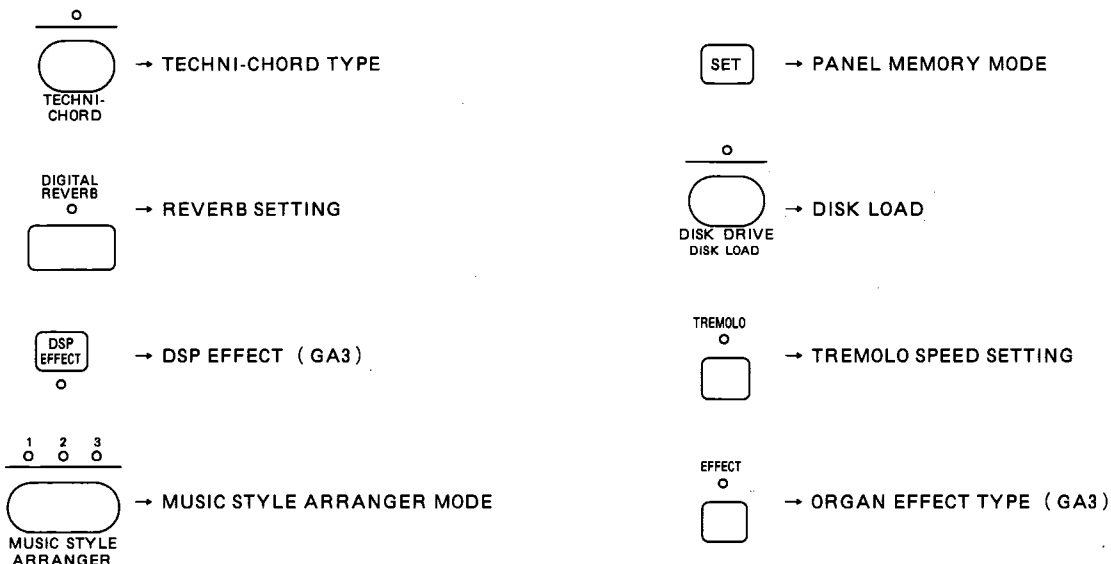
DEMO PERFORMANCE

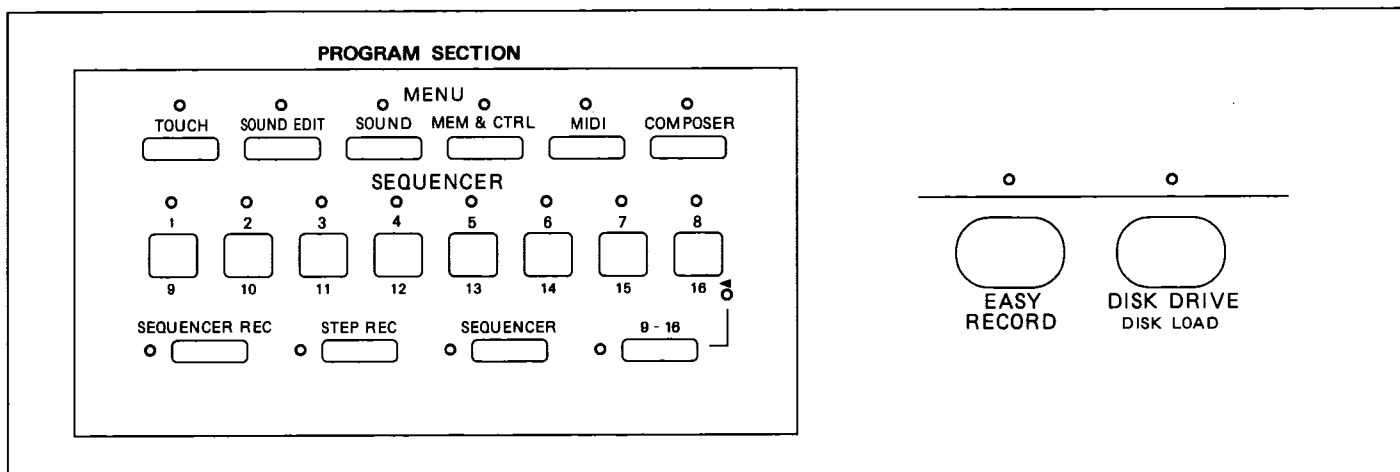
GA3

Style Demo	SHOW	SOUND	PIANO
	BIG BAND		GUITAR
	ORCHESTRA (Tschaikowsky : Swan Lake)		STRINGS
	FILM SCORE		BRASS BAND (J.P.Sousa : The stars and stripes forever)
	MODERN LATIN		SOLO BRASS
ORGAN	JAZZ ORGAN		SYNTH
	EUROPEAN	RHYTHM	ORGAN WALTZ
	GOSPEL		ORGAN SAMBA
	BOSSANOVA		8BT BALLAD
	PIPE ORGAN		COUNTRY
	THEATRE ORGAN		FOXTROT
	BROADWAY SHOW		

• Demonstration performances for which no source is indicated are Technics original compositions.

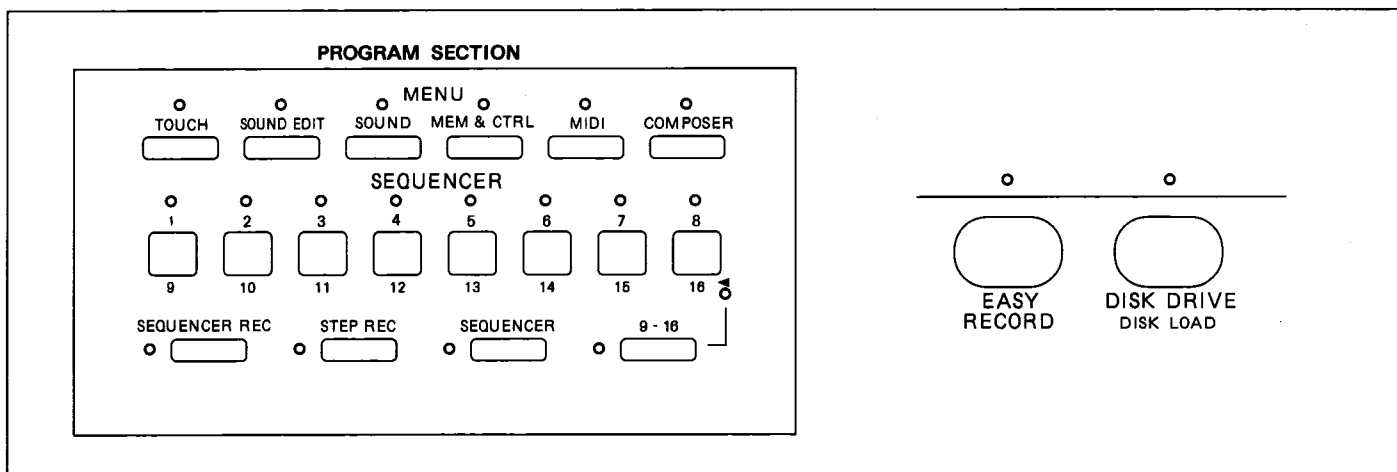
EASY SETTING (Press and hold)





BUTTON	MENU	FUNCTION	
TOUCH	INITIAL TOUCH SENSITIVITY		
	TOUCH SENSE PART SETTING		
SOUND EDIT	EASY EDIT		
	GENERAL EDIT	OCTAVE SHIFT VIBRATO AUTO BEND&TRILL	
	TONE EDIT	TONE VOLUME & PITCH ENVELOPE FILTER	
	EFFECT EDIT		
SOUND	PART SETTING	SUSTAIN BRILLIANCE REVERB PAN KEY VOLUME TUNING BEND ASSIGN	
		REVERB	
		TREMOLO SPEED	
		MASTER TUNE	
	TECHNI-CHORD TYPE		
	GLIDE RANGE		
	MEM&CTRL	INITIAL SETTING	
		SWITCH ASSIGN	
POWER-ON MODE			
PANEL MEMORY MODE			
MIDI	MUSIC STYLE ARRANGER MODE		
	CHANNEL		
	CONTROL		
	OCTAVE & LOCAL SETTING		
	REALTIME		
	COMMON	SETTING1 SETTING2	
	MIDI PRESETS		
	INPUT		
	OUTPUT		
	SYSEX DUMP		
	GENERAL MIDI		

BUTTON	MENU	FUNCTION
COMPOSER	RECORD MEM-A	
	RECORD MEM-B	
	MODE SELECT	
	PATTERN COPY	
	LOAD SINGLE PATTERN	
SEQUENCER REC	REALTIME RECORD	
STEP REC	STEP RECORD	
SEQUENCER	PUNCH RECORD	
	TRACK ASSIGN	
	EXPRESSION SETTING	
	EDIT	SONG CLEAR TRACK CLEAR TRACK MERGE QUANTIZE MEASURE ERASE MEASURE COPY MEASURE DELETE MEASURE INSERT VELOCITY CHANGE
	PLAY	
	MEDLEY	
EASY RECORD	EASY RECORD	
DISK DRIVE	DISK SAVE	
	DISK LOAD	
	MIDI FILE LOAD	
	MIDI FILE SAVE	
	DISK FORMAT	
	LOAD SINGLE COMPOSER PATTERN	
LOAD SINGLE SOUND MEMORY		



BUTTON	MENU	FUNCTION	
TOUCH	INITIAL TOUCH SENSITIVITY		
	TOUCH SENSE PART SETTING		
SOUND EDIT	EASY EDIT		
	GENERAL EDIT	OCTAVE SHIFT VIBRATO AUTO BEND&TRILL MODULATION DISTORTION CONTROLLERS AFTER TOUCH	
	TONE EDIT	TONE LEVEL ENVELOPE ENVELOPE KEY FOLLOW FILTER	
	EFFECT EDIT		
SOUND	PART SETTING	SUSTAIN BRILLIANCE REVERB DSP EFFECT PAN KEY SHIFT VOLUME TUNING BEND RANGE ASSIGN MODE	
		REVERB SETTING	
		DSP EFFECT	
		TREMOLO SETTING	
		MASTER TUNING	
		TECHNI-CHORD TYPE	
		GLIDE SETTING	
		ORGAN EFFECT	
		MEM&CTRL	INITIAL SETTING
		MEM&CTRL	SWITCH ASSIGN
		MEM&CTRL	POWER-ON MODE
MEM&CTRL	PANEL MEMORY MODE		
MEM&CTRL	MUSIC STYLE ARRANGER MODE		
MEM&CTRL	OUTPUT SETTING		

BUTTON	MENU	FUNCTION	
MIDI	BASIC CHANNEL		
	CONTROL MESSAGE		
	OCTAVE SHIFT & LOCAL ON/OFF		
	REALTIME MESSAGES		
	COMMON SETTING & P.MEM OUTPUT	SETTING1 SETTING2 SETTING3 PANEL MEMORY LOCAL CONTROL PANEL MEMORY PROGRAM CHANGE	
	MIDI PRESETS		
	INPUT SETTING		
	OUTPUT SETTING		
	SYSEX BULK DUMP		
	GENERAL MIDI		
	COMPOSER	RECORD MEMORY-A	
RECORD MEMORY-B			
MODE SELECT			
PATTERN COPY			
LOAD SINGLE COMPOSER PATTERN			
SEQUENCER REC	REALTIME RECORD		
STEP REC	STEP RECORD		
SEQUENCER	PUNCH RECORD		
	TRACK ASSIGN		
	EXPRESSION SETTING		
	AFTER TOUCH SETTING		
	EDIT	SONG CLEAR TRACK CLEAR TRACK MERGE QUANTIZE MEASURE ERASE MEASURE COPY MEASURE DELETE MEASURE INSERT VELOCITY CHANGE	
	PLAY		
	MEDLEY		
	EASY RECORD	EASY RECORD	
	DISK DRIVE	DISK SAVE	
		DISK LOAD	
MIDI FILE LOAD			
MIDI FILE SAVE			
DISK FORMAT			
LOAD SINGLE COMPOSER PATTERN			
LOAD SINGLE SOUND MEMORY			

UPPER / LOWER ORGAN PRESET

GA1

ORGAN GROUP PRESET NAME		MIDI PROGRAM CHANGE DATA NORM=TECH		
UPPER	LOWER	ORGAN TYPE		
ELECTRONIC TABS				
		Standard	Theatre	U.S.trad.
WARM SOLO	WARM TABS	0 (0)	0 (1)	0 (2)
LIGHT JAZZ	TYPICAL 8' & 4'	1 (0)	1 (1)	1 (2)
THEATRE SOLO	DOUBLE OCTAVE	2 (0)	2 (1)	2 (2)
CONTINENTAL	RICH FLUTES	3 (0)	3 (1)	3 (2)
WARM & BRIGHT	MANY PITCHES	4 (0)	4 (1)	4 (2)
MAIN THEME	SHARP 8'	5 (0)	5 (1)	5 (2)
CELLO TAB	IN THE MIDDLE	6 (0)	6 (1)	6 (2)
LIGHT FLUTES	WIDE FLUTES	7 (0)	7 (1)	7 (2)
FULL THEATRE	FULL LOWER	8 (0)	8 (1)	8 (2)
MANUAL	MANUAL	64 (0)	64 (1)	64 (2)
DRAWBARS				
		Jazz	Standard	
BOSSA DRAWBAR	8'+1' COMBO	0 (4)	0 (5)	
SMOKIN' 'B'	JAZZ ACCOMP 1	1 (4)	1 (5)	
8' 4' 2' COMBO	EIGHT TO ONE	2 (4)	2 (5)	
POP DRAWBARS	8'+4' CLICK	3 (4)	3 (5)	
NOVELTY D.BRS	POP ACCOMP	4 (4)	4 (5)	
MELLOW MIX	JAZZ ACCOMP 2	5 (4)	5 (5)	
16'+1' COMBO	MELLOW MIX	6 (4)	6 (5)	
LUSCIOUS SND.	EVEN+ODD MIX	7 (4)	7 (5)	
FULL DRAWBARS	FULL FOOTAGE	8 (4)	8 (5)	
MANUAL	MANUAL	64 (4)	64 (5)	
PIPE ORGAN				
		Classical		
CHIFF 16'	FLUTE & DIAP.	0 (12)		
BASIC 16'+8'	BASIC 8'+8'	1 (12)		
HYMN 1	MIXED 8' COMB	2 (12)		
HYMN 2	BRIGHT & OPEN	3 (12)		
HYMN 3	SOFT MIXTURE	4 (12)		
FULL ORGAN 1	WARM REEDS	5 (12)		
FULL ORGAN 2	MELLOW REEDS	6 (12)		
TUTTI 1	FULL ORGAN	7 (12)		
TUTTI 2	FULL+REEDS	8 (12)		
MANUAL	MANUAL	64 (12)		

•The numbers in parentheses () are bank data.

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

SOUND	MIDI PROGRAM CHANGE DATA			SOUND	MIDI PROGRAM CHANGE DATA		
	NORM	TECH	GM		NORM	TECH	GM
PIANO				BRASS			
Grand Piano	6 (0)	0 (0)	1	Brass	10 (0)	56 (0)	62
Upright Piano	6 (1)	2 (32)	—	Octave Brass	10 (1)	56 (16)	—
Mellow Piano	6 (2)	2 (0)	—	Trumpet	10 (2)	48 (0)	57
Piano 1 Oct.	6 (3)	0 (16)	—	Jazz Mute Tpt	10 (3)	50 (0)	60
Rock Piano	6 (4)	3 (32)	—	Fligel Horn	10 (4)	51 (0)	—
Honky Tonk	6 (5)	1 (16)	4	Bri.Trombone	10 (5)	52 (0)	58
Piano 2 Oct.	6 (6)	2 (16)	—	Brass & Synth	10 (6)	56 (48)	—
SoloPiano 16'	6 (7)	0 (48)	—	Orch. Trumpet	10 (7)	48 (32)	—
Bright Piano	6 (8)	1 (0)	2	Cornet	10 (8)	49 (16)	—
Elect. Grand	6 (9)	3 (0)	3	Orch. Trombone	10 (9)	52 (16)	—
Midi Grand	6 (10)	0 (32)	—	Close Fr.Horn	10 (10)	54 (0)	—
Jangle Piano	6 (11)	1 (48)	—	Open Fr.Horn	10 (11)	54 (16)	61
E PIANO/HARPSI				MALLET			
E.Piano 1	7 (0)	5 (0)	5	Glockenspiel	0 (0)	9 (0)	10
E.Piano 2	7 (1)	5 (32)	—	Vibraphone	0 (1)	8 (0)	12
Modern E.P.1	7 (2)	6 (0)	6	Marimba	0 (2)	10 (0)	13
Modern E.P.2	7 (3)	4 (0)	—	Xylophone	0 (3)	11 (0)	14
Harpsichord	7 (4)	16 (0)	7	Tubular Bells	0 (4)	14 (0)	15
Synth Clavi	7 (5)	115 (0)	—	Steel Drum	0 (5)	15 (0)	115
E.Piano 3	7 (6)	5 (48)	—	Celesta	0 (6)	12 (0)	9
Modern E.P.3	7 (7)	6 (48)	—	Chrysoglott	0 (7)	8 (48)	—
Bell Piano	7 (8)	116 (16)	—	Wind Chime	0 (8)	14 (16)	—
Double Harpsi	7 (9)	16 (16)	—	BottleMarimba	0 (9)	13 (0)	—
Cembalo	7 (10)	18 (0)	—	AfricanMallet	0 (10)	113 (0)	—
Clavi	7 (11)	17 (0)	8	Caribb Mallet	0 (11)	11 (16)	—
GUITAR				SPECIAL PERC			
Classical Gtr	8 (0)	20 (0)	—	Banjo	1 (0)	33 (0)	106
Bright Ac.Gtr	8 (1)	21 (0)	25	Harp	1 (1)	32 (0)	47
Jazz Guitar	8 (2)	25 (0)	27	Orchestra Hit	1 (2)	127 (16)	56
Bright Solid	8 (3)	26 (0)	28	Timpani	1 (3)	126 (0)	48
Country Gtr	8 (4)	31 (16)	—	Kalimba	1 (4)	39 (0)	109
Hawaiian Gtr	8 (5)	31 (0)	—	Koto	1 (5)	37 (0)	108
Folk Guitar	8 (6)	22 (0)	26	Mandolin	1 (6)	35 (0)	—
12 String Gtr	8 (7)	23 (0)	—	Music Box	1 (7)	7 (0)	11
Mellow Solid	8 (8)	28 (0)	—	Sitar	1 (8)	38 (0)	105
Mute Guitar	8 (9)	29 (0)	29	Dulcimer	1 (9)	38 (16)	16
DistortionGtr	8 (10)	30 (0)	31	Shamisen	1 (10)	36 (0)	107
Overdrive Gtr	8 (11)	27 (32)	30	Taiko Drum	1 (11)	123 (48)	117
STRINGS/VOCAL				REED			
Strings	9 (0)	100 (0)	49	Jazz Clarinet	2 (0)	68 (0)	72
Soft Strings	9 (1)	101 (32)	—	Clas. Clarinet	2 (1)	69 (0)	—
Pizzicato	9 (2)	99 (0)	46	German Oboe	2 (2)	66 (0)	69
Violin	9 (3)	96 (0)	41	Bri. Accordion	2 (3)	80 (0)	22
Choir Ah	9 (4)	104 (0)	—	Musette	2 (4)	82 (0)	—
Vocal Ooh	9 (5)	104 (32)	—	Harmonica	2 (5)	83 (0)	23
Slow Strings	9 (6)	101 (0)	50	Soft Clarinet	2 (6)	68 (16)	—
OctaveStrings	9 (7)	102 (0)	—	French Oboe	2 (7)	66 (16)	—
Synth Strings	9 (8)	103 (0)	51	English Horn	2 (8)	67 (0)	70
Jazz Violin	9 (9)	96 (16)	—	Bassoon	2 (9)	70 (0)	71
Cello	9 (10)	97 (0)	43	Mel. Accordion	2 (10)	81 (0)	—
Pop Vocal Ah	9 (11)	104 (48)	53	BluesHarmnica	2 (11)	83 (16)	—

SOUND	MIDI PROGRAM CHANGE DATA			SOUND	MIDI PROGRAM CHANGE DATA		
	NORM	TECH	GM		NORM	TECH	GM
SAX/FLUTE				SYNTH			
Soprano Sax	3 (0)	76 (0)	65	Synth Brass	4 (0)	60 (0)	64
Alto Sax	3 (1)	77 (0)	66	Syn.Brass Ens	4 (1)	61 (16)	63
Mellow Alto	3 (2)	77 (16)	—	Square Lead	4 (2)	117 (0)	81
Tenor Sax	3 (3)	78 (48)	—	Saw Lead	4 (3)	118 (16)	82
Breathy Tenor	3 (4)	78 (16)	67	Fantasia	4 (4)	116 (32)	89
Jazz Flute	3 (5)	65 (0)	74	Dream	4 (5)	108 (32)	—
Rock Tenor	3 (6)	79 (0)	—	Air Vox	4 (6)	106 (16)	86
Baritone Sax	3 (7)	79 (16)	68	Pluck Organ	4 (7)	112 (0)	—
Piccolo	3 (8)	64 (0)	73	Polysynth	4 (8)	102 (32)	91
Classic Flute	3 (9)	65 (16)	—	Spacy Pad	4 (9)	107 (32)	92
Alto Flute	3 (10)	64 (16)	—	Crystal Ens.	4 (10)	120 (0)	93
Pan Flute	3 (11)	72 (0)	76	Metal Pad	4 (11)	106 (32)	94
MEMORY A				MEMORY B			
Memory A-1	11 (0)	0 (128)	—	Memory B-1	5 (0)	18 (128)	—
Memory A-2	11 (1)	1 (128)	—	Memory B-2	5 (1)	19 (128)	—
Memory A-3	11 (2)	2 (128)	—	Memory B-3	5 (2)	20 (128)	—
Memory A-4	11 (3)	3 (128)	—	Memory B-4	5 (3)	21 (128)	—
Memory A-5	11 (4)	4 (128)	—	Memory B-5	5 (4)	22 (128)	—
Memory A-6	11 (5)	5 (128)	—	Memory B-6	5 (5)	23 (128)	—
Memory A-7	11 (6)	6 (128)	—	Memory B-7	5 (6)	24 (128)	—
Memory A-8	11 (7)	7 (128)	—	Memory B-8	5 (7)	25 (128)	—
Memory A-9	11 (8)	8 (128)	—	Memory B-9	5 (8)	26 (128)	—
Memory A-10	11 (9)	9 (128)	—	Memory B-10	5 (9)	27 (128)	—
Memory A-11	11 (10)	10 (128)	—	Memory B-11	5 (10)	28 (128)	—
Memory A-12	11 (11)	11 (128)	—	Memory B-12	5 (11)	29 (128)	—
Memory A-13	11 (12)	12 (128)	—	Memory B-13	5 (12)	30 (128)	—
Memory A-14	11 (13)	13 (128)	—	Memory B-14	5 (13)	31 (128)	—
Memory A-15	11 (14)	14 (128)	—	Memory B-15	5 (14)	32 (128)	—
Memory A-16	11 (15)	15 (128)	—	Memory B-16	5 (15)	33 (128)	—
Memory A-17	11 (16)	16 (128)	—	Memory B-17	5 (16)	34 (128)	—
Memory A-18	11 (17)	17 (128)	—	Memory B-18	5 (17)	35 (128)	—

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BASS PEDALS

GA1

SOUND	MIDI PROGRAM CHANGE DATA			SOUND	MIDI PROGRAM CHANGE DATA		
	NORM	TECH	GM		NORM	TECH	GM
CLASSICAL ORGAN (PRESET)				ORGAN (PRESET)			
PipeCoupler 1	0 (0)	84 (16)	—	JazzOrgnBass1	3 (0)	88 (16)	—
PipeCoupler 2	0 (1)	84 (32)	—	JazzOrgnBass2	3 (1)	88 (32)	—
Basic Pipes	0 (2)	85 (48)	—	Theatre Gamba	3 (2)	93 (16)	—
ORCHESTRAL				STANDARD			
OctaveStrings	1 (0)	102 (0)	—	Acoustic Bass	4 (0)	43 (0)	33
Bowed Bass	1 (1)	98 (0)	44	Mellow A. Bass	4 (1)	43 (16)	—
Bass Trombone	1 (2)	52 (32)	—	Electric Bass	4 (2)	40 (0)	—
Tuba	1 (3)	55 (0)	59	Bright E. Bass	4 (3)	40 (16)	34
Timpani	1 (4)	126 (0)	48	Fretless Bass	4 (4)	40 (32)	36
Pizzicato	1 (5)	99 (0)	46	Picked E. Bass	4 (5)	42 (0)	35
Brass	1 (6)	56 (0)	62	Funky E. Bass	4 (6)	40 (48)	—
Bass Drum	1 (7)	126 (48)	—	Grand Piano	4 (7)	0 (0)	1
Snare Drum	1 (8)	127 (48)	—	E. Piano 1	4 (8)	5 (0)	5
Cymbal	1 (9)	126 (16)	—	Harpsichprd	4 (9)	16 (0)	7
MEMORY				CONTEMPORARY			
Memory 1	2 (0)	0 (128)	—	Mute Bass	5 (0)	47 (0)	—
Memory 2	2 (1)	1 (128)	—	Slap Bass 1	5 (1)	41 (0)	37
Memory 3	2 (2)	2 (128)	—	Slap Bass 2	5 (2)	41 (16)	38
Memory 4	2 (3)	3 (128)	—	Analog Bass	5 (3)	46 (16)	—
Memory 5	2 (4)	4 (128)	—	Synth Chopper	5 (4)	45 (0)	40
Memory 6	2 (5)	5 (128)	—	Rock Bass	5 (5)	47 (16)	—
Memory 7	2 (6)	6 (128)	—	Wow Bass	5 (6)	46 (0)	39
Memory 8	2 (7)	7 (128)	—	Pluck Organ	5 (7)	112 (0)	—
Memory 9	2 (8)	8 (128)	—	Mellow Ens.	5 (8)	107 (16)	90
Memory 10	2 (9)	9 (128)	—	Mist	5 (9)	108 (48)	101
Memory 11	2 (10)	10 (128)	—				
Memory 12	2 (11)	11 (128)	—				
Memory 13	2 (12)	12 (128)	—				
Memory 14	2 (13)	13 (128)	—				
Memory 15	2 (14)	14 (128)	—				
Memory 16	2 (15)	15 (128)	—				

•The numbers in parentheses () are bank data.

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

KEYBOARD PERCUSSION KIT

GA1

SOUND	MIDI PROGRAM CHANGE DATA			SOUND	MIDI PROGRAM CHANGE DATA		
	NORM	TECH	GM		NORM	TECH	GM
KEYBOARD PERCUSSION				KEYBOARD PERCUSSION			
Rock Kit 1	0 (0)	112 (128)	—	Brush Kit 1	0 (5)	117 (128)	—
Rock Kit 2	0 (1)	115 (128)	—	Brush Kit 2	0 (6)	127 (128)	—
Light Rock Kit	0 (2)	126 (128)	—	Orchestral Kit	0 (7)	124 (128)	—
Soul Kit	0 (3)	121 (128)	—	Trad Kit	0 (8)	118 (128)	—
Jazz Kit	0 (4)	113 (128)	—				

•The numbers in parentheses () are bank data.

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

UPPER / LOWER ORGAN PRESET

GA3

ORGAN GROUP PRESET NAME		MIDI PROGRAM CHANGE DATA NORM=TECH			
UPPER	LOWER	ORGAN TYPE			
ELECTRONIC TABS		Standard	Theatre	U.S.trad.	European
WARM SOLO	WARM TABS	0 (0)	0 (1)	0 (2)	0 (3)
LIGHT JAZZ	TYPICAL 8' & 4'	1 (0)	1 (1)	1 (2)	1 (3)
THEATRE SOLO	DOUBLE OCTAVE	2 (0)	2 (1)	2 (2)	2 (3)
CONTINENTAL	RICH FLUTES	3 (0)	3 (1)	3 (2)	3 (3)
WARM & BRIGHT	MANY PITCHES	4 (0)	4 (1)	4 (2)	4 (3)
MAIN THEME	SHARP 8'	5 (0)	5 (1)	5 (2)	5 (3)
TROMBONE TAB	IN THE MIDDLE	6 (0)	6 (1)	6 (2)	6 (3)
LIGHT FLUTES	WIDE FLUTES	7 (0)	7 (1)	7 (2)	7 (3)
FULL THEATRE	FULL LOWER	8 (0)	8 (1)	8 (2)	8 (3)
MANUAL	MANUAL	64 (0)	64 (1)	64 (2)	64 (3)
DRAWBARS		Jazz	Standard	Theatre	Rock
BOSSA DRAWBAR	8'+1' COMBO	0 (4)	0 (5)	0 (6)	0 (7)
SMOKIN' 'B'	JAZZ ACCOMP 1	1 (4)	1 (5)	1 (6)	1 (7)
8' 4' 2' COMBO	EIGHT TO ONE	2 (4)	2 (5)	2 (6)	2 (7)
POP DRAWBARS	8'+4' CLICK	3 (4)	3 (5)	3 (6)	3 (7)
NOVELTY D.BRS	POP ACCOMP	4 (4)	4 (5)	4 (6)	4 (7)
MELLOW MIX	JAZZ ACCOMP 2	5 (4)	5 (5)	5 (6)	5 (7)
16'+1' COMBO	MELLOW MIX	6 (4)	6 (5)	6 (6)	6 (7)
LUSCIOUS SND.	EVEN+ODD MIX	7 (4)	7 (5)	7 (6)	7 (7)
FULL DRAWBARS	FULL FOOTAGE	8 (4)	8 (5)	8 (6)	8 (7)
MANUAL	MANUAL	64 (4)	64 (5)	64 (6)	64 (7)
PIPE ORGAN		Theatre			
SOFT TIBIAS	SOFT TIBIAS	0 (8)			
OPEN TIBIAS	VOX ACCOMP	1 (8)			
TIBIA CHORUS	OPEN TIBIAS	2 (8)			
SWEET VOX	CELESTE RANKS	3 (8)			
TIBIA TIERCE	TIBIA & REEDS	4 (8)			
NOVELTY SOLO	RICH ACCOMP	5 (8)			
EVEN TIBIAS	OPEN ACCOMP	6 (8)			
FULL CHORUS	WARM ACCOMP	7 (8)			
CRESCENDO	FULL ACCOMP	8 (8)			
MANUAL	MANUAL	64 (8)			
PIPE ORGAN		Classical			
CHIFF 16'	FLUTE & DIAP.	0 (12)			
BASIC 16'+8'	BASIC 8'+8'	1 (12)			
HYMN 1	MIXED 8' COMB	2 (12)			
HYMN 2	BRIGHT & OPEN	3 (12)			
HYMN 3	SOFT MIXTURE	4 (12)			
FULL ORGAN 1	WARM REEDS	5 (12)			
FULL ORGAN 2	MELLOW REEDS	6 (12)			
TUTTI 1	FULL ORGAN	7 (12)			
TUTTI 2	FULL+REEDS	8 (12)			
MANUAL	MANUAL	64 (12)			

•The numbers in parentheses () are bank data.

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

SOUND	MIDI PROGRAM CHANGE DATA			SOUND	MIDI PROGRAM CHANGE DATA		
	NORM	TECH	GM		NORM	TECH	GM
PIANO				STRINGS/VOCAL			
Grand Piano	7 (0)	0 (0)	1	Strings	10 (0)	100 (0)	49
Upright Piano	7 (1)	2 (32)	—	Soft Strings	10 (1)	101 (32)	—
Mellow Piano	7 (2)	2 (0)	—	OctaveStrings	10 (2)	102 (0)	—
Piano 1 Oct.	7 (3)	0 (16)	—	Pizzicato	10 (3)	99 (0)	46
Piano 2 Oct.	7 (4)	2 (16)	—	Violin	10 (4)	96 (0)	41
SoloPiano 16'	7 (5)	0 (48)	—	Jazz Violin	10 (5)	96 (16)	—
Rock Piano	7 (6)	3 (32)	—	CountryFiddle	10 (6)	96 (32)	111
Honky Tonk	7 (7)	1 (16)	4	Choir Ah	10 (7)	104 (0)	—
Jangle Piano	7 (8)	1 (48)	—	Vocal Ooh	10 (8)	104 (32)	—
Bright Piano	7 (9)	1 (0)	2	Slow Strings	10 (9)	101 (0)	50
Elect. Grand	7 (10)	3 (0)	3	TremoloString	10 (10)	100 (32)	45
Midi Grand	7 (11)	0 (32)	—	Synth Strings	10 (11)	103 (0)	51
Synth Piano	7 (12)	114 (0)	—	Viola	10 (12)	97 (32)	42
Phantom Piano	7 (13)	2 (48)	—	Cello	10 (13)	97 (0)	43
Echo Piano	7 (14)	7 (48)	—	Bowed Bass	10 (14)	98 (0)	44
				Pop Vocal Ah	10 (15)	104 (48)	53
				Synth Vocal	10 (16)	107 (0)	55
				Vocal Doo	10 (17)	109 (0)	54
E PIANO/HARPSI				BRASS			
E. Piano 1	8 (0)	5 (0)	5	Brass	11 (0)	56 (0)	62
E. Piano 2	8 (1)	5 (32)	—	Octave Brass	11 (1)	56 (16)	—
E. Piano 3	8 (2)	5 (48)	—	Trumpet	11 (2)	48 (0)	57
Modern E. P. 1	8 (3)	6 (0)	6	Cornet	11 (3)	49 (16)	—
Modern E. P. 2	8 (4)	4 (0)	—	Jazz Mute Tpt	11 (4)	50 (0)	60
Modern E. P. 3	8 (5)	6 (48)	—	Flugel Horn	11 (5)	51 (0)	—
Harpsichord	8 (6)	16 (0)	7	Bri. Trombone	11 (6)	52 (0)	58
Double Harpsi	8 (7)	16 (16)	—	Orch. Trombone	11 (7)	52 (16)	—
Cembalo	8 (8)	18 (0)	—	Close Fr. Horn	11 (8)	54 (0)	—
Bell Piano	8 (9)	116 (16)	—	Brass & Synth	11 (9)	56 (48)	—
Crystal Piano	8 (10)	114 (32)	—	Orch. Trumpet	11 (10)	48 (32)	—
Sleigh Piano	8 (11)	7 (32)	—	Mellow Trumpet	11 (11)	48 (16)	—
Toy Piano	8 (12)	7 (16)	—	Straight Mt Tpt	11 (12)	50 (16)	—
Clavi	8 (13)	17 (0)	8	Mel. Trombone	11 (13)	53 (0)	—
Synth Clavi	8 (14)	115 (0)	—	Mute Trombone	11 (14)	52 (48)	—
Elect. Harpsi	8 (15)	16 (48)	—	Open Fr. Horn	11 (15)	54 (16)	61
				Euphonium	11 (16)	55 (32)	—
				Tuba	11 (17)	55 (0)	59
GUITAR				FLUTE			
Classical Gtr	9 (0)	20 (0)	—	Piccolo	12 (0)	64 (0)	73
Bright Ac. Gtr	9 (1)	21 (0)	25	Jazz Flute	12 (1)	65 (0)	74
Folk Guitar	9 (2)	22 (0)	26	Classic Flute	12 (2)	65 (16)	—
12 String Gtr	9 (3)	23 (0)	—	Alto Flute	12 (3)	64 (16)	—
Jazz Guitar 1	9 (4)	25 (0)	27	Recorder	12 (4)	74 (0)	75
Bright Solid	9 (5)	26 (0)	28	Ocarina	12 (5)	74 (16)	80
Distortion Gtr	9 (6)	30 (0)	31	Pan Flute 1	12 (6)	72 (0)	76
Country Gtr	9 (7)	31 (16)	—	Whistle	12 (7)	111 (0)	79
Hawaiian Gtr	9 (8)	31 (0)	—	Shakuhachi	12 (8)	75 (0)	78
Mellow Ac. Gtr	9 (9)	20 (16)	—	Alto Ensemble	12 (9)	64 (48)	—
Jazz Guitar 2	9 (10)	24 (0)	—	Blown Bottle	12 (10)	72 (32)	77
Mellow Solid	9 (11)	28 (0)	—	Pan Flute 2	12 (11)	72 (16)	—
Funk Solid	9 (12)	26 (16)	—	Quena	12 (12)	75 (16)	—
'60's Solid	9 (13)	28 (16)	—	Ney	12 (13)	73 (32)	—
Mute Guitar	9 (14)	29 (0)	29	Synth Calliope	12 (14)	72 (48)	83
Overdrive Gtr	9 (15)	27 (32)	30	Chopper Flute	12 (15)	112 (32)	—
Gtr Harmonics	9 (16)	27 (16)	32				
Solo Hawaiian	9 (17)	31 (32)	—				

SOUND	MIDI PROGRAM CHANGE DATA			SOUND	MIDI PROGRAM CHANGE DATA		
	NORM	TECH	GM		NORM	TECH	GM
MALLET				SAX/CLARINET			
Glockenspiel	0 (0)	9 (0)	10	Soprano Sax	3 (0)	76 (0)	65
Vibraphone	0 (1)	8 (0)	12	Alto Sax	3 (1)	77 (0)	66
Marimba	0 (2)	10 (0)	13	Mellow Alto	3 (2)	77 (16)	—
Xylophone	0 (3)	11 (0)	14	Tenor Sax	3 (3)	78 (48)	—
Tubular Bells	0 (4)	14 (0)	15	Breathy Tenor	3 (4)	78 (16)	67
Celesta	0 (5)	12 (0)	9	Rock Tenor	3 (5)	79 (0)	—
Chrysoglott	0 (6)	8 (48)	—	Jazz Clarinet	3 (6)	68 (0)	72
Wind Chime	0 (7)	14 (16)	—	Clas. Clarinet	3 (7)	69 (0)	—
Steel Drum	0 (8)	15 (0)	115	Soft Clarinet	3 (8)	68 (16)	—
Tinkle Bell	0 (9)	14 (32)	113	Baritone Sax	3 (9)	79 (16)	68
Gamelan	0 (10)	14 (48)	—	DistortionSax	3 (10)	78 (32)	—
BottleMarimba	0 (11)	13 (0)	—	Synth Sax	3 (11)	79 (48)	—
AfricanMallet	0 (12)	113 (0)	—	Bass Clarinet	3 (12)	69 (16)	—
Caribb Mallet	0 (13)	11 (16)	—				
Theatre Marim	0 (14)	10 (48)	—				
Theatre Xylo	0 (15)	11 (48)	—				
Theatre Glock	0 (16)	9 (48)	—				
Wood Block	0 (17)	122 (16)	116				
SPECIAL PERC				SYNTH BRASS/LEAD			
Banjo	1 (0)	33 (0)	106	Synth Brass 1	4 (0)	60 (0)	64
Mandolin	1 (1)	35 (0)	—	Syn.BrassEns1	4 (1)	61 (16)	63
Harp	1 (2)	32 (0)	47	Square Lead	4 (2)	117 (0)	81
Orchestra Hit	1 (3)	127 (16)	56	Saw Lead	4 (3)	118 (16)	82
Timpani	1 (4)	126 (0)	48	Air Vox	4 (4)	106 (16)	86
Music Box	1 (5)	7 (0)	11	Lead Voice	4 (5)	121 (32)	—
Kalimba	1 (6)	39 (0)	109	Pluck Organ	4 (6)	112 (0)	—
Sitar	1 (7)	38 (0)	105	Synthynet	4 (7)	115 (16)	—
Koto	1 (8)	37 (0)	108	Nylon Synth	4 (8)	20 (48)	—
Dulcimer	1 (9)	38 (16)	16	Synth Brass 2	4 (9)	60 (48)	—
Shamisen	1 (10)	36 (0)	107	Syn.BrassEns2	4 (10)	61 (48)	—
Taiko Drum	1 (11)	123 (48)	117	Chiffer Lead	4 (11)	117 (32)	84
Melodic Tom	1 (12)	122 (32)	118	Charang	4 (12)	27 (48)	85
Bass Drum	1 (13)	126 (48)	—	5th Wave	4 (13)	119 (0)	87
Snare Drum	1 (14)	127 (48)	—	Sine Lead	4 (14)	94 (0)	—
Brush Snare	1 (15)	125 (16)	—	PluckEnsemble	4 (15)	115 (32)	—
Cymbal	1 (16)	126 (16)	—	Atmosphere	4 (16)	21 (48)	100
Sleigh Bell	1 (17)	125 (0)	—	Plop	4 (17)	117 (48)	—
REED				SYNTH PAD			
German Oboe	2 (0)	66 (0)	69	Fantasia	5 (0)	116 (32)	89
French Oboe	2 (1)	66 (16)	—	Mellow Ens.	5 (1)	107 (16)	90
English Horn	2 (2)	67 (0)	70	Polysynth	5 (2)	102 (32)	91
Bassoon	2 (3)	70 (0)	71	Spacy Pad	5 (3)	107 (32)	92
Bri.Accordion	2 (4)	80 (0)	22	Crystal Ens.	5 (4)	120 (0)	93
Mel.Accordion	2 (5)	81 (0)	—	Metal Pad	5 (5)	106 (32)	94
Musette	2 (6)	82 (0)	—	Dream	5 (6)	108 (32)	—
Harmonica	2 (7)	83 (0)	23	Digi Heaven	5 (7)	104 (16)	—
BluesHarmnica	2 (8)	83 (16)	—	Halo Pad	5 (8)	107 (48)	95
Harmonium	2 (9)	86 (32)	21	Sweep Pad	5 (9)	62 (32)	96
Bandoneon	2 (10)	80 (16)	24	Synth Glocken	5 (10)	9 (32)	99
JazzHarmonica	2 (11)	83 (32)	—	Mist	5 (11)	108 (48)	101
Bagpipe	2 (12)	73 (0)	110	Click Echo	5 (12)	108 (0)	—
Shanai	2 (13)	73 (16)	112	Click Vox	5 (13)	106 (48)	103
				Star Theme	5 (14)	120 (16)	104
				Ice Rain	5 (15)	121 (48)	97
				Soundtrack	5 (16)	119 (16)	98
				Goblins	5 (17)	106 (0)	102

SOUND	MIDI PROGRAM CHANGE DATA			SOUND	MIDI PROGRAM CHANGE DATA		
	NORM	TECH	GM		NORM	TECH	GM
MEMORY A				MEMORY B			
MEMORY B - 1	6 (0)	0 (128)	—	MEMORY A - 1	13 (0)	18 (128)	—
MEMORY B - 2	6 (1)	1 (128)	—	MEMORY A - 2	13 (1)	19 (128)	—
MEMORY B - 3	6 (2)	2 (128)	—	MEMORY A - 3	13 (2)	20 (128)	—
MEMORY B - 4	6 (3)	3 (128)	—	MEMORY A - 4	13 (3)	21 (128)	—
MEMORY B - 5	6 (4)	4 (128)	—	MEMORY A - 5	13 (4)	22 (128)	—
MEMORY B - 6	6 (5)	5 (128)	—	MEMORY A - 6	13 (5)	23 (128)	—
MEMORY B - 7	6 (6)	6 (128)	—	MEMORY A - 7	13 (6)	24 (128)	—
MEMORY B - 8	6 (7)	7 (128)	—	MEMORY A - 8	13 (7)	25 (128)	—
MEMORY B - 9	6 (8)	8 (128)	—	MEMORY A - 9	13 (8)	26 (128)	—
MEMORY B - 10	6 (9)	9 (128)	—	MEMORY A - 10	13 (9)	27 (128)	—
MEMORY B - 11	6 (10)	10 (128)	—	MEMORY A - 11	13 (10)	28 (128)	—
MEMORY B - 12	6 (11)	11 (128)	—	MEMORY A - 12	13 (11)	29 (128)	—
MEMORY B - 13	6 (12)	12 (128)	—	MEMORY A - 13	13 (12)	30 (128)	—
MEMORY B - 14	6 (13)	13 (128)	—	MEMORY A - 14	13 (13)	31 (128)	—
MEMORY B - 15	6 (14)	14 (128)	—	MEMORY A - 15	13 (14)	32 (128)	—
MEMORY B - 16	6 (15)	15 (128)	—	MEMORY A - 16	13 (15)	33 (128)	—
MEMORY B - 17	6 (16)	16 (128)	—	MEMORY A - 17	13 (16)	34 (128)	—
MEMORY B - 18	6 (17)	17 (128)	—	MEMORY A - 18	13 (17)	35 (128)	—

•The numbers in parentheses () are bank data.

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

BASS PEDALS

GA3

SOUND	MIDI PROGRAM CHANGE DATA			SOUND	MIDI PROGRAM CHANGE DATA		
	NORM	TECH	GM		NORM	TECH	GM
CLASSICAL ORGAN (PRESET)				ORGAN (PRESET)			
PipeCoupler 1	0 (0)	84 (16)	—	JazzOrgnBass1	3 (0)	88 (16)	—
PipeCoupler 2	0 (1)	84 (32)	—	JazzOrgnBass2	3 (1)	88 (32)	—
PipeCoupler 3	0 (2)	84 (48)	—	Guitar Bass	3 (2)	88 (48)	—
Basic Pipes 1	0 (3)	85 (48)	—	Theatre Combi	3 (3)	87 (16)	—
Basic Pipes 2	0 (4)	86 (48)	—	Theatre Gamba	3 (4)	93 (16)	—
Pipe Trumpets	0 (5)	86 (16)	—	Theatre Cello	8 (5)	93 (48)	—
ORCHESTRAL				STANDARD			
OctaveStrings	1 (0)	102 (0)	—	Acoustic Bass	4 (0)	43 (0)	33
Pizzicato	1 (1)	99 (0)	46	Mellow A.Bass	4 (1)	43 (16)	—
Cello	1 (2)	97 (0)	43	Electric Bass	4 (2)	40 (0)	—
Bowed Bass	1 (3)	98 (0)	44	Bright E. Bass	4 (3)	40 (16)	34
Brass	1 (4)	56 (0)	62	Funky E. Bass	4 (4)	40 (48)	—
Bass Trombone	1 (5)	52 (32)	—	Fretless Bass	4 (5)	40 (32)	36
Tuba	1 (6)	55 (0)	59	Picked E. Bass	4 (6)	42 (0)	35
Timpani	1 (7)	126 (0)	48	Grand Piano	4 (7)	0 (0)	1
Bassoon	1 (8)	70 (0)	71	Elect. Grand	4 (8)	3 (0)	3
Bass Clarinet	1 (9)	69 (16)	—	E. Piano 1	4 (9)	5 (0)	5
Bri. Accordion	1 (10)	80 (0)	22	E. Piano 2	4 (10)	5 (32)	—
Bass Drum	1 (11)	126 (48)	—	Harpsichord	4 (11)	16 (0)	7
Snare Drum	1 (12)	127 (48)	—				
Cymbal	1 (13)	126 (16)	—				
MEMORY				CONTEMPORARY			
Memory 1	2 (0)	0 (128)	—	Rock Bass	5 (0)	47 (16)	—
Memory 2	2 (1)	1 (128)	—	Mute Bass	5 (1)	47 (0)	—
Memory 3	2 (2)	2 (128)	—	Slap Bass 1	5 (2)	41 (0)	37
Memory 4	2 (3)	3 (128)	—	Slap Bass 2	5 (3)	41 (16)	38
Memory 5	2 (4)	4 (128)	—	Analog Bass	5 (4)	46 (16)	—
Memory 6	2 (5)	5 (128)	—	Wow Bass	5 (5)	46 (0)	39
Memory 7	2 (6)	6 (128)	—	Synth Chopper	5 (6)	45 (0)	40
Memory 8	2 (7)	7 (128)	—	Mellow Ens.	5 (7)	107 (16)	90
Memory 9	2 (8)	8 (128)	—	Nylon Synth	5 (8)	20 (48)	—
Memory 10	2 (9)	9 (128)	—	Pluck Organ	5 (9)	112 (0)	—
Memory 11	2 (10)	10 (128)	—	Atmosphere	5 (10)	21 (48)	100
Memory 12	2 (11)	11 (128)	—	Spacy Pad	5 (11)	107 (32)	92
Memory 13	2 (12)	12 (128)	—	Mist	5 (12)	108 (48)	101
Memory 14	2 (13)	13 (128)	—				
Memory 15	2 (14)	14 (128)	—				
Memory 16	2 (15)	15 (128)	—				

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

KEYBOARD PERCUSSION KIT

GA3

SOUND	MIDI PROGRAM CHANGE DATA			SOUND	MIDI PROGRAM CHANGE DATA		
	NORM	TECH	GM		NORM	TECH	GM
KEYBOARD PERCUSSION				KEYBOARD PERCUSSION			
Rock Kit 1	0 (0)	112 (128)	—	Brush Kit 1	0 (5)	117 (128)	—
Rock Kit 2	0 (1)	115 (128)	—	Brush Kit 2	0 (6)	127 (128)	—
Light Rock Kit	0 (2)	126 (128)	—	Orchestral Kit	0 (7)	124 (128)	—
Soul Kit	0 (3)	121 (128)	—	Trad Kit	0 (8)	118 (128)	—
Jazz Kit	0 (4)	113 (128)	—				

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

RHYTHM

GA1

RHYTHM	MIDI PROGRAM CHANGE DATA		RHYTHM	MIDI PROGRAM CHANGE DATA	
	NORM	TECH		NORM	TECH
8BEAT			COUNTRY/R&BLUES		
8Bt Standard1	8 (0)	90 (96)	Country 2step	12 (0)	17 (112)
8Bt Standard2	8 (1)	90 (80)	Country Waltz	12 (1)	19 (0)
8Bt SoftRock1	8 (2)	90 (48)	Bluegrass 1	12 (2)	20 (48)
8Bt Ballad 1	8 (3)	91 (32)	Country Pop	12 (3)	17 (64)
Folk Rock	8 (4)	85 (0)	Country Folk	12 (4)	16 (16)
Country Rock	8 (5)	85 (32)	R&B 8 Beat	12 (5)	81 (16)
8Bt SoftRock2	8 (6)	88 (64)	CountryBallad	12 (6)	75 (48)
8Bt Pop	8 (7)	84 (48)	Bluegrass 2	12 (7)	20 (32)
8Bt Ballad 2	8 (8)	91 (16)	ModernCountry	12 (8)	17 (80)
British Rock	8 (9)	86 (16)	R&B Ballad	12 (9)	75 (64)
16BEAT			MARCH/POLKA		
16Bt Stand.1	9 (0)	96 (64)	U.S.March 2/4	13 (0)	0 (32)
16Bt Stand.2	9 (1)	96 (32)	★OrgMarch2/4	13 (1)	0 (64)
16Bt Stand.3	9 (2)	96 (48)	GermanMrch2/4	13 (2)	1 (48)
16Bt Ballad 1	9 (3)	99 (96)	U.S.March 6/8	13 (3)	2 (16)
16Bt Rock 1	9 (4)	99 (112)	OrgMarch6/8★	13 (4)	2 (32)
Piano Pop	9 (5)	101 (0)	Polka 2/4 1	13 (5)	4 (48)
16Bt Ballad 2	9 (6)	101 (16)	Orch.March2/4	13 (6)	0 (48)
16Bt Rock 2	9 (7)	97 (32)	Polka 2/4 2	13 (7)	4 (32)
16Bt Pop 1	9 (8)	101 (32)	GermanMrch6/8	13 (8)	3 (16)
16Bt Pop 2	9 (9)	107 (48)	Polka 6/8	13 (9)	5 (32)
BIG BAND/SWING			ROCK/DISCO		
Stand.Swing 1	10 (0)	25 (0)	Rock'n'Roll 1	0 (0)	80 (64)
B.Band Ballad	10 (1)	39 (16)	Rock'n'Roll 2	0 (1)	80 (32)
Orch.Swing	10 (2)	37 (0)	8Bt Soul 1	0 (2)	87 (32)
Big Band Fst1	10 (3)	36 (48)	Disco 70's	0 (3)	121 (16)
Big Band Slow	10 (4)	38 (80)	Disco Pop	0 (4)	123 (48)
Dixie	10 (5)	24 (32)	Disco 1	0 (5)	121 (0)
Stand.Swing 2	10 (6)	32 (48)	8Bt Soul 2	0 (6)	87 (0)
Big Band Fst2	10 (7)	36 (32)	Euro Beat	0 (7)	120 (48)
Big Band Mid1	10 (8)	38 (48)	Disco 2	0 (8)	123 (64)
Big Band Mid2	10 (9)	38 (64)	House	0 (9)	125 (0)
JAZZ COMBO			MODERN ROCK		
Jazz Combo 1	11 (0)	34 (16)	Jazz Rock	1 (0)	113 (80)
★Organ Jazz	11 (1)	34 (48)	Soul Rock	1 (1)	102 (48)
★Organ Blues	11 (2)	38 (96)	Funk	1 (2)	110 (48)
Jazz Ballad 1	11 (3)	44 (16)	Carib.Rock	1 (3)	118 (48)
Mod.Jazz Mid	11 (4)	40 (48)	Samba Rock 1	1 (4)	117 (16)
Jazz Waltz	11 (5)	46 (48)	Salsa	1 (5)	68 (48)
Jazz Combo 2	11 (6)	34 (32)	Jazz Funk	1 (6)	112 (48)
Jazz Quartet	11 (7)	32 (64)	Soul Ballad	1 (7)	103 (32)
Jazz Ballad 2	11 (8)	35 (16)	Samba Rock 2	1 (8)	116 (32)
Mod.Jazz Fast	11 (9)	40 (80)	Swingy Funk	1 (9)	65 (0)

RHYTHM	MIDI PROGRAM CHANGE DATA		RHYTHM	MIDI PROGRAM CHANGE DATA	
	NORM	TECH		NORM	TECH
ROCK (OTHERS)			TRAD		
Shuffle R&R	2 (0)	76 (48)	Foxtrot	4 (0)	29 (96)
ShuffleBoogie	2 (1)	77 (32)	★Organ Fox	4 (1)	29 (112)
Swing Rock 1	2 (2)	73 (16)	★Organ Qstep	4 (2)	28 (16)
Rock Ballad 1	2 (3)	74 (80)	GospelShuffle	4 (3)	77 (64)
Rock Ballad 2	2 (4)	75 (96)	Gospel 16Beat	4 (4)	100 (16)
Soul R.Ballad	2 (5)	75 (32)	Hawaiian 1	4 (5)	22 (16)
Shuffle Soul	2 (6)	77 (48)	Chanson Fox	4 (6)	29 (64)
ShuffleBallad	2 (7)	78 (16)	Modern Fox	4 (7)	30 (0)
Rock Ballad 3	2 (8)	74 (32)	Hawaiian 2	4 (8)	23 (0)
Swing Rock 2	2 (9)	64 (0)	Jig	4 (9)	5 (16)
SHOW			WALTZ		
Broadway Show	3 (0)	15 (32)	Simple Waltz	5 (0)	13 (0)
★Organ Show	3 (1)	15 (16)	StandardWaltz	5 (1)	11 (16)
Cabaret	3 (2)	15 (48)	★Organ Waltz	5 (2)	8 (80)
BroadwaySwing	3 (3)	29 (80)	Vienna Waltz	5 (3)	9 (32)
Soft Shoe	3 (4)	24 (80)	Chanson Waltz	5 (4)	11 (32)
Paris Ballad	3 (5)	74 (96)	Swingy Waltz1	5 (5)	12 (0)
Showtime	3 (6)	15 (0)	Orch. Waltz	5 (6)	8 (64)
Hollywood	3 (7)	30 (16)	Swingy Waltz2	5 (7)	12 (16)
Vaudeville	3 (8)	24 (64)	German Waltz	5 (8)	10 (48)
Cowboy Ballad	3 (9)	21 (0)	Mazurka	5 (9)	10 (32)
LATIN1			LATIN2		
Rhumba	14 (0)	58 (32)	Simple Bossa	6 (0)	48 (48)
★OrganRhumba	14 (1)	58 (48)	Bossanova 1	6 (1)	48 (96)
Beguine	14 (2)	59 (32)	★Organ Bossa	6 (2)	48 (80)
Mambo	14 (3)	56 (32)	Samba	6 (3)	51 (48)
Cha Cha	14 (4)	57 (48)	Organ Samba★	6 (4)	51 (64)
Swingy Reggae	14 (5)	71 (32)	Tango Contin.	6 (5)	53 (64)
CanzoneBeguine	14 (6)	59 (16)	Bossanova 2	6 (6)	48 (64)
Paso Doble	14 (7)	69 (16)	Jazz Bossa	6 (7)	49 (16)
Mod.Cha Cha	14 (8)	57 (32)	Tango Argen.	6 (8)	53 (48)
Reggae	14 (9)	71 (16)	Tango Haban.	6 (9)	55 (16)
COMPOSER A			COMPOSER B		
Memory 1	15 (0)	0 (128)	Memory 7	7 (0)	6 (128)
Memory 2	15 (1)	1 (128)	Memory 8	7 (1)	7 (128)
Memory 3	15 (2)	2 (128)	Memory 9	7 (2)	8 (128)
Memory 4	15 (3)	3 (128)	Memory 10	7 (3)	9 (128)
Memory 5	15 (4)	4 (128)	Memory 11	7 (4)	10 (128)
Memory 6	15 (5)	5 (128)	Memory 12	7 (5)	11 (128)

•The numbers in parentheses () are bank data.

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














































RHYTHM	MIDI PROGRAM CHANGE DATA		SOUND	MIDI PROGRAM CHANGE DATA	
	NORM	TECH		NORM	TECH
8BEAT			COUNTRY/R&BLUES		
8Bt Standard1	8 (0)	90 (96)	Country 2step	12 (0)	17 (112)
8Bt Standard2	8 (1)	90 (80)	CountryBallad	12 (1)	75 (48)
8Bt SoftRock1	8 (2)	90 (48)	Country Waltz	12 (2)	19 (0)
8Bt SoftRock2	8 (3)	88 (64)	Bluegrass 1	12 (3)	20 (48)
8Bt Pop	8 (4)	84 (48)	Bluegrass 2	12 (4)	20 (32)
8Bt Ballad 1	8 (5)	91 (32)	Country Pop	12 (5)	17 (64)
8Bt Ballad 2	8 (6)	91 (16)	Country Folk	12 (6)	16 (16)
Folk Rock	8 (7)	85 (0)	ModernCountry	12 (7)	17 (80)
Country Rock	8 (8)	85 (32)	R&B 8 Beat	12 (8)	81 (16)
British Rock	8 (9)	86 (16)	R&B Ballad	12 (9)	75 (64)
16BEAT			MARCH/POLKA		
16Bt Stand.1	9 (0)	96 (64)	U.S.March 2/4	13 (0)	0 (32)
16Bt Stand.2	9 (1)	96 (32)	GermanMrch2/4	13 (1)	1 (48)
16Bt Stand.3	9 (2)	96 (48)	★OrgMarch2/4	13 (2)	0 (64)
16Bt Ballad 1	9 (3)	99 (96)	Polka 2/4 1	13 (3)	4 (48)
16Bt Ballad 2	9 (4)	101 (16)	Polka 2/4 2	13 (4)	4 (32)
16Bt Rock 1	9 (5)	99 (112)	U.S.March 6/8	13 (5)	2 (16)
16Bt Rock 2	9 (6)	97 (32)	GermanMrch6/8	13 (6)	3 (16)
16Bt Pop 1	9 (7)	101 (32)	OrgMarch6/8★	13 (7)	2 (32)
16Bt Pop 2	9 (8)	107 (48)	Orch.March2/4	13 (8)	0 (48)
Piano Pop	9 (9)	101 (0)	Polka 6/8	13 (9)	5 (32)
BIG BAND/SWING			ROCK/DISCO		
Stand.Swing 1	10 (0)	25 (0)	Rock'n'Roll 1	0 (0)	80 (64)
Stand.Swing 2	10 (1)	32 (48)	Rock'n'Roll 2	0 (1)	80 (32)
B.Band Ballad	10 (2)	39 (16)	8Bt Soul 1	0 (2)	87 (32)
Orch.Swing	10 (3)	37 (0)	8Bt Soul 2	0 (3)	87 (0)
Dixie	10 (4)	24 (32)	Euro Beat	0 (4)	120 (48)
Big Band Mid1	10 (5)	38 (48)	Disco 70's	0 (5)	121 (16)
Big Band Mid2	10 (6)	38 (64)	Disco Pop	0 (6)	123 (48)
Big Band Fst1	10 (7)	36 (48)	Disco 1	0 (7)	121 (0)
Big Band Fst2	10 (8)	36 (32)	Disco 2	0 (8)	123 (64)
Big Band Slow	10 (9)	38 (80)	House	0 (9)	125 (0)
JAZZ COMBO			MODERN ROCK		
Jazz Combo 1	11 (0)	34 (16)	Jazz Rock	1 (0)	113 (80)
Jazz Combo 2	11 (1)	34 (32)	Jazz Funk	1 (1)	112 (48)
Jazz Quartet	11 (2)	32 (64)	Soul Rock	1 (2)	102 (48)
★Organ Jazz	11 (3)	34 (48)	Soul Ballad	1 (3)	103 (32)
★Organ Blues	11 (4)	38 (96)	Funk	1 (4)	110 (48)
Jazz Ballad 1	11 (5)	44 (16)	Carib.Rock	1 (5)	118 (48)
Jazz Ballad 2	11 (6)	35 (16)	Samba Rock 1	1 (6)	117 (16)
Mod.Jazz Mid	11 (7)	40 (48)	Samba Rock 2	1 (7)	116 (32)
Mod.Jazz Fast	11 (8)	40 (80)	Salsa	1 (8)	68 (48)
Jazz Waltz	11 (9)	46 (48)	Swingy Funk	1 (9)	65 (0)

RHYTHM	MIDI PROGRAM CHANGE DATA		RHYTHM	MIDI PROGRAM CHANGE DATA	
	NORM	TECH		NORM	TECH
ROCK (OTHERS)			TRAD		
Shuffle R&R	2 (0)	76 (48)	Foxtrot	4 (0)	29 (96)
ShuffleBoogie	2 (1)	77 (32)	Chanson Fox	4 (1)	29 (64)
Shuffle Soul	2 (2)	77 (48)	Modern Fox	4 (2)	30 (0)
ShuffleBallad	2 (3)	78 (16)	★Organ Fox	4 (3)	29 (112)
Swing Rock 1	2 (4)	73 (16)	★Organ Qstep	4 (4)	28 (16)
Rock Ballad 1	2 (5)	74 (80)	GospelShuffle	4 (5)	77 (64)
Rock Ballad 2	2 (6)	75 (96)	Gospel 16Beat	4 (6)	100 (16)
Rock Ballad 3	2 (7)	74 (32)	Hawaiian 1	4 (7)	22 (16)
Soul R.Ballad	2 (8)	75 (32)	Hawaiian 2	4 (8)	23 (0)
Swing Rock 2	2 (9)	64 (0)	Jig	4 (9)	5 (16)
SHOW TIME			WALTZ		
Broadway Show	3 (0)	15 (32)	Simple Waltz	5 (0)	13 (0)
Showtime	3 (1)	15 (0)	StandardWaltz	5 (1)	11 (16)
★Organ Show	3 (2)	15 (16)	★Organ Waltz	5 (2)	8 (80)
Cabaret	3 (3)	15 (48)	Swingy Waltz1	5 (3)	12 (0)
Hollywood	3 (4)	30 (16)	Swingy Waltz2	5 (4)	12 (16)
BroadwaySwing	3 (5)	29 (80)	Vienna Waltz	5 (5)	9 (32)
Vaudeville	3 (6)	24 (64)	German Waltz	5 (6)	10 (48)
Soft Shoe	3 (7)	24 (80)	Chanson Waltz	5 (7)	11 (32)
Cowboy Ballad	3 (8)	21 (0)	Orch. Waltz	5 (8)	8 (64)
Paris Ballad	3 (9)	74 (96)	Mazurka	5 (9)	10 (32)
LATIN1			LATIN2		
Rhumba	14 (0)	58 (32)	Simple Bossa	6 (0)	48 (48)
★OrganRhumba	14 (1)	58 (48)	Bossanova 1	6 (1)	48 (96)
Beguine	14 (2)	59 (32)	Bossanova 2	6 (2)	48 (64)
CanzoneBeguine	14 (3)	59 (16)	Jazz Bossa	6 (3)	49 (16)
Paso Doble	14 (4)	69 (16)	★Organ Bossa	6 (4)	48 (80)
Mambo	14 (5)	56 (32)	Samba	6 (5)	51 (48)
Cha Cha	14 (6)	57 (48)	Organ Samba★	6 (6)	51 (64)
Mod.Cha Cha	14 (7)	57 (32)	Tango Argen.	6 (7)	53 (48)
Swingy Reggae	14 (8)	71 (32)	Tango Contin.	6 (8)	53 (64)
Reggae	14 (9)	71 (16)	Tango Haban.	6 (9)	55 (16)
COMPOSER A			COMPOSER B		
Memory 1	15 (0)	0 (128)	Memory 7	7 (0)	6 (128)
Memory 2	15 (1)	1 (128)	Memory 8	7 (1)	7 (128)
Memory 3	15 (2)	2 (128)	Memory 9	7 (2)	8 (128)
Memory 4	15 (3)	3 (128)	Memory 10	7 (3)	9 (128)
Memory 5	15 (4)	4 (128)	Memory 11	7 (4)	10 (128)
Memory 6	15 (5)	5 (128)	Memory 12	7 (5)	11 (128)

•The numbers in parentheses () are bank data.

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

KEYBOARD PERCUSSION

		Other kits	MIDI NOTE NUMBER		Orchestral kit	MIDI NOTE NUMBER		General MIDI	MIDI NOTE NUMBER
			NORM	TECH		NORM	TECH		
		—	—	—	—	—	—	Bass Drum 2*	35
		Bass Drum	36	36	Orchestral Bass Drum	36	36	Bass Drum 1	36
		Rim Shot	37	47	Rim Shot	37	47	Rim Shot	37
		Snare Drum 1	38	38	Orchestral Snare Drum 1	38	38	Snare Drum 1	38
		Special Snare Drum	39	31	Castanets	39	55	Hand Clap	39
		Snare Drum 2	40	32	Orchestral Snare Drum 2	40	32	Electric Snare	40
		Floor Tom	41	95	Triangle	41	57	Floor Tom Low	41
		Splash Cymbal	42	24	Cymbal Soft Mallet	42	24	Hi Hat Close	42
		Tom Low	43	41	Tambourine	43	53	Floor Tom High	43
		Crash Cymbal Low	44	51	Orchstral Cymbal 1	44	51	Hi Hat Pedal	44
		Tom Mid	45	43	Tam-Tam	45	30	Tom Low	45
		Crash Cymbal High	46	25	Orchstral Cymbal 2	46	25	Hi Hat Open	46
		Tom High	47	45	Rattle	47	58	Tom Mid	47
		Hi Hat Close 1	48	48	Tublar Bells C	48	84	Tom High 1	48
		Hi Hat Close 2	49	49	Tublar Bells C*	49	85	Crash Cymbal 1	49
		Hi Hat Open	50	50	Tublar Bells D	50	86	Tom High 2	50
		Ride Bell	51	28	Tublar Bells D*	51	87	Ride Cymbal 1	51
		Ride Cymbal	52	52	Tublar Bells E	52	88	Chinese Cymbal	52
		Conga Low	53	53	Tublar Bells F	53	89	Ride Bell	53
		Small Conga Low	54	54	Tublar Bells F*	54	90	Tambourine	54
		Conga High	55	55	Tublar Bells G	55	91	Splash Cymbal	55
		Small Conga High	56	56	Tublar Bells G*	56	92	Cowbell	56
		Conga Crash	57	57	Tublar Bells A	57	93	Crash Cymbal 2	57
		Metal Cabasa	58	58	Tublar Bells A*	58	94	Vibraslap	58
		Timbales Low	59	99	Tublar Bells B	59	95	Ride Cymbal 2	59
		Timbales High	60	100	Tublar Bells c	60	96	Bongo High	60
		Cowbell Low	61	66	Tublar Bells c*	61	97	Bongo Low	61
		Cowbell High	62	62	Tublar Bells d	62	98	Conga Mute Crash	62
		Agogo Low	63	102	Tublar Bells d*	63	99	Conga High	63
		Agogo High	64	101	Timpani E	64	84	Conga Low	64
		Samba Whistle Low	65	65	Timpani F	65	65	Timbales High	65
		Samba Whistle High	66	66	Timpani F*	66	66	Timbales Low	66
		Claves	67	67	Timpani G	67	67	Agogo High	67
		Slap	68	68	Timpani G*	68	68	Agogo Low	68
		Hand Clap	69	69	Timpani A	69	69	Cabasa	69
		Tambourine	70	74	Timpani A*	70	70	Maracas	70
		Shaker	71	96	Timpani B	71	71	Samba Whistle Short	71
		Triangle Mute	72	108	Timpani c	72	72	Samba Whistle Long	72
		Maracas	73	105	Timpani c*	73	73	Guiro Short	73
		Triangle Open	74	107	Timpani d	74	74	Guiro Long	74
		Guiro Short	75	77	Timpani d*	75	75	Claves	75
		Guiro Long	76	76	Timpani e	76	76	Wood Block Mid	76
		Orchestral Bass Drum	77	85	Timpani f	77	77	Wood Block Low	77
		Orchestral Snare Drum	78	86	Wood Block Low	78	115	Cuica High	78
		Orchestral Cymbal	79	87	Wood Block Mid	79	116	Cuica Low	79
		Wind Chime	80	29	Wood Block High	80	117	Triangle Mute	80
		—	—	—	—	—	—	Triangle Open*	81

* Sounds in SEQUENCER and MIDI function.

TECHNI-CHORD TYPE

< Example: C major chord >

Legend:
 ♪: Played note (right-hand melody)
 ○: Added notes

DSP EFFECT

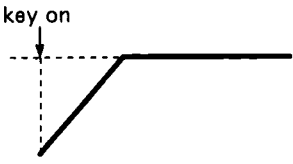
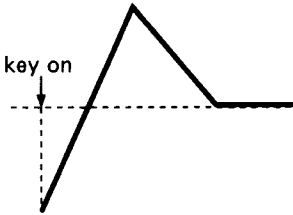
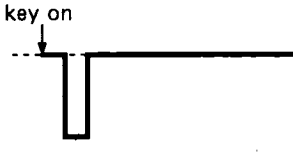
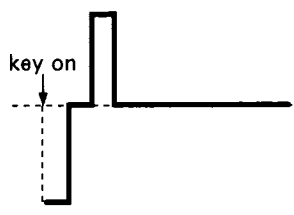
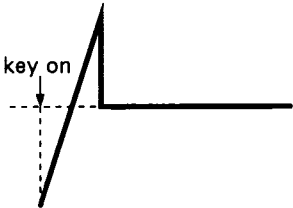
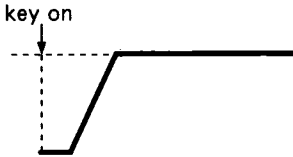
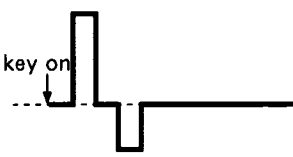
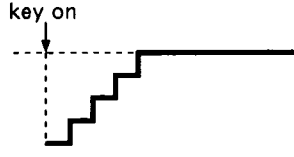
GA3

EFFECT	PARAMETER	RANGE	EFFECT	PARAMETER	RANGE
CHORUS	DEPTH	0 - 99	OVER DRIVE	DRIVE	0 - 99
	SPEED	0 - 99		OUTPUT LEVEL	0 - 99
	OUTPUT LEVEL	0 - 99		REVERB DEPTH	0 - 99
	REVERB DEPTH	0 - 99	EXCITER	DRIVE	0 - 99
FLANGER	DEPTH 1	0 - 49		BOOST LEVEL	0 - 99
	DEPTH 2	0 - 49		OUTPUT LEVEL	0 - 99
	SPEED	0 - 99		REVERB DEPTH	0 - 99
	RESONANCE	-49 - +49	DELAY 1	DELAY R	0 - 500
	MANUAL	0 - 99		DELAY L	0 - 500
	PHASE	0 - 90		FEEDBACK R	-49 - +49
	OUTPUT LEVEL	0 - 99		FEEDBACK L	-49 - +49
REVERB DEPTH	0 - 99	OUTPUT LEVEL	0 - 99		
PHASER	DEPTH	0 - 99	REVERB DEPTH	0 - 99	
	SPEED	0 - 99	DELAY 2	DELAY R1	0 - 250
	RESONANCE	-49 - +49		DELAY R2	0 - 250
	MANUAL	0 - 99		DELAY L1	0 - 250
	OUTPUT LEVEL	0 - 99		DELAY L2	0 - 250
REVERB DEPTH	0 - 99	FEEDBACK R		-49 - +49	
DISTORTION	DRIVE	0 - 99		FEEDBACK L	-49 - +49
	OUTPUT LEVEL	0 - 99		OUTPUT LEVEL	0 - 99
	REVERB DEPTH	0 - 99		REVERB DEPTH	0 - 99

STONE

A	PIANO	F	ORGAN & ACCORDION	J	BASS	M	DRUMS & PERCUS
	Grand Piano Bright Piano Elect.Grand E.Piano 1 E.Piano 2 Modern E.P.1 Modern E.P.2 Synth Piano		Jazz Organ Full Drawbars Jazz Drawbars Pop Organ Organ 16' 16' & 8' 16' & 8' & 4' 16' & 1'		Acoustic Bass Mellow A.Bass Electric Bass Bright E.Bass Funky E.Bass Fretless Bass Picked E.Bass Rock Bass Mute Bass Slap Bass 1 Slap Bass 2 Thumb Bass 1 Thumb Bass 2 Analog Bass 1 Analog Bass 2 Wow Bass 1 Wow Bass 2 Plastic Bass Synth Chopper Mallet Bass		Rock Kick Jazz Kick Analog Kick Orch.BassDrum Rock Snare Jazz Snare Soul Snare Orch.Snare Reverse Snare Melodic Tom Electric Tom Analog Tom Rim 1 Rim 2 Rim 3 Brush Short Brush Long H.H.Closed 1 H.H.Closed 2 H.H.Open 1 H.H.Open 2 Crash Cymbal1 Crash Cymbal2 Orch.Cymbal Ride Cymbal 1 Ride Cymbal 2 Ride Cymbal 3 ReverseCymbal Conga 1 Conga 2 Bongo Timbales 1 Timbales 2 Samba Drum Claves Wood Block Castanets Slap Hand Claps Maracas Cabasa Shaker Guiro Short Guiro Long Cuica 1 Cuica 2 Triangle Mute Triangle Open Agogo Cowbell Tambourine Orch.Tamb. Sleigh Bell Crickets Vibraslap Samba Whistle Wind Chime
B	HARPSI & MALLET		Full Pipes Bourdon 16' Diapason 16' Bour. & Diap. Bour. 16' & 8' Pipe Trumpet Pipe Fagot Pipe Fg & Tp Theatre Bass1 Theatre Bass2 Theatre Tuba Brt.Accordion Mel.Accordion Musette				
	Harpsichord 1 Harpsichord 2 Clavi Synth Clavi Glocken 1 Glocken 2 Soft Glocken Vibraphone Tubular Bells Solid Bars Steel Drum Marimba Xylophone BottleMarimba AfricanMallet			K	SYNTH		
		G	BRASS		Sine Lead Sine Wave Tri. Wave Sawtooth Wave Square Wave Click Square Pulse Wave 1 Pulse Wave 2 Pulse Wave 3 Pulse Wave 4 Organ Bell Digi Wire Synth String Pulse Mod. Soft Pad Bell Pad Fog Vox Mellow Ens.		
C	GUITAR		Brass Trumpet Orch.Trumpet Jazz Mute Tpt StraightMtTpt Cornet Flugel Horn Soft Flugel Bri.Trombone Mel.Trombone Orch.Trombone Mute Trombone Close Fr.Horn Open Fr.Horn Euphonium Tuba Synth Brass Syn.Brass Ens				
	Classical Gtr Bright Ac.Gtr Folk Guitar Jazz Guitar 1 Jazz Guitar 2 Bright Solid Mellow Solid Funk Solid '60's Solid Mute Guitar 1 Mute Guitar 2 DistortionGtr Overdrive Gtr Gtr Harmonics Hawaiian Gtr Country Gtr			L	VARIOUS NOISE & WAVE		
		H	REED		HiPass Noise1 HiPass Noise2 Sax Breath Flute Breath Shaku Breath Pipe Noise 1 Pipe Noise 2 Pick Noise 1 Pick Noise 2 Pick Noise 3 Fret Noise Gamelan 1 Gamelan 2 Gamelan 3 Scratch 1 Scratch 2 Click 1 Click 2 Click 3 Click 4		
D	SPECIAL PERCUS		Soprano Sax Alto Sax Mel.Alto Sax Tenor Sax 1 Tenor Sax 2 RockTenor Sax Baritone Sax Jazz Clarinet Clas.Clarinet Soft Clarinet Bass Clarinet SynthClarinet German Oboe French Oboe English Horn Bassoon Bagpipe Harmonica BluesHarmnica				
	Banjo Harp Music Box Kalimba Sitar Dulcimer Koto Shamisen Orchestra Hit Timpani						
E	STRINGS & VOCAL						
	Strings 1 Strings 2 Pizzicato Violin Jazz Violin Viola Cello Bowed Bass Choir Ah Pop Vocal Ah Vocal Ooh 1 Vocal Ooh 2 Vocal Doo						
		I	FLUTE & ETHNIC			N	SOUND EFFECTS
			Piccolo Jazz Flute Classic Flute Alto Flute Recorder Ocarina Pan Flute Whistle Quena Shakuhachi				Church Bell Gun Shot Bird Tweet 1 Bird Tweet 2 Bird Tweet 3 Helicopter Telephone Applause Seashore

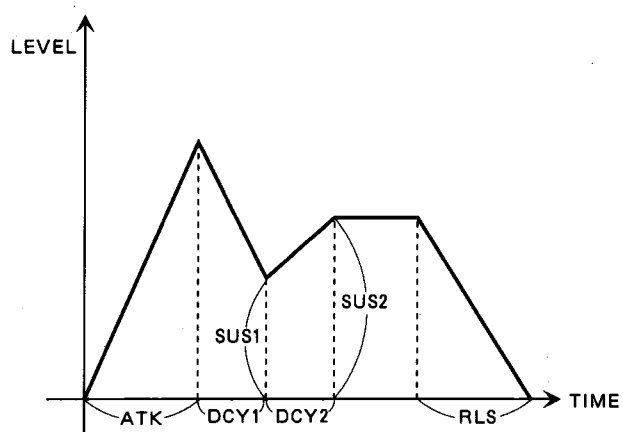
AUTOBEND & TRILL

BEND		TRILL	
UP	UP-DOWN	DOWN-UP	UP-DOWN
			
UP-DROP	DELAY-UP	MELODY	5-UP
			

DIGITAL EFFECT

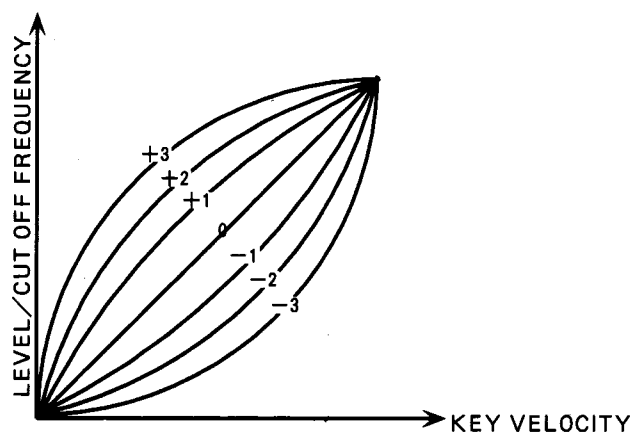
EFFECT	PARAMETER	RANGE	EFFECT	PARAMETER	RANGE
CELESTE1-2	DEPTH	0 - 50	ORGAN TREMOLO	DEPTH1	0 - 50
	SPEED	0 - 50		SPEED1	0 - 50
	DETUNE	-50 - +50		DEPTH2	0 - 50
	DELAY	0 - 50		SPEED2	0 - 50
	BALANCE	0 - 100		INTENSITY	-50 - +50
CHORUS1-2	DEPTH	0 - 50	SINGLE DELAY	DELAY	0 - 50
	SPEED	0 - 50		DETUNE	-50 - +50
	DETUNE	-50 - +50		KEY SHIFT	-24 - +24
	DELAY	0 - 50		BALANCE	0 - 100
	BALANCE	0 - 100		INTENSITY	-50 - +50
ENSEMBLE1-2	DEPTH1	0 - 50	REPEAT DELAY	SPEED	0 - 30
	SPEED1	0 - 50		DECAY	0 - 30
	DEPTH2	0 - 50		SUSTAIN	0 - 30
	SPEED2	0 - 50		RELEASE	0 - 30
	DETUNE	-50 - +50		INTENSITY	-50 - +50
TREMOLO	DEPTH	0 - 50	SOLO EFFECT1	DISTORTION	ON / OFF
	SPEED	0 - 50		TOUCH DEPTH	0 - 50
	WAVE	SIN/TRI/SQR/SAW		DEPTH	0 - 100
	BALANCE	0 - 100		SOLO EFFECT2	DISTORTION
INTENSITY	-50 - +50	TOUCH DEPTH	0 - 50		
		DEPTH	0 - 100		
		INTENSITY	-50 - +50		

ENVELOPE



- ATK: Attack Time
- DCY1: Decay Time 1
- SUS1: Sustain Level 1
- DCY2: Decay Time 2
- SUS2: Sustain Level 2
- RLS: Release Time

CURVE (LEVEL / FILTER)



MIDI Implementation Chart

Organ [SX-GA1/SX-GA3]

(Transmitted)

Function	U.SOUND1,2,3, L.SOUND2,3, PART8~15	BASS (PEDAL)	L. SOUND1	K.B PERC (PART16)	U. ORGAN	L. ORGAN	ACMP1, ACMP2, ACMP3, BASS	DRUMS	CHORD	CONTROL	Remarks
Basic Default	1-16	1-16	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	1-16	1-16	
Mode Default	3	3	3	3	3	3	3	3	3	3	OMNI OFF, POLY MODE
Mode Messages	×	×	×	×	×	×	×	×	×	×	
Mode Altered	—	—	—	—	—	—	—	—	—	—	
Note Number	0-119	0-119	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.
Velocity Note ON	○	○	○	○	○	○	○	○	○	—	
Velocity Note OFF	×	×	×	×	×	×	×	×	×	—	
After Key's	×	×	×	×	×	×	×	×	×	—	
Touch Ch's	○×*	○×*	○×*	×	×	×	×	×	×	—	
Pitch Bender	○*	○*	○*	×	○	○	○*	×	×	×	
Control Change	0,32 1 6,38 7 10 11 64 80 82 91 92 93 94 100,101 120 121	○×* ○* ○×* ○×* ○×* ○×* ○×* ○×* ×	○×* ○* ○×* ○×* ○×* ○×* ○×* ○×* ×	○×* ○* ○×* ○×* ○×* ○×* ○×* ○×* ×	○×* ×	○×* ×	○×* ×	○×* ○* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×*	○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×*	○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×* ○×*	bank select MSB, LSB modulation data entry MSB, LSB volume panpot expression sustain auto play chord intro, fill in, ending reverb tremolo digital effect DSP effect/effect RPN LSB, MSB all sound off reset all controllers
Prog Change	True #	○×*	○×*	○×*	○×*	○×*	○×*	○×*	○×*	○×*	Changes depending on program change mode and prog.cng to p.mem.
System exclusive					○						
System common	Song Pos				○×*						
System common	Song Sel				○×* (0-19)						
System common	Tune				×						
System Real Time	Clock				○						
System Real Time	Commands				○×*						start/stop, continue
Aux	Local ON/OFF	×	×	×	×	×	×	×	×	×	—
Aux	All notes OFF	×	×	×	×	×	×	×	×	×	—
Messages	Active Sense				○						
Messages	Repeat				×						
Notes		○×*.....Whether or not the data for each of these items is transmitted can be set. ○*.....Transmitted during SEQUENCER playback and during rhythm performance.									

Mode 1: OMNI ON, POLY

Mode 2: OMNI ON, MONO

○:Yes

Mode 3: OMNI OFF, POLY

Mode 4: OMNI OFF, MONO

×:No

MIDI Implementation Chart

Organ [SX-GA1/SX-GA3]

(Recognized)

Function	U.SOUND1,2,3, L.SOUND2,3, PART8~15	BASS (PEDALS)	L. SOUND1	K.B PERC (PART16)	U. ORGAN	L. ORGAN	ACMP1, ACMP2, ACMP3, BASS	DRUMS	CHORD	CONTROL	Remarks		
Basic Default	1-16	1-16	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	1-16	1-16			
Mode Default	3	3	3	3	3	3	3	3	3	3	OMNI OFF, POLY MODE		
Mode Messages	×	×	×	×	×	×	×	×	×	×			
Mode Altered	—	—	—	—	—	—	—	—	—	—			
Note Number	0-127	0-127	0-127	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.	
Velocity True voice	0-127	0-127	0-127	0-127	0-127	0-127	0-127	0-127	0-127	0-127	—		
Velocity Note ON	○	○	○	○	○	○	○	○	○	○	—		
Velocity Note OFF	×	×	×	×	×	×	×	×	×	×	—		
After Key's	×	×	×	×	×	×	×	×	×	×	—		
Touch Ch's	○X*	○X*	○X*	○X*	×	×	×	×	×	×	—		
Pitch Bender	○X*	○X*	○X*	×	○	○	○X*	×	○X*	×			
Control Change	0,32 1 6,38 7 10 11 64 80 82 91 92 93 94 100,101 120 121	○X* ○X* ○X* ○X* ○X* ○X* ○X* ×	○X* ○X* ○X* ○X* ○X* ○X* ○X* ×	○X* ○X* ○X* ○X* ○X* ○X* ○X* ×	○X* ×	○X* ×	○X* ×	○X* ×	○X* ×	○X* ×	○X* ×	○X* ×	bank select MSB, LSB modulation data entry MSB, LSB volume panpot expression sustain auto play chord intro, fill in, ending reverb tremolo digital effect DSP effect/effect RPN LSB, MSB all sound off reset all controllers
Prog Change	True #	○X*	○X*	○X*	○X*	○X*	○X*	○X*	○X*	○X*	○X*	Changes depending on program change mode and prog.ong to p.mem.	
System exclusive					○								
System common	Song Pos				○X*								
System common	Song Sel				○X* (0-19)								
System common	Tune				×								
System Real Time	Clock				○								
System Real Time	Commands				○X*							start/stop,continue	
Aux	Local ON/ OFF	×	×	×	×	×	×	×	×	×	—		
Aux	All notes OFF	○	○	○	○	○	○	○	○	○	—		
Messages	Active Sense				○								
Messages	Repeat				×								
Notes		○X*.....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

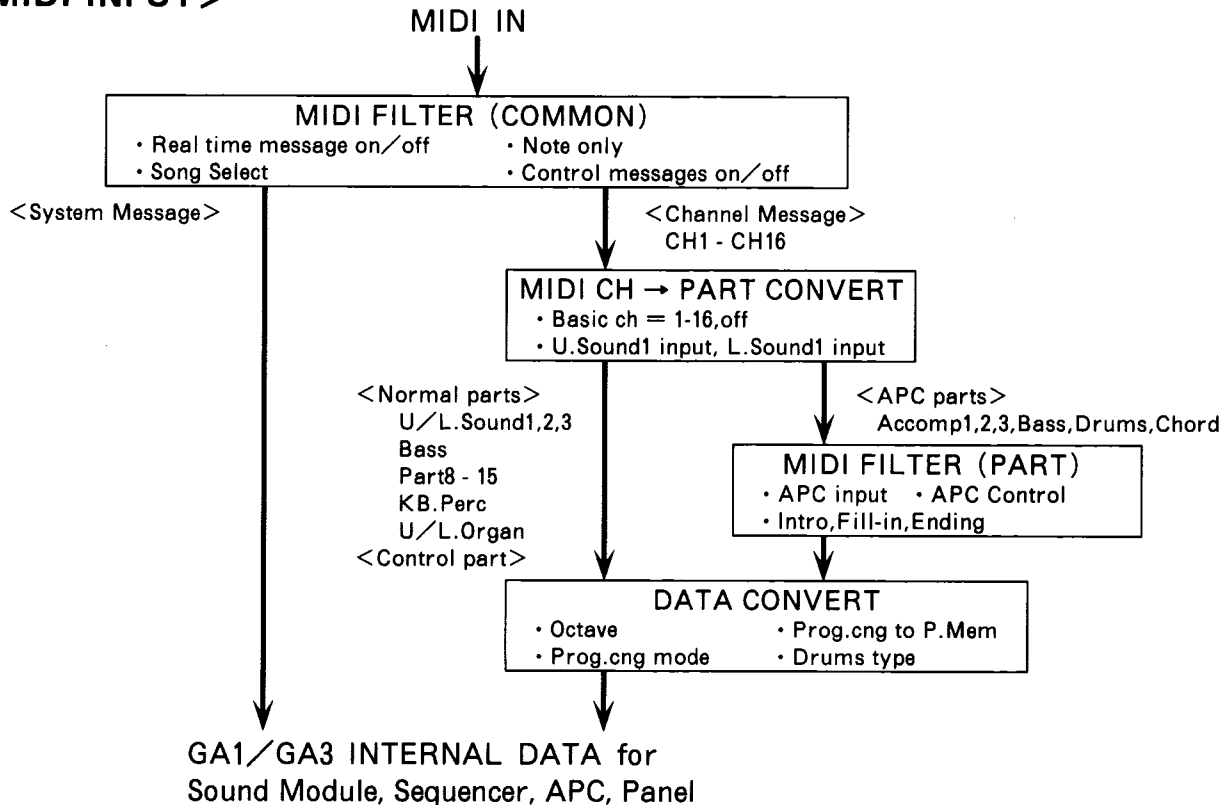
Mode 4: OMNI OFF, MONO

×:No

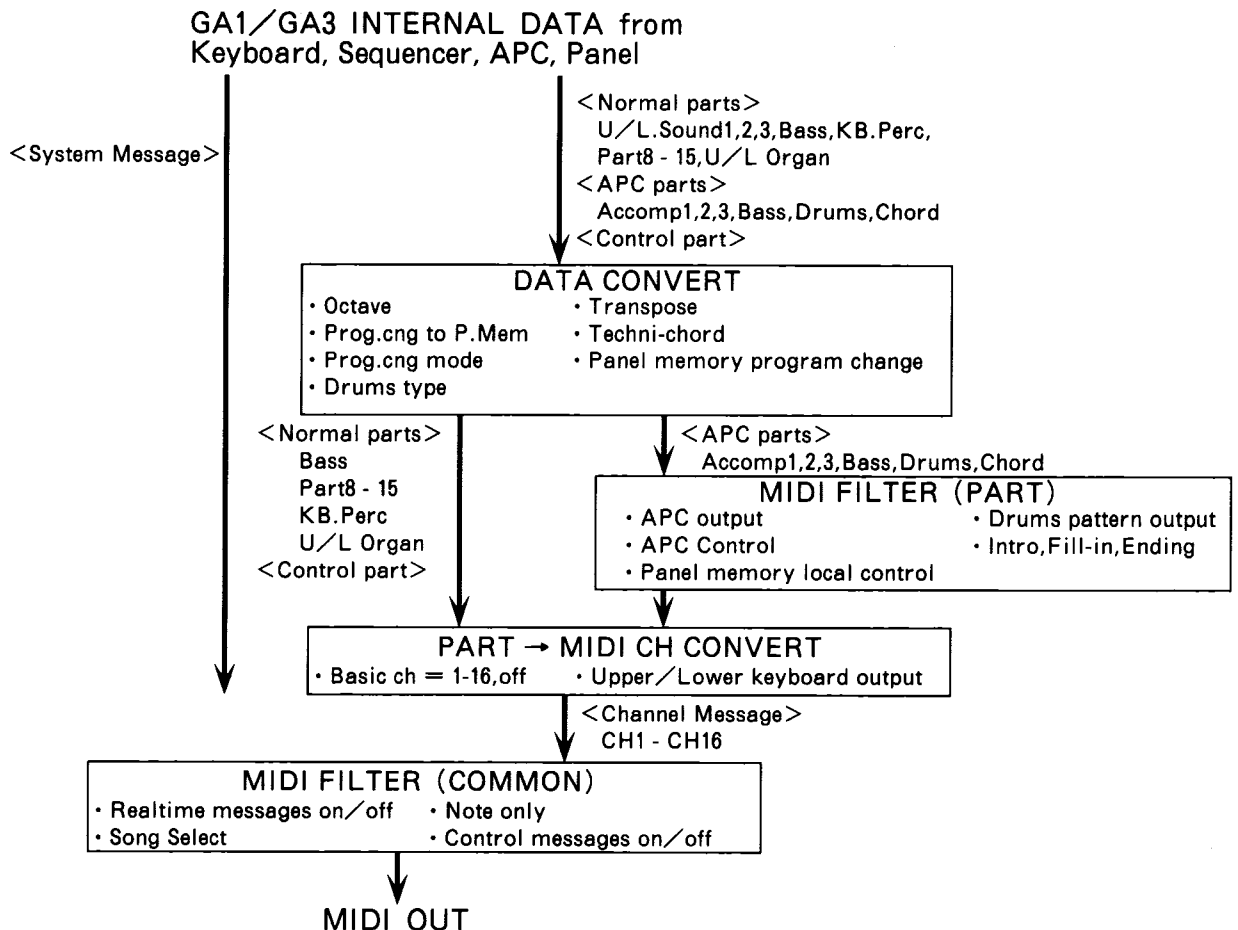
MIDI DATA FORMAT

MIDI DATA FLOWCHART

<MIDI INPUT>



<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)
11	Bank select value (LSB)

- n: 0–F Basic channel
 mm,11: 00H–7FH
 ·Indicates program change bank. Used when
 program Change mode is set to Normal mode or
 Technics mode.
 ·Transmission/reception of ACCOMP 1,2,3, and
 BASS 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
 ·Transmission of ACCOMP 1,2,3 BASS and
 DRUMS modulation is possible only when the
 rhythm is on, and transmission/reception only
 during COMPOSER record.

Volume

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

- n: 0–F Basic channel
 vv: 00H–7FH

Data entry

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

- n: 0–F Basic channel
 mm,11: Values conform to the parameters
 specified for the RPN.

Panpot

BnH	Control change status
0AH	Panpot
vv	Panpot value

- n: 0–F Basic channel
 vv: 00H(Left)–40H(Center)–7FH(Right)

Expression

BnH	Control change status
0BH	Expression
vv	Expression value

- n: 0–F Basic channel
 vv: 00H–7FH

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
 ·Transmission of ACCOMP 1,2,3 and BASS
 sustain is possible only when the rhythm is on,
 and transmission/reception only during
 COMPOSER record.

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 LOWER SOUND 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
 03H = INTRO
 05H = FILL IN 2
 07H = COUNT INTRO

· 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: 00H-3FH (00H) Off
 40H-7FH (7FH) On

· Transmitted data is indicated by parentheses().
 · The Reverb for the CONTROL part is the total reverb.
 · The reverb on/off data for the U.Organ and L.Organ is transmitted/received on the basic channel for the U.Organ part.

Tremolo

BnH	Control change status
5cH	Tremolo
vv	Tremolo on/off

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

· Transmitted / received on the basic channel for the Upper/Lower Organ part.

Digital effect

BnH	Control change status
5DH	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/Effect

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

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

· 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)
11	RPN data number (LSB)

n: 0-F Basic channel
 mm,11: 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, Coarse Tuning (corresponding respectively to the Pitch bend Range and Key Shift of the GA), Fine Tuning, and RPN reset.

RPN		Data Entry		
MSB	LSB	MSB	LSB	
00H	00H	mm	---	Pitch Bend Sensitivity mm:00H-0CH (0-12semi-tones) 11: ignored · Up to 1 octave can be specified in semi-tone increments.
00H	01H	mm	11	Fine Tuning mm,11:00H,00H-40H,00H-7FH,7FH (-128*100/128-0-127*100/128cents) · 11:00H or 40H (lower 6 bits ignored) · Can be specified in 100/128 cent
00H	02H	mm	---	Coarse Tuning mm, 34H-40H-4CH (-12-0-+12 semi-tones) 11: ignored · Up to 1 octave can be specified in semi-tone increments.
7FH	7FH	---	---	RPN Reset mm,11: ignored · For when the RPN number is not specified. · The internal set value does not 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.
 •Transmission/reception of ACCOMP 1,2,3,and BASS program change is possible only during COMPOSER record.
 •When PROG.CNG TO P.MEM is ON, the PANEL MEMORY numbers are transmitted/received on the basic channel for the U.SOUND 1 part.

Channel pressure (After Touch)

DnH	Channel pressure status
VV	Channel pressure value

- n: 0-F Basic channel
 vv: 00H-7FH

Pitch bend change

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

- n: 0-F Basic channel
 11,mm: 00H-7FH Pitch bend data
 •The Pitch Bend Range is determined by the Pitch Bend Range(Pitch Bend Sensitivity)of each part.
 •Transmission of ACCOMP 1,2,3 and BASS Pitch bend change is possible only when the rhythm is on, and transmission/reception 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
11	Least significant
mm	Most significant

- 11,mm: 00H - 7FH

Song select

F3H	Song select
ss	Song number

- ss: 0-19

■ 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

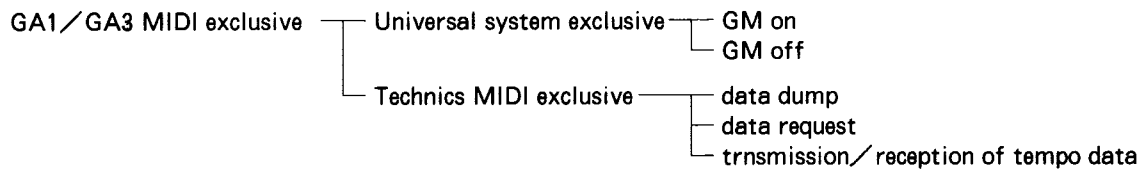
F0H	System exclusive status
ii	ID number
dd	data
:	:
dd	data
F7H	End of exclusive status

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

dd: 00H-7FH

About the GA1/GA3 MIDI exclusive

Outline of GA1/GA3 MIDI exclusive



Universal system exclusive Message format

Turn General MIDI System On:

F0H	Exclusive status
7EH	Universal Non-Real Time SysEx
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
7EH	Universal Non-Real Time SysEx
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	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
2DH	BTR: Data block
7EH	CDD: Continuing data

PC: Technics product category ID

03H	GA
7EH	DMY: Dummy data for ACK,NAK,EOK,END,ERR,FUL

MD: Model differentiating ID

40H	GA
-----	----

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

(J = 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.

■ The form of the transmission message

Function	SOX =F0H	IDC =50H	CMD	PC =03H	MD =40H	VER =10H	[data]					EOX =F7H
							ADR	SIZ	DT	CN	SM	
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 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 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 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)			
30 00 00~	0C0000H~	SOUND MEMORY	HEADER	NON-REAL TIME
30 00 50~	0C0050H~		PARAMETER	NON-REAL TIME
40 00 00~ 41 00 00~	100000H~ 108000H~	PANEL	PANEL DATA	NON-REAL TIME
			PANEL MEMORY	NON-REAL TIME
50 00 00~ 50 00 60~ 50 0F 60~	140000H~ 140060H~ 1407E0h~	COMPOSER	LOCATION	NON-REAL TIME
			HEADER	NON-REAL TIME
			PERFORMANCE	NON-REAL TIME
60 00 00~ 60 02 00~ 60 08 00~	180000H~ 180100H~ 180400H~	SEQUENCER	LOCATION	NON-REAL TIME
			HEADER	NON-REAL TIME
			PERFORMANCE	NON-REAL TIME

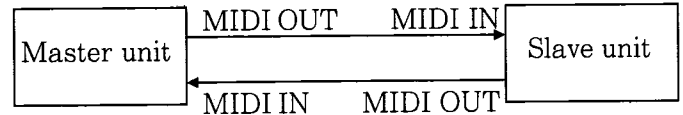
Classification of data dump areas

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.

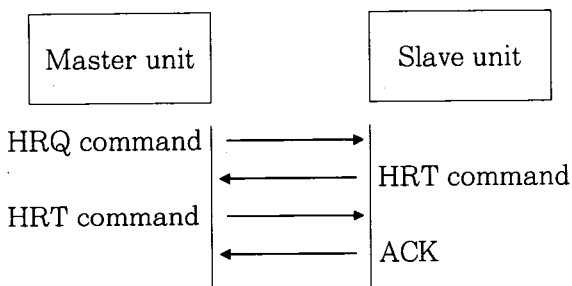


In handshake transmission, the transmission status between the master unit and slave unit is being confirmed during data transmission. For this reason, a MIDI cable connection from the slave unit to the master unit is also necessary. In comparison to one-way transmission, handshake transmission is faster.

In the GA1/GA3, 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

■ Communication sequence of handshake confirmation



HRQ command: handshake request

SOX	F0H
IDC	50H
HRQ	21H
PC	03H
MD	40H
VER	10H
EOX	F7H

HRT command: handshake routine

SOX	F0H
IDC	50H
HRT	22H
PC	03H
MD	40H
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.

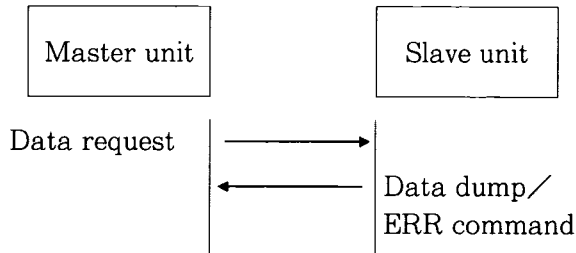
■ Sequence of tempo data communication



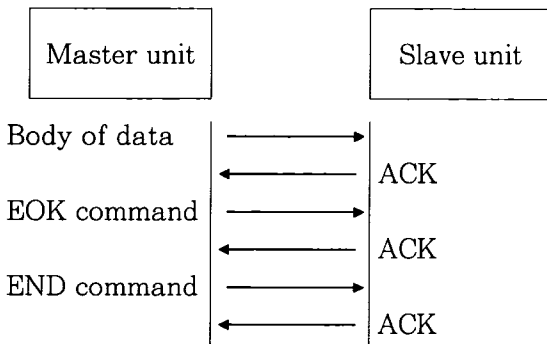
Tempo command

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

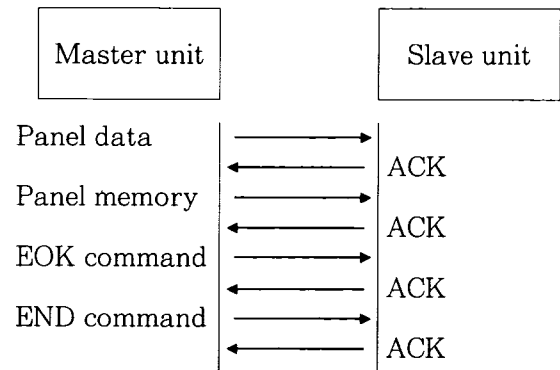
In the GA1/GA3, data is divided into five types: ALL, PANEL, SOUND MEMORY, COMPOSER, and SEQUENCER.

After the above handshake routine is concluded and communication link is established, the various kinds of data are respectively transmitted as described below.

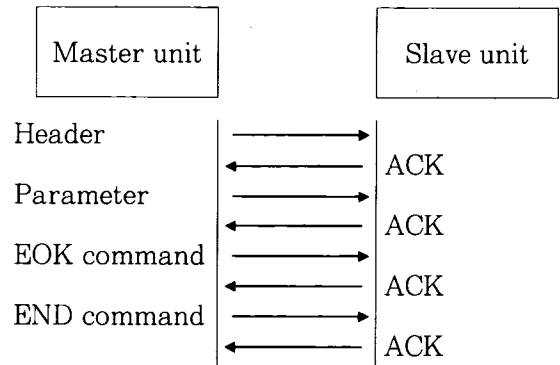
For one-way transmission, the transmission interval between packets is more than 50 msec.

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.

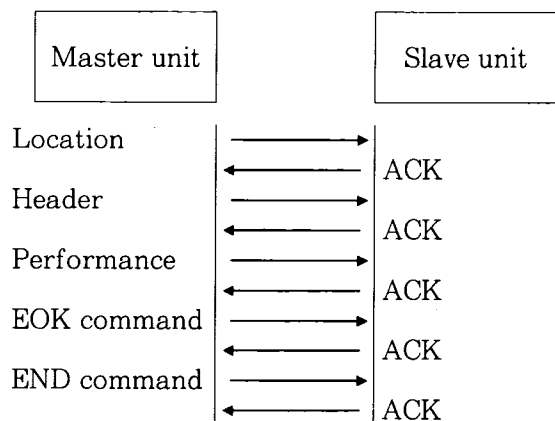
● Panel



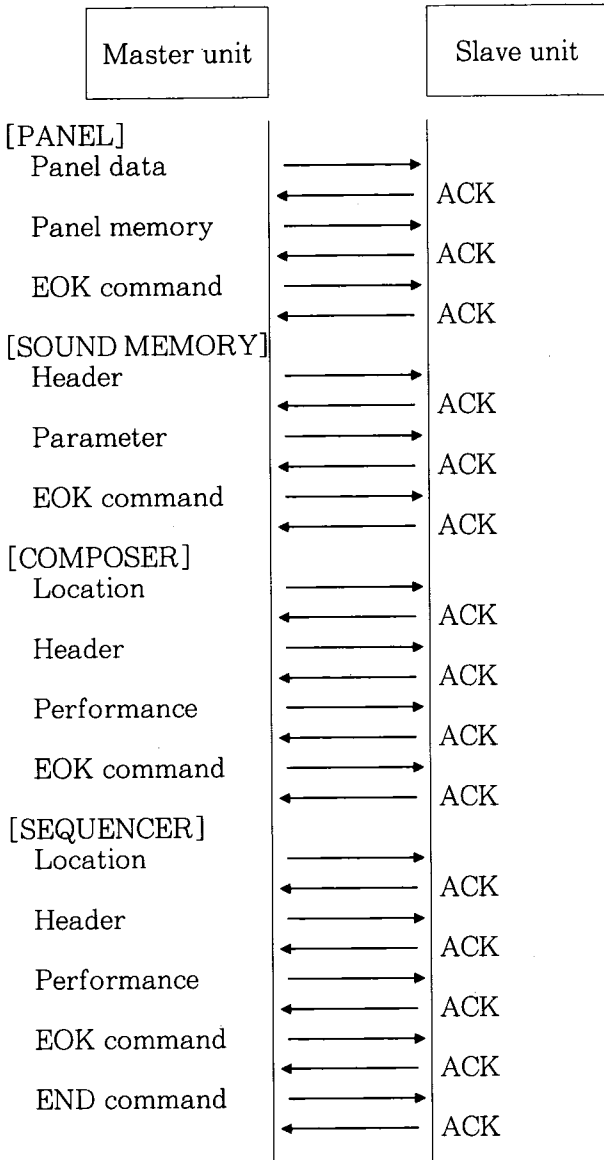
● Sound memory



● Composer data, Sequencer data



● All data



● SIZ of data dump area

SIZ		Area	Subarea
MSB	LSB		
00 00	50 00	SOUND MEMORY	HEADER PARAMETER
00 00	63 00		
00 0B	10 00	PANEL	PANEL DATA PANEL MEMORY
00 00	40 00		
00 00	60 00	COMPOSER	LOCATION HEADER PERFORMANCE
00 0F	00 00		
Variable			
00 02	00 00	SEQUENCER	LOCATION HEADER PERFORMANCE
00 06	00 00		
Variable			

● ADR of data request concerns the data dump

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

GENERAL MIDI SETTINGS

■ SOUND

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

()=Number of Tones

* =SUB Tone is used. Depending on the sound output status of the instrument, it may be generated.

<1>=Sound number of only GA3

■ Parts

MIDI CHANNEL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PART	US1	US2	US3	LS1	LS2	LS3	BAS	P8	P9	KBP	P10	P11	P12	P13	P14	P15
SEQUENCER TRACK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

■ Non-working Function

ONE TOUCH PLAY/MUSIC STYLE SELECT, MUSIC STYLE ARRANGER, TECHNI-CHORD, AUTO PLAY CHORD, BACK GROUND SOUND, COMPOSER, SOUND EDIT

MIDI PRESET DATA

		Without APC										With APC												
Master ↓ Slave		GA		Keyboard type1	PX	Sound module	Ext SEQ	Keyboard		PR series		PX	Ext SEQ	GA		Keyboard type1	Sound module	Ext SEQ	Keyboard		PR series		PX	Ext SEQ
		type1	type2					type1	type2	type1	type2			type1	type2				type1	type2	type1	type2		
Basic channel	U SOUND1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	U SOUND2	8	8	off	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	U SOUND3	2	4	off	4	4	4	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	L SOUND1	4	2	off	2	2	4	2	2	2	2	2	2	2	4	2	2	2	4	2	2	2	2	2
	L SOUND2	7	7	off	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	L SOUND3	8	8	off	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	BASS	3	3	off	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	U ORGAN	13	13	off	13	13	13	13	13	13	13	13	13	13	13	13	off	13	13	13	13	13	13	13
	L ORGAN	14	14	off	14	14	14	14	14	14	14	14	14	14	14	14	off	14	14	14	14	14	14	14
	K.PERC	15	16	off	16	16	16	15	16	15	16	16	16	16	16	16	off	16	16	16	16	16	16	16
	8	5	5	off	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
	9	9	9	off	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
	10	10	10	off	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
	11	11	11	off	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	
	12	12	12	off	12	12	12	12	12	12	12	12	12	12	12	12	off	12	12	12	12	12	12	
	13	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	
	14	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	
	15	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	
Control	16	15	off	15	15	16	15	16	15	15	15	15	15	16	15	off	15	16	15	16	15	15	15	
Accomp1		off	off	off	off	off	off	off	off	off	off	off	off	off	off	12	off	off	off	off	off	off	off	
Accomp2		off	off	off	off	off	off	off	off	off	off	off	off	off	off	13	off	off	off	off	off	off	off	
Accomp3		off	off	off	off	off	off	off	off	off	off	off	off	off	off	14	off	off	off	off	off	off	off	
Bass		off	off	off	off	off	off	off	off	off	off	off	off	off	off	15	off	off	off	off	off	off	off	
Drums		off	off	off	off	off	off	off	off	off	off	off	off	off	15	18	18	18	15	18	15	18	18	
Chord		off	off	off	off	off	off	off	off	off	off	off	off	off	5	5	off	5	5	5	5	5	off	
Octave shift	all ch.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Local setting	all ch.	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	
Program change Bank select, Pitch Bend, Volume, Expression, Panpot, Sustain, Effect/Reverb, Modulation, Tuning, Bend range, Reset all controller		on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	
After touch		off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	
Realtime message Clock		on int	on int	on int	on int	on int	on ext	on ext	on ext	on ext	on int	on ext	on ext	on int	on ext	on int	on ext	on ext	on ext	on ext	on ext	on int	on ext	
Input mode Upper		Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Direct	
Input mode Lower		Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Direct	
Input mode APC		off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	
Output mode Upper		Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	
Output mode Lower		Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	Cndct	
Techni-chord out		off	off	off	off	off	off	off	off	off	off	off	off	off	off	on	off	off	off	off	off	off	off	
Drums out		off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	
Accomp out		off	off	off	off	off	off	off	off	off	off	off	off	off	on	on	on	on	on	on	on	on	on	
P.ong → P.Mem		off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	
P.Mem → P.ong		off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	
Note only		off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	
Realtime sysex.		on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	
Non realtime sysex.		off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	
Intro/Fill/Ending		off	off	off	off	off	off	off	off	off	off	off	off	off	on	on	on	on	on	on	on	on	on	
APC control		off	off	off	off	off	off	off	off	off	off	off	off	off	on	on	on	on	on	on	on	on	on	
Transpose		off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	off	
Program change mode		TECH	TECH	NORM	GM	TECH	TECH	TECH	TECH	TECH	NORM	TECH	TECH	TECH	TECH	GM	TECH	TECH	TECH	TECH	TECH	NORM	TECH	
Drums mode		TECH	TECH	TECH	GM	TECH	TECH	TECH	TECH	TECH	TECH	TECH	TECH	TECH	TECH	GM	TECH	TECH	TECH	TECH	TECH	TECH	TECH	
Song select		on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	on	

type1 : Setting used when the connected equipment does not have the MIDI PRESETS capability.

type2 : Setting used when the connected equipment has the MIDI PRESETS capability, and the MIDI PRESETS are specified both on this instrument and on the connected equipment.