



*Skx*

**APPENDIX**



## APPENDIX

### ◆ Specifications

#### Sound Generator

##### Organ Section

2 - VASE III as Digital Tone-Wheels, Transistor Organ and Pipe Organ  
 61 polyphony (for Manual, except Pipe Organ)  
 8 polyphony (for Pedal, except Pipe Organ)  
 63 polyphony (maximum, on Pipe Organ)

##### Extra Voice Section

VASE III, 63 polyphony (maximum)

#### Keyboards

2 x C1 to C6 61-key

#### Organ Section

##### Drawbars

Upper: 9 Pitches  
 Lower: 9 Pitches  
 Pedal: 2 Pitches

##### Organ Types

Manuals: 6 choices (B-Type1, B-Type2, Mellow, Vx, Farf, Pipe)  
 Pedal: 7 choices (Normal, Muted, Synth1, Synth2, Finger, Pick, Slap)

##### Touch Response Percussion

Buttons: On, Volume Soft, Fast Decay, Third Harmonic

#### Extra Voice Section

##### Sections

2 Sections for Manuals

##### Instruments

6 Groups (A, Piano, E, Piano, Keyboard, Wind, Other, Library)  
 Upgradable via Library

##### Control

Upper On, Lower On, Group

#### Effects

##### Vibrato and Chorus

Digital Scanner  
 Buttons: Upper On, Lower On

##### Overdrive

Digital, 4 programs  
 Control: On, Amount

##### Multi Effects

8 programs for Organ/Extra Voice individually  
 Control: On, Amount

##### Equalizer

for Organ: Bass, Mid (sweep), Treble, Tone  
 for Extra Voice: Bass, Mid (sweep), Treble

##### Internal Leslie

Advanced Digital, 2 Rotors  
 Buttons: Bypass, Stop, Fast

##### Reverb

Digital, 11 programs  
 Control: On, Depth

##### Master Equalizer

Bass, Mid, Treble

#### Keymap

##### Buttons

Manual Bass, Lower to Pedal, Octave Up, Octave Down, Lower, Transpose

#### Patches

##### Capacity

100 User Patches, 100 Preset Patches, Manual

##### Favorites

10 Banks, 10 Numbers

#### Patch Load Options

Drawbar Registration, Drawbar Parameters, Extra Voice, Internal Zone, External Zone, Organ Effects, Animation, Exv Effects, Reverb

#### Controllers

##### Volumes

Master Volume, Organ Volume, Extra Voice Volume, Extra Voice Balance

##### Switch

Power On/Off

#### Music Player

##### File Format

WAV (44.1kHz, 16bit, Stereo), MP3 (44.1kHz, 128kbps, Stereo)

#### Storage

USB Flash Drive

#### Display

20 - Characters, 2 - Lines

#### MIDI

##### Templates

4 Templates

##### External Zones

3 Zones, assignable any keyboards

#### Connections

##### MIDI

In, Out

##### Audio

Line Out L, R, Headphones

##### Leslie

11 - pin, 1 and 3 channels available

##### Other

Foot Switch, Damper Pedal, Exp. Pedal, DC IN (12V)

#### Accessory

AC Adaptor AD3-1250-2P

#### Dimensions

944(W), 454(D), 170(H) mm

#### Weight

16.9kg

## ◆ EXTRA VOICE Instrument List

Group	Number	Description
0 A. Piano	0 Stereo Grand Pf.	Concert grand piano. The maximum sound effect is obtained when connected stereo.
0 A. Piano	1 Bright Stereo Grand Pf.	
0 A. Piano	2 Mono Grand Pf.	The mono version of above. Use this if connection is monaural. The annoying phase cancellation due to the combined left and right channels is avoided.
0 A. Piano	3 Bright Mono Grand Pf.	
0 A. Piano	4 Electric Grand Pf.	The 1970's "Solid Body" electric piano, which used true piano strings, grand piano action and magnetic pickups. The following "EQ" means equalized edition.
0 A. Piano	5 Electric Grand Pf. EQ	
1 E. Piano	0 E. Piano Rd1	Tone-bar electric piano (first edition). The following "Pan", "Phase", "OD" are using each effect.
1 E. Piano	1 EP Rd1 Pan	
1 E. Piano	2 EP Rd1 Phase	
1 E. Piano	3 EP Rd1 OD	
1 E. Piano	4 - 7 E. Piano Rd2, Pan, Phase, OD	Tone-bar electric piano (second edition). The following "Pan", "Phase", "OD" are using each effect.
1 E. Piano	8 E. Piano FM	FM synth electric piano. The following "Chorus" is using chorus effect.
1 E. Piano	9 EP FM Chorus	
1 E. Piano	10 E. Piano Wur	Reed-driven electric piano. The following "Trem" is using Tremolo, "OD" is using Overdrive effect.
1 E. Piano	11 EP Wur Trem	
1 E. Piano	12 EP Wur OD	
1 E. Piano	13 EPiano Bass	"E. Piano Rd2" for playing bass line.
1 E. Piano	14 EPiano Wur Mellow	Mellow setting of "E. Piano Wur".
1 E. Piano	15 EP FM Belly	Variation of the "E. Piano FM" with a "bell-like" (belly) tone.
2 Backing Str.	0 Synth Str. Fast Mellow	Synth. Strings with fast attack.
2 Backing Str.	1 Synth Str. Slow Mellow	Synth. Strings with slow attack.
2 Backing Str.	2 Synth Str. Fast Bright	Synth. Strings with fast attack and bright sound.
2 Backing Str.	3 Synth Str. Slow Bright	Synth. Strings with slow attack and bright sound.
2 Backing Str.	4 Synth Str. Octave	Synth. Strings with octave unison.
2 Backing Str.	5 Warm Pad	A "Pad" that mellow than the "Strings".
2 Backing Str.	6 Sweep and S/H	A "Pad" which modulates using LPF sweep and S/H effects.
2 Backing Str.	7 Pluck and Sweep	"Pluck" sound followed by sweeping Pad.
2 Backing Str.	8 Out Of The	Synth Lead with fat and bright sound.
3 Keyboard	0 Harpsi 8'	Harpsichord. "8'" is normal, "8' 4'" is in octave unison, "Lute" refers to damping the treble.
3 Keyboard	1 Harpsi 8' 4'	
3 Keyboard	2 Harpsi 8' Lute	
3 Keyboard	3 Clav. AC	Electric clavichord. "AC", "AD", "BC", "BD" indicate the pick-up selector.
3 Keyboard	4 Clav. AD	
3 Keyboard	5 Clav. BC	
3 Keyboard	6 Clav. BD	
3 Keyboard	7 - 10 Clav. AC, AD, BC, BD Wah	"Clav. AC" - "Clav BD" with "Touch-Wah" effect. Filter opens wider as keys are struck harder.
3 Keyboard	11 - 14 Clav. AC, AD, BC, BD Cry	"Clav. AC" - "Clav BD" with "Pedal Wah" effect. Use a connected Expression Pedal to add Wah-Wah effect.
3 Keyboard	15 Clavition	Left position of the keyboard sustains if the key is released, right position of the keyboard sounds a chord when a key is pressed.
3 Keyboard	16 Lucy	The sound of an early electronic keyboard as heard on "Lucy In The..."
3 Keyboard	17 Lucy Tremolo	
3 Keyboard	18 Clavn.	Simulates a 1950's monophonic keyboard instrument.
3 Keyboard	19 Don't Run	The reed sound like "Walk, Don't...".
3 Keyboard	20 Telstar	The sound of the pre-synthesizer instrument "Clavn." as heard on the song "Telstar".
3 Keyboard	21 Blue Star	Simulates an electronic organ as heard in "Blue Star".
3 Keyboard	22 - 32 Accordion A120	Variations of Suzuki accordion A-120.
	1/0/0, 1/1/0, 1/0/1, 1/1/1, 1/2/0, 1/2/1, 0/1/0, 0/2/0, 0/1/1, 0/2/1, 0/0/1	
3 Keyboard	33 Accordion A120 OD	Overdriven accordion.
3 Keyboard	34 Acn Mellow 0/1/0	Mellow accordion. "MMM" is Musette accordion with adjustable detuning by [AMOUNT] knob of the Extra Voice effects.
3 Keyboard	35 Acn Mellow 0/2/0	
3 Keyboard	36 Acn Mellow MMM	
3 Keyboard	37 Acn Bright 0/1/0	Bright accordion.
3 Keyboard	38 Acn Bright 0/2/0	
3 Keyboard	39 Acn Bright MMM	
3 Keyboard	40 Doob Real Love	"Clav. AD" with added Overdrive and Phaser effects.
4 Wind	0 Trumpet Straight	Trumpet. "Straight", "Vibrato" and "Muted" indicate variations.
4 Wind	1 Trumpet Vibrato	
4 Wind	2 Trumpet Muted	
4 Wind	3 Trombone Straight	Trombone. "Straight", "Muted" indicate variations.
4 Wind	4 Trombone Muted	
4 Wind	5 Flute Vibrato	Flute with Vibrato. A harder attack will be produced by a faster key stroke.
4 Wind	6 Al. Sax Straight	Alto Saxophone. "Straight", "Vibrato" indicate variations.
4 Wind	7 Al. Sax Vibrato	
4 Wind	8 T.n. Sax Straight	Tenor Saxophone. "Straight", "Vibrato" indicate variations.
4 Wind	9 T.n. Sax Vibrato	
4 Wind	10 Ba. Sax Straight	Baritone Saxophone.

## ◆ EXTRA VOICE Instrument List (cont.)

Group	Number	Description
4 Wind	11 Tp + Tb Straight	Trumpet and trombone playing in octave unison. "Straight", "Vibrato" indicate variation.
4 Wind	12 Tp + Tb Vibrato	
4 Wind	13 Tp + Tb Muted	
4 Wind	14 Flute Pcd	A Flute section. A melody with harmony is heard if a single note is played on the Upper keyboard while holding notes on the Lower keyboard.
4 Wind	15 BigBand Sax Pcd	A Big Band Saxophone section. Alto sax as the top note, tenor sax, baritone sax as the harmony notes if a single note is played on the Upper keyboard while holding notes on the Lower keyboard.
4 Wind	16 BigBand Pcd	A Big Band Brass. Trumpet as the top note, alto sax, trombone and tenor sax as the harmony notes if a single note is played on the Upper keyboard while holding notes on the Lower keyboard.
4 Wind	17 BigBand FD Pcd	
4 Wind	18 Quartet 1 Pcd	Instrumentation is same as "Big Band Pcd", but with different harmony voicing.
4 Wind	19 Quartet 2 Pcd	Instrumentation is same as "Big Band Pcd", but with different harmony voicing.
4 Wind	20 Jazz Brass Pcd	A modern Big Band Brass section. Trumpet as the top note, trumpet, trombone as the harmony notes if a single note is played on the Upper keyboard while holding notes on the Lower keyboard. "FD" means fall-down when played with fortissimo and released.
4 Wind	21 Jazz Brass FD Pcd	
4 Wind	22 Mute Combo 1 Pcd	The Brass Combo with muted trumpets and straight trombone. 3-part harmony is heard if a single note is played on the Upper keyboard while holding notes on the Lower keyboard.
4 Wind	23 Mute Combo 2 Pcd	The Brass Combo with muted trumpets and muted trombone. 3-part harmony is heard if a single note is played on the Upper keyboard while holding notes on the Lower keyboard.
4 Wind	24 BigBand Gliss Up Pcd	Variation of "BigBand Pcd". Glissandos "up" when the played fortissimo and released.
4 Wind	25 Two Trumpets	Two trumpets in unison.
4 Wind	26 Unison Brass	Octave unison of trumpet, alto sax, trombone and tenor sax.
4 Wind	27 Synth Brass Afri	Mellow synth brass similar to "Afri...".
4 Wind	28 Synth Brass Rosa	Bright synth brass similar to "Rosa...".
5 Other	0 Glockenspiel	Orchestra bells or glockenspiel, effective if used with Drawbar sounds.
5 Other	1 Vibraphone	Hard hit vibraphone. Also effective if used with Drawbar sounds.
5 Other	2 Solly Strings	Late 1970's strings ensemble keyboard. "o" indicates octave unison, "Long" indicates longer release rate.
5 Other	3 Solly Strings o	
5 Other	4 Solly Strings Long	
5 Other	5 Solly Strings o Long	
5 Other	6 Syn. Strings 1	Simulates the strings keyboard via multi-effects. "o" indicates octave unison.
5 Other	7 Syn. Strings 1 o	
5 Other	8 Syn. Strings 2	Synthesized strings sounds. Simulates the strings of the Hammond SX/CX series.
5 Other	9 Syn. Strings 2 o	
5 Other	10 Syn. Strings 3	Synthesized strings sounds. Using 3 sawtooth waveforms.
5 Other	11 Sweep Pad	Synth pad with slow filter sweep. "Slice" adds the deep tremolo effect.
5 Other	12 Slice Pad	
5 Other	13 H. Bell Pad	Synth pad with Hand Bells.
5 Other	14 Glock. Pad	Synth pad with Glockenspiel.
5 Other	15 Square Lead	Synth lead using Square wave.
5 Other	16 Square Mellow	Synth lead, mellower than "Square Lead".
5 Other	17 Saw Lead	Synth lead using Sawtooth wave. "Duo Pcd" adds ProChord function, providing two-part harmony if a single note is played on the Upper keyboard while holding notes on the Lower keyboard. The "Block Pcd" also has ProChord harmony providing "Block" voicing.
5 Other	18 Saw Duo Pcd	
5 Other	19 Saw Block Pcd	
5 Other	20 P. O. Love	"Saw Lead" in octave unison. Effective playing either single notes or chords, as in "The Power Of...".
5 Other	21 Funny Lead	Simulates the "green button" of a late 70's Japanese combo organ. "Duo Pcd" adds ProChord function, providing two-part harmony if a single note is played on the Upper keyboard while holding notes on the Lower keyboard.
5 Other	22 Funny Duo Pcd	
5 Other	23 Syn. Harp	Synth orchestral harp.
5 Other	24 Noise Zap	An unpitched sound effect made up of white noise and an L.PF.
5 Other	25 Finger Bs Jz	"Jazz" type electric bass, played by forefinger.
5 Other	26 Pick Bs Jz	"Jazz" type electric bass, played by the pick with muted.
5 Other	27 Pick Lng Bs Jz	Same as above with longer decay.
5 Other	28 Slap Bs Jz	"Jazz" type electric bass, played with slap style.
6 Library	0 VxJ Bright	1960's "Vx" transistor combo organ. This organ used Tablets instead of the Drawbars. It had a single tone, and the tabs varied the brightness. "Bright" is the brightest.
6 Library	1 VxJ Brass	
6 Library	2 VxJ Mellow	
6 Library	3 VxJ Flute	
6 Library	4 - 7 VxJV Bright, Brass, Mellow, Flute	"VxJ" with vibrato.
6 Library	8 - 11 VxJS Bright, Brass, Mellow, Flute	"VxJ" with sustain.

## ◆ Preset Patch List

Category	#	Name
High Lights	P001	Vintage B-3 DLS
	P002	Crunch B-3
	P003	Squabble
	P004	Hugger
	P005	Classic B-3
	P006	Ste Grand Piano
	P007	Piano&Strings
	P008	Tine E-Piano
	P009	Reed E-Piano
	P010	Clav (BD)
B-3 Organ	P011	Vintage B-3 JOS
	P012	Vintage B-3 McG
	P013	Vintage B-3 Grv
	P014	VintageB-3Burnr
	P015	VintageB-3Shrly
	P016	Vintage B-3 Bop
	P017	VintageB-3Balad
	P018	B-3 & E Pno Phs
	P019	VintageB-3Waltr
	P020	Full Spin
A / E Piano	P021	Grand Piano
	P022	Road's Suitcase
	P023	Road's Stage
	P024	Wurlt E Piano
	P025	Clav AC&BC
	P026	Clav AC&BC Wah
	P027	CP70 Elec Grand
	P028	GrndPno/Strings
	P029	FM EPno/Strings
	P030	FM El Pno Belly
Wind	P031	Solo Flute
	P032	Solo A.Sax
	P033	Solo T.Sax
	P034	Solo Trumpet
	P035	Trp & Tb
	P036	Pcd Flute Sect
	P037	Pcd Sax Sect.
	P038	Pcd Jazz Brass
	P039	Pcd Muted Combo
	P040	Pcd Syn Block
Pipe Organ	P041	Pianissimo
	P042	Piano
	P043	Mezzo Piano
	P044	Mezzo Forte
	P045	Forte
	P046	Fortissimo
	P047	Reed Solo
	P048	Sforzando
	P049	A.Pf / Positiv
	P050	Hrpsi / Positiv

Category	#	Name
Gospel Organ	P051	Classic Gospel
	P052	Slow Gospel
	P053	Contemp.Gospel
	P054	Shout Gospel
	P055	Quiet Praise
	P056	Reflectiv Praise
	P057	Dramatic Praise
	P058	Total Praise
	P059	Meditation
	P060	Full Gospel
Theater / Pop / Accor- dion	P061	Thtr Tibias 8&4
	P062	Thtr Tibias16&4
	P063	OrcOboe8&Tibia4
	P064	Pop Organ
	P065	PopOrgn&Strings
	P066	Accordion Clasc
	P067	Accordion Jazz
	P068	Accordion Zydco
	P069	Acrd Basoon&Pic
	P070	Acordion French
Others	P071	VxCombOrg/PnoBs
	P072	Neon Shuf
	P073	Runaway
	P074	Enka Lead
	P075	Tornado
	P076	Fake Arpegiator
	P077	Sleng Teng
	P078	Slice Pad
	P079	Ring Heaven
	P080	1960's Sci-Fi
With Bass	P081	GdPnoOrgan&Bass
	P082	ElPnoOrgan&Bass
	P083	VibesOrgan&Bass
	P084	TnSaxOrgan&Bass
	P085	TrptsOrgan&Bass
	P086	ElGrdOrgan&Bass
	P087	FMEPnOrgan&Bass
	P088	RdPnoOrgan&Bass
	P089	WahClOrgan&Bass
	P090	BrassOrgan&Bass
B-3 OEM Preset	P091	B-3 OEM C#Pkeys
	P092	B-3 OEM D Pkeys
	P093	B-3 OEM D#Pkeys
	P094	B-3 OEM E Pkeys
	P095	B-3 OEM F Pkeys
	P096	B-3 OEM F#Pkeys
	P097	B-3 OEM G Pkeys
	P098	B-3 OEM G#Pkeys
	P099	B-3 OEM A Pkeys
	P100	FullTheatrOrgn

## ◆ Patch Parameter List

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Patch Load
		LSB (62)	MSB (63)	MSB to LSB					
Name	15 Characters	--	--	01	00	00	0F	7 bit ASCII	always
Internal Zone	Manual Bass	07	00	00	07	00	01	00, 01 (Off/On)	INT
	Manual Bass Mode	07	01	00	07	01	01	00 - 02 (Lower, Chord, Poly)	
	Manual Bass Range Hi	07	02	00	07	02	01	24 - 60 (MIDI note number)	
	Great To Pedal	07	03	00	07	03	01	00, 01 (Off/On)	
	G to P Range Hi	07	04	00	07	04	01	24 - 3C (MIDI note number)	
	Split	07	05	00	07	05	01	00, 01 (Off/On)	
	Split Point	07	06	00	07	06	01	24 - 60 (MIDI note number)	
	Key Octave Upper 1	07	07	00	07	07	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Octave Lower 1	07	08	00	07	08	01	3E - 40 - 42 (-2 - 0 - +2)	
	Glide Length	07	09	00	07	09	01	00 - 18 (0 - 24 semitones)	
	Glide Time Attack	07	0A	00	07	0A	01	00 - 31 (0.1 - 5.0 seconds)	
	Glide Time Release	07	0B	00	07	0B	01	00 - 31 (0.1 - 5.0 seconds)	
	Glide Amp	07	0C	00	07	0C	01	00, 01 (Off/On)	
	Glide On Org	07	0D	00	07	0D	01	00, 01 (Off/On)	
	Glide On EXV1	07	0E	00	07	0E	01	00, 01 (Off/On)	
	Glide On EXV2	07	0F	00	07	0F	01	00, 01 (Off/On)	
	Key Octave Upper 2	07	10	00	07	10	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Octave Lower 2	07	11	00	07	11	01	3E - 40 - 42 (-2 - 0 - +2)	
External Zone	MIDI Channel	4n	00	00	4n	00	01	00 - 0F (1 - 16)	EXT
	Switch	4n	01	00	4n	01	01	00, 01 (Off/On)	
	Allocate	4n	02	00	4n	02	01	00 - 03 00: Off 01: Upper 02: Lower 03: Pedal	
	Key Range Lo	4n	03	00	4n	03	01	00 - 7F (MIDI note number)	
	Key Range Hi	4n	04	00	4n	04	01	00 - 7F (MIDI note number)	
	Bank Select MSB	4n	05	00	4n	05	01	00 - 7F	
	Bank Select LSB	4n	06	00	4n	06	01	00 - 7F	
	Program Change	4n	07	00	4n	07	01	00 - 7F	
	Octave Shift	4n	08	00	4n	08	01	3E - 40 - 42 (-2 - 0 - +2)	
	Volume	4n	09	00	4n	09	01	00 - 7F	
	Pan	4n	0A	00	4n	0A	01	00 - 40 - 7F (L64 - C - R63)	
	Velocity	4n	0B	00	4n	0B	01	00 - 04 (Off, Normal - Easy)	
	Expression Minimum	4n	0C	00	4n	0C	01	00 - 3F (0 - 63)	
	Expression Maximum	4n	0D	00	4n	0D	01	40 - 7F (64 - 127)	
	Expression CC#	4n	0E	00	4n	0E	01	00, 01 (7, 11)	
	Tx. Damper On	4n	0F	00	4n	0F	01	00, 01 (Off/On)	
Extra Voice	Switch Upper	5n	00	00	50	00	01	00, 01 (Off/On)	EXV
	Switch Lower	5n	01	00	50	01	01	00, 01 (Off/On)	
	Octave Shift	5n	03	00	50	03	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo	5n	04	00	50	04	01	00 - 7F (MIDI note number)	
	Key Range Hi	5n	05	00	50	05	01	00 - 7F (MIDI note number)	
	Inst. Group	5n	06	00	50	06	01	00 - 06 (1 - 7)	
	Inst. Number	5n	07	00	50	07	01	00 - 7F (1 - 128)	
	Volume	50	08	00	50	08	01	00 - 7F (0 - 127)	
	Balance	51	08	00	50	08	01	00 - 40 - 7F (64:0 - Even - 0:63)	
	Velocity	5n	09	00	50	09	01	00 - 04 (Off, Normal - Easy)	
	Expression	50	0A	00	50	0A	01	00, 01 (Off/On)	

**Example** "n" means Zone number. 1=0, 2=1, 3=2

Turn Extra Voice On via NRPN .....Bx 62 50 63 00 06 01 (x = Upper channel)

Turn Extra Voice On via System Exclusive .....F0 55 dd 10 23 13 00 50 00 01 F7 (dd = Device ID)

## ◆ Patch Parameter List (cont)

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Patch Load
		LSB (62)	MSB (63)	MSB to LSB					
Percussion	Percussion On	08	00	00	08	00	01	00, 01 (Off/On)	DRAWB
	Third On	08	01	00	08	01	01	00, 01 (Off/On)	
	Decay Fast	08	02	00	08	02	01	00, 01 (Off/On)	
	Volume Soft	08	03	00	08	03	01	00, 01 (Off/On)	
	Level On Soft	08	04	00	08	04	01	00 - 0F (1 - 16)	
	Level On Normal	08	05	00	08	05	01	00 - 0F (1 - 16)	
	Decay Fast	08	06	00	08	06	01	00 - 09 (1 - 9, Cont)	
	Decay Slow	08	07	00	08	07	01	00 - 09 (1 - 9, Cont)	
	Touch	08	08	00	08	08	01	00, 01 (Off/On)	
	Velocity	08	09	00	08	09	01	00, 01 (Off/On)	
	Key Track	08	0A	00	08	0A	01	00, 01 (Off/On)	
	Drawbar 1' Cancel	08	0B	00	08	0B	01	00, 01 (Off/On)	
	Drawbar Level	08	0C	00	08	0C	01	00, 01 (0, -3dB)	
Lower & Upper Organ section	Organ Type	20	00	00	20	00	01	00 - 05 00: B-Type 1 01: B-Type 2 02: Mellow 03: Vx 04: Farf 05: Pipe	DRAWB
	Key Click Attack	20	01	00	20	01	01	00 - 0F (0 - 15)	
	Key Click Release	20	02	00	20	02	01	00 - 0F (0 - 15)	
	Fold Back Lo	20	03	00	20	03	01	00 - 0C (C1 - C2)	
	Fold Back Hi	20	04	00	20	04	01	2B - 30 (G4 - C5)	
	Key Click LPF	20	05	00	20	05	01	00 - 7F (0 - 127)	
	Custom TW B-Type 1	20	06	00	20	06	01	00 - 04 (1 - 5)	
	Custom TW B-Type 2	20	07	00	20	07	01	00 - 04 (1 - 5)	
	Custom TW Mellow	20	08	00	20	08	01	00 - 04 (1 - 5)	
	Octave Shift Upper	20	09	00	20	09	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo Upper	20	0A	00	20	0A	01	00 - 7F (MIDI note number)	
	Key Range Hi Upper	20	0B	00	20	0B	01	00 - 7F (MIDI note number)	
	Octave Shift Lower	20	0C	00	20	0C	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo Lower	20	0D	00	20	0D	01	24 - 60 (MIDI note number)	
	Key Range Hi Lower	20	0E	00	20	0E	01	24 - 60 (MIDI note number)	
	Switch Upper	20	0F	00	20	0F	01	00, 01 (Off/On)	
	Switch Lower	20	10	00	20	10	01	00, 01 (Off/On)	
Volume	20	11	00	20	11	01	00 - 7F (0 - 127)		
Upper Registration	16'	--	--	01	01	00	01	00 - 08 (0 - 8)	UPPER
	5 1/3'	--	--	01	01	01	01	00 - 08 (0 - 8)	
	8'	--	--	01	01	02	01	00 - 08 (0 - 8)	
	4'	--	--	01	01	03	01	00 - 08 (0 - 8)	
	2 2/3'	--	--	01	01	04	01	00 - 08 (0 - 8)	
	2'	--	--	01	01	05	01	00 - 08 (0 - 8)	
	1 3/5'	--	--	01	01	06	01	00 - 08 (0 - 8)	
	1 1/3'	--	--	01	01	07	01	00 - 08 (0 - 8)	
Lower Registration	16'	--	--	01	02	00	01	00 - 08 (0 - 8)	LOWER
	5 1/3'	--	--	01	02	01	01	00 - 08 (0 - 8)	
	8'	--	--	01	02	02	01	00 - 08 (0 - 8)	
	4'	--	--	01	02	03	01	00 - 08 (0 - 8)	
	2 2/3'	--	--	01	02	04	01	00 - 08 (0 - 8)	
	2'	--	--	01	02	05	01	00 - 08 (0 - 8)	
	1 3/5'	--	--	01	02	06	01	00 - 08 (0 - 8)	
	1 1/3'	--	--	01	02	07	01	00 - 08 (0 - 8)	
1'	--	--	01	02	08	01	00 - 08 (0 - 8)		

## ◆ Patch Parameter List (cont)

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Patch Load
		LSB (62)	MSB (63)	MSB to LSB					
Pedal	Tone Wheel Set	22	00	00	22	00	01	00 - 06 00: Normal 01: Muted 02: Synth 1 03: Synth 2 04: Finger 05: Pick 06: Slap	DRAW/B
	Attack	22	01	00	22	01	01	00 - 04 00: Slow Attack 01: No Click 02: Soft Click 03: Normal Click 04: Max Click	
	Sustain On	22	03	00	22	03	01	00, 01 (Off/On)	
	Sustain Length	22	04	00	22	04	01	00 - 04 (1 - 5)	
	Decay Length	22	05	00	22	05	01	00 - 05 (1 - 5, Cont)	
	Velocity	22	06	00	22	06	01	00 - 04 (Off, Normal - Easy)	
	Key Mode	22	07	00	22	07	01	00 - 02 (Lowest, Poly, Last)	
	Octave Shift	22	08	00	22	08	01	3E - 40 - 42 (-2 - 0 - +2)	
	Key Range Lo	22	09	00	22	09	01	24 - 60 (MIDI note number)	
Key Range Hi	22	0A	00	22	0A	01	24 - 60 (MIDI note number)		
Pedal Registration	16'	--	--	01	03	00	01	00 - 08 (0 - 8)	PEDAL
	8'	--	--	01	03	01	01	00 - 08 (0 - 8)	
Organ Effect	Leslie Bypass	09	00	00	09	00	01	00, 01 (Enable / Bypass)	ANI
	Leslie Fast	09	01	00	09	01	01	00, 01 (Slow / Fast)	
	Leslie Stop	09	07	00	09	07	01	00, 01 (Turn / Stop)	
	Leslie Cabinet Number	09	08	00	09	08	01	00 - 07 (1 - 8)	
	Vibrato On Swell	09	02	00	09	02	01	00, 01 (Off/On)	
	Vibrato On Great	09	03	00	09	03	01	00, 01 (Off/On)	
	Vibrato Mode	09	04	00	09	04	01	00 - 05 (V1 - C3)	
	Vibrato Rate	09	05	00	09	05	01	00 - 04 (6.1 - 7.25Hz)	
	Vibrato V1 Depth	09	0D	00	09	0D	01	00 - 0F (1 - 16)	
	Vibrato V2 Depth	09	0E	00	09	0E	01	00 - 0F (1 - 16)	
	Vibrato V3 Depth	09	0F	00	09	0F	01	00 - 0F (1 - 16)	
	Vibrato C1 Depth	09	10	00	09	10	01	00 - 0F (1 - 16)	
	Vibrato C2 Depth	09	11	00	09	11	01	00 - 0F (1 - 16)	
	Vibrato C3 Depth	09	12	00	09	12	01	00 - 0F (1 - 16)	
	Vibrato Tremolo	09	13	00	09	13	01	00 - 0F (0 - 15)	
	Vibrato Cho. Emphasis	09	14	00	09	14	01	00 - 09 (0 - 9)	
	Vibrato On Pedal	09	15	00	09	15	01	00, 01 (Off/On)	
	Vibrato Cho. Mix	09	16	00	09	16	01	00 - 40 - 7F (D64 - EVEN - 63V)	

◆ Patch Parameter List (cont)

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Preset Load	
		LSB (62)	MSB (63)	MSB to LSB						
Effects	Overdrive On	3p	00	00	3p	00	01	00, 01 (Off/On)	EFFECT p=0: DRAWB p=1: EXV	
	Overdrive Type	3p	01	00	3p	01	01	00 - 03 00: Tube 01: Stomp Box 02: Clip 03: E. Pf. Amp		
	Overdrive Drive Level	3p	02	00	3p	02	01	00 - 7F		
	Overdrive Controlled Exp.	3p	03	00	3p	03	01	00-03 00: EX-OD 01: OD-EX 02: OD Only 03: Input		
	Multi Effect On	3p	04	00	3p	04	01	00, 01 (Off/On)		
	Multi Effect Type	3p	05	00	3p	05	01	00-07 00: Tremolo 01: Auto Pan 02: Wah-Wah 03: Ring Mod. 04: Phaser 05: Flanger 06: Chorus 07: Delay		
	Multi Effect Parameter 0	3p	06	00	3p	06	01	00-03		
	Multi Effect Parameter 1	3p	07	00	3p	07	01	00-03		
	Multi Effect Parameter 2	3p	08	00	3p	08	01	00-7F		
	Multi Effect Parameter 3	3p	09	00	3p	09	01	00-7F		
	Multi Effect Parameter 4	3p	0A	00	3p	0A	01	00-7F		
	Multi Effect Parameter 5	3p	0B	00	3p	0B	01	00-7F		
	Multi Effect Parameter 6	3p	0C	00	3p	0C	01	00-7F		
	Multi Effect Parameter 7	3p	0D	00	3p	0D	01	00-7F		
	EQ Bass Gain	3p	0E	00	3p	0E	01	00 - 09 - 12 (-9 - 0 - +9)		
	EQ Bass Frequency	3p	0F	00	3p	0F	01	00 - 0A (20 - 200Hz)		
	EQ Mid Gain	3p	10	00	3p	10	01	00 - 09 - 12 (-9 - 0 - +9)		
	EQ Mid Frequency	3p	11	00	3p	11	01	00 - 0A (250 - 3.1kHz)		
	EQ Treble Gain	3p	12	00	3p	12	01	00 - 09 - 12 (-9 - 0 - +9)		
	EQ Treble Frequency	3p	13	00	3p	13	01	00 - 03 (4.0 - 8.0 kHz)		
	EQ Tone Control	30	14	00	3p	14	01	00 - 09 - 12 (-9 - 0 - +9)		
	OD Output Level	3p	15	00	3p	15	01	00 - 7F (0 - 127)		
	Reverb On	0A	00	00	0A	00	01	00, 01 (Off/On)		REV
	Reverb Type	0A	01	00	0A	01	01	00 - 0A 00: Room 1 01: Room 2 02: Live House 03: Hall 1 04: Hall 2 05: Church 06: Plate 07: Spring 08: Delay 09: Panning Delay 0A: Reverb + Delay		
	Reverb Level	0A	02	00	0A	02	01	00 - 7F (0 - 127)		
	Reverb Time	0A	03	00	0A	03	01	00 - 7F (0 - 127)		
	Reverb Delay Feedback	0A	04	00	0A	04	01	00 - 1F (0 - 96%)		
	Reverb Delay Time	0A	05	00	0A	05	01	00 - 44 (4.7 - 2000ms)		

**Example:** "p" means Section number. Organ=0, Extra Voice=1  
 Set Multi-Effect EXV at Phaser via NRPN .....Bx 63 05 62 31 06 04 26 00 (x = Upper channel)  
 Set Multi-Effect EXV at Phaser via SysEx .....F0 55 dd 10 23 13 00 31 05 04 F7 (dd = Device ID)

◆ Global Parameter List

Category	Parameter	NRPN		SysEx Address			SysEx Length	Data	Default	Description
		LSB (62)	MSB (63)	MSB to LSB						
Tune	Transpose	01	00	00	01	00	01	3A - 40 - 46 (-6 - 0 - +6)	40	0
	Master Tune	01	02	00	01	02	02	032E - 0338 - 0342 (430 - 440 - 450)	0338	440
Expression	Source	02	00	00	02	00	01	00 - 04 00: Pedal (normal) 01: Pedal (reverse) 02: MIDI 03: Both (normal) 04: Both (reverse)	00	Pedal (normal)
	Min. Level	02	08	00	02	08	01	00 - 09 (Off, -40dB - 0dB)	06	-35dB
	Min. Limit LF	02	09	00	02	09	01	00 - 08	05	-20dB
	Min. Limit HF	02	0A	00	02	0A	01	(Off, -40dB - -5dB)	03	-30dB
Foot Switch	FS Device	03	00	00	03	00	01	00 - 01 (Foot Sw., Leslie Sw.)	00	Foot Sw.
	FS Tip Mode	03	01	00	03	01	01	00 - 27 00: Off 01: Leslie Fast (alternate) 02: Leslie Fast (momentarily) 03: Leslie Fast (tri-state) 04: Glide 05: Patch Fwd. 06: Patch Back 07: Favorite Fwd. 08: Favorite Back 09: Spring Shock 0A: Delay Time 0B: Music Start 0C: Manual Bass 0D - 25: Bass 1C - 3C 26: Prochord Close 27: Prochord Open	01	Leslie Fast (alternate)
	FS Ring Mode	03	02	00	03	02	01	same as FS Tip mode	01	Leslie Fast (alternate)
	Damper Org. Upper	03	03	00	03	03	01	00, 01 (Off/On)	01	On
	Damper Org. Lower	03	04	00	03	04	01	00, 01 (Off/On)	01	On
	Damper Org. Pedal	03	05	00	03	05	01	00, 01 (Off/On)	01	On
	Damper Extra Voice 1	03	06	00	03	06	01	00, 01 (Off/On)	01	On
	Damper Extra Voice 2	03	10	00	03	10	01	00, 01 (Off/On)	01	On
Panel Switch	Octave Down Mode	03	07	00	03	07	01	00 - 09 00: Origin 01: Leslie Stop 02: Leslie Fast 03: Vibrato Upper 04: Vibrato Lower 05: Glide 06: Spring Shock 07: Delay Time 08: Prio. Drawbars Upper 09: Prio. Drawbars Lower	00	Origin
	Octave Up Mode	03	08	00	03	08	01	same as above	00	Origin
	Octave Lower Mode	03	09	00	03	09	01	same as above	00	Origin
	Drawbar Registration Upper	60	00	00	60	00	01	00, 01 (Off/On)	01	On
Drawbar Registration Lower	60	01	00	60	01	01	00, 01 (Off/On)	01	On	
Drawbar Registration Pedal	60	02	00	60	02	01	00, 01 (Off/On)	01	On	
Drawbar Parameters (DRAWB)	60	03	00	60	03	01	00, 01 (Off/On)	01	On	
Extra Voice (EXV)	60	04	00	60	04	01	00, 01 (Off/On)	01	On	
Internal Zone (INT)	60	05	00	60	05	01	00, 01 (Off/On)	01	On	
External Zone (EXT)	60	06	00	60	06	01	00, 01 (Off/On)	01	On	
Organ Effect (DRAWB)	60	07	00	60	07	01	00, 01 (Off/On)	01	On	
Extra Voice Effect (EXV)	60	08	00	60	08	01	00, 01 (Off/On)	01	On	
Reverb (REV)	60	09	00	60	09	01	00, 01 (Off/On)	01	On	
Animation (ANI)	60	0A	00	60	0A	01	00, 01 (Off/On)	01	On	
Favorites	Access	04	00	00	04	00	01	00 - 03 00: Associate 01: Overwrite 02: Locked 1-10 03: Direct	00	Associate
Display	Short Cut	--	--	--	--	--	--	0, 1, 2s, No		1
	Time Out	--	--	--	--	--	--	4, 8, 16s, No		No
	Pop Up	--	--	--	--	--	--	No, 0.5, 1, 2s		1
	Part On Mode	--	--	--	--	--	--	Additive, Alternate		Additive, Alternate
Master EQ	Bass Gain	03	0A	00	03	0A	01	00 - 09 - 12 (-9 - 0 - +9dB)	09	0dB
	Mid Gain	03	0B	00	03	0B	01	00 - 09 - 12 (-9 - 0 - +9dB)	09	0dB
	Treble Gain	03	0C	00	03	0C	01	00 - 09 - 12 (-9 - 0 - +9dB)	09	0dB
	Bass Frequency	03	0D	00	03	0D	01	00 - 0A (20 - 200Hz)	07	100Hz
	Mid Frequency	03	0E	00	03	0E	01	00 - 0A (250 - 3.1k Hz)	07	1.2kHz
	Treble Frequency	03	0F	00	03	0F	01	00 - 03 (4.0k - 8.0kHz)	03	8.0kHz

**Example** Set Transpose at 0 via NRPN .....Bx 62 01 63 00 06 40 (x = Upper channel)  
 Set Transpose at 0 via System Exclusive.....F0 55 dd 10 23 13 00 01 00 40 F7 (dd = Device ID)

## ◆ Leslie Parameter List

Category	Parameter	NRPN (SK)		NRPN (21)		SysEx Address			SysEx Length	Data
		LSB (62)	MSB (63)	LSB (62)	MSB (63)	MSB to LSB				
Cabinet	Name	--	--	--	--	03	00	00	0A	(10 Characters)
	Slow Speed Horn	06	00	7F	00	00	06	00	01	
	Slow Speed Bass	06	01	7F	01	00	06	01	01	
	Fast Speed Horn	06	02	7F	02	00	06	02	01	
	Fast Speed Bass	06	03	7F	03	00	06	03	01	
	Rise Time Horn	06	04	7F	04	00	06	04	01	
	Rise Time Bass	06	05	7F	05	00	06	05	01	
	Fall Time Horn	06	06	7F	06	00	06	06	01	
	Fall Time Bass	06	07	7F	07	00	06	07	01	
	Brake Time Horn	06	08	7F	08	00	06	08	01	
	Brake Time Bass	06	09	7F	09	00	06	09	01	
	Level Horn	06	0A	--	--	00	06	0A	01	
	Level Bass	06	0B	--	--	00	06	0B	01	
	Mic. Angle	06	0C	7F	0A	00	06	0C	01	
	Mic. Distance	06	0D	7F	0B	00	06	0D	01	
	Horn Character	06	0E	7F	0D	00	06	0E	01	
	Amplifier	06	0F	--	--	00	06	0F	01	
Speaker	06	10	--	--	00	06	10	01		

NRPN SK/21 is switched automatically by Leslie speaker is disconnected/connected.

## ◆ System Parameter List

Category	Parameter	Data Range	Default Value
MIDI	MIDI IN	Lower, Pedal, Low+Ped, Sequence, Upper, Upp+Ped	Pedal
	Local Control	Off/On	On
	TRx. NRPN	Off/On	On
	Tx. Leslie Param.	SK/21	SK
	Rx. Dump	Off/On	On
	TRx. Prog. Change	Off/On	On
	TRx. Drawbar Regi.	Off/On	On
	Tx. Ext. Zone	Off/On	Off
	TRx. Channel Upper	1 - 16, Off	1
	TRx. Channel Lower	1 - 16, Off	2
TRx. Channel Pedal	1 - 16, Off	3	
	Device ID	1 - 32	1
Music Player	Chain	All, One, Shuffle	All
Keyboard	Velocity Offset	-32 - +32	0
Transpose	Sounding Point	Deep / Auto	Deep
	Act Organ	Every / Next	Next
Section	Act Extra Voice	Every / Next	Next
	Part On Mode	Additive / Alternate	Additive
Audio	Output	Stereo / Mono	Stereo
Power	Auto Off	Disable / 30min	30min
Ext. Leslie	Channel(s)	1, 3	3

## ◆ Tone Wheel Parameter List

Category	Parameter	Data Range
Tone Wheel	Name	(10 characters)
	Level	-20 - +2 [dB]
	HPF Cut Off Freq.	0 - 127
	LPF Cut Off Freq.	0 - 127
	LPF Resonance	-100 - +100

## ◆ Pipe Parameter List

Category	Parameter	Data Range
Pipe	Volume	0 - 127
	Detune	-50 - +50
	Chiff	Off, Soft, Mid, Loud
	Cut Off Freq.	-64 - +0
	Pan - Direction	L64 - C - R63
	Pan - Imaging	Fixed, L-R, R-L, Pyramid, Inverted Pyramid

## ◆ Drawbar Data List 1

**Control Number**

Upper: 50H(80)

Lower: 51H(81)

Pedal: 52H(82)

Level	Upper / Lower									Pedal	
	16'	5 1/3'	8'	4'	2 2/3'	2'	1 3/5'	1 1/3'	1'	16'	8'
0	00H(0)	09H(9)	12H(18)	1BH(27)	24H(36)	2DH(45)	36H(54)	3FH(63)	48H(72)	00H(0)	09H(9)
1	01H(1)	0AH(10)	13H(19)	1CH(28)	25H(37)	2EH(46)	37H(55)	40H(64)	49H(73)	01H(1)	0AH(10)
2	02H(2)	0BH(11)	14H(20)	1DH(29)	26H(38)	2FH(47)	38H(56)	41H(65)	4AH(74)	02H(2)	0BH(11)
3	03H(3)	0CH(12)	15H(21)	1EH(30)	27H(39)	30H(48)	39H(57)	42H(66)	4BH(75)	03H(3)	0CH(12)
4	04H(4)	0DH(13)	16H(22)	1FH(31)	28H(40)	31H(49)	3AH(58)	43H(67)	4CH(76)	04H(4)	0DH(13)
5	05H(5)	0EH(14)	17H(23)	20H(32)	29H(41)	32H(50)	3BH(59)	44H(68)	4DH(77)	05H(5)	0EH(14)
6	06H(6)	0FH(15)	18H(24)	21H(33)	2AH(42)	33H(51)	3CH(60)	45H(69)	4EH(78)	06H(6)	0FH(15)
7	07H(7)	10H(16)	19H(25)	22H(34)	2BH(43)	34H(52)	3DH(61)	46H(70)	4FH(79)	07H(7)	10H(16)
8	08H(8)	11H(17)	1AH(26)	23H(35)	2CH(44)	35H(53)	3EH(62)	47H(71)	50H(80)	08H(8)	11H(17)

ex: Set Lower 8' to level 7 via MIDI... Bx 51 19 (x=Lower Channel)

## ◆ Drawbar Data List 2

Part	Control Number								
	16'	5 1/3'	8'	4'	2 2/3'	2'	1 3/5'	1 1/3'	1'
Upper	0CH(12)	0DH(13)	0EH(14)	0FH(15)	10H(16)	11H(17)	12H(18)	13H(19)	14H(20)
Lower	15H(21)	16H(22)	17H(23)	18H(24)	19H(25)	1AH(26)	1BH(27)	1CH(28)	1DH(29)
Pedal	21H(33)	-	23H(35)	-	-	-	-	-	-

  

Value	Level								
	0	1	2	3	4	5	6	7	8
	00 - 0FH (0 - 15)	10 - 1FH (16 - 31)	20 - 2FH (32 - 47)	30 - 3FH (48 - 63)	40 - 4FH (64 - 79)	50 - 5FH (80 - 95)	60 - 6FH (96 - 111)	70 - 7EH (112-126)	7FH (127)

ex: Set Lower 8' to level 7 via MIDI... Bx 17 70 (x=Upper Channel)

◆ **Custom Tone Wheels List**

◆ **BType1, BType2**

**Real B-3**

B-3/C-3 in good condition. Contains moderate motor hum and leakage noise.

**80's Clean**

80's "clean-sounding" B-3/C-3. Motor hum or leakage noise is removed, "vibration" caused by the wow/flutter of the motor remained.

**Noisy**

Replicates the entire sound output from the B-3/C-3, including the motor hum and leakage noise.

**Noisy 60**

Leakage noise very prominent.

◆ **Mellow**

**Full Flats**

Pure sine waves, and all Tone Wheels oscillate at the same volume.

**Husky**

Slight mid-range boost and reduced volume.

**Flute Lead**

Similar to "Husky", but with reduced bass and treble.

**Cheap Tr.s**

Reduced bass-range - sound is similar to AM radio.

## ◆ MIDI Implementation Chart

Stage Keyboard  
Model: SKX

## MIDI Implementation Chart

Date: 2-Jun-2017  
Version: 1.0

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	*1 1 - 16	*1 1 - 16	*1: Upper = 1, Lower = 2, Pedal = 3
Mode	Default Messages Altered	3 X *****	3 X X	
Note Number	: True Voice	12 - 120 *2 *****	36 - 96 *3 36 - 96	*2: with oct. shift *3: Organ section
Velocity	Note ON Note OFF	O X	O X	
After Touch	Key's Ch's	X X	X X	
Pitch Bend		X	X	
Control Change	0, 32	O	O	Bank Select MSB, LSB
	1	X	X	Modulation
	6, 38	O	O	Data Entry MSB, LSB
	7	O	X	Volume
	10	O	X	Pan
	11	O	O	Expression
	12 - 20, 80	O	O	Drawbar Reg. Upper
	21 - 29, 81	O	O	Drawbar Reg. Lower
	33, 35, 82	O	O	Drawbar Reg. Pedal
	48	O	O	Spring Shock
	49	O	O	Glide
	64	O	O	Damper
	84	O	O	ProChord Active
	85, 86	O	O	Drawbar Priority
92	X	O	Leslie Fast	
98, 99	O	O	NRPN MSB, LSB	
Program Change	: True #	O 0 - 127	O 0 - 99, 127	
System Exclusive		O	O	
System Common	: Song Position : Song Select : Tune	X X X	X X X	
System Real Time	: Clock : Commands	X X	X X	
Aux Messages	: All Sounds Off	X	O	(120)
	: Reset All Controllers	O	O	(121)
	: Local On/Off	X	X	
	: All Notes Off	O	O	
	: Active Sense : Reset	O X	O X	

Mode 1: OMNI ON, POLY    Mode 2: OMNI ON, MONO  
Mode 3: OMNI OFF, POLY    Mode 4: OMNI OFF, MONOO: Yes  
X: No

## ◆ MIDI Implementation

### Channel Voice Message

#### Note Off

Status	2nd Byte	3rd Byte
8nH	kkH	vvH, or
9nH	kkH	00H
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
kk=Note Number:	00H - 7FH (0 - 127)	
vv=Velocity(disregard):	00H - 7FH (0 - 127)	

#### Note On

Status	2nd Byte	3rd Byte
9nH	kkH	vvH
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
kk=Note Number:	00H - 7FH (0 - 127)	
vv=Velocity:	00H - 7FH (0 - 127)	

### Control Change

#### Bank Select (CC#0, 32)

Status	2nd Byte	3rd Byte
BnH	00H	mmH
BnH	20H	llH
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
mm,ll=Bank Number:	00H 00H = User 01H 00H = Preset 64H 00H - 6DH 00H= Bank [1] to [10]	

*Until you send the Program Change, the Bank Select process is reserved.*

#### Expression (CC#11)

Status	2nd Byte	3rd Byte
BnH	0BH	vvH
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
vv=Expression:	00H - 7FH (0 - 127)	

#### Spring Shock (CC#48)

Status	2nd Byte	3rd Byte
BnH	30H	vvH
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
vv=Velocity:	00H - 7FH (0 - 127)	

#### Glide (CC#49)

Status	2nd Byte	3rd Byte
BnH	31H	vvH
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
vv=Control Value:	00H - 7FH (0 - 127) 0 - 63=Off, 64 - 127=On	

#### Damper (CC#64)

Status	2nd Byte	3rd Byte
BnH	40H	vvH
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
vv=Control Value:	00H - 7FH (0 - 127) 0 - 63=Off, 64 - 127=On	

#### ProChord Active (CC#84)

Status	2nd Byte	3rd Byte
BnH	54H	vvH
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
vv=Control Value:	00H - 7FH (0 - 127) 0 - 63=Off, 64 - 127=On	

*Activates "Harmony" parts for Organ section during this parameter is "On".*

#### Drawbar Priority (CC#85, 86)

Status	2nd Byte	3rd Byte
BnH	5kH	vvH
k=Drawbar Group:	5 = Upper, 6=Lower	
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
vv=Control Value:	00H - 7FH (0 - 127) 0 - 63=Off, 64 - 127=On	

#### Leslie Fast (CC#92)

Status	2nd Byte	3rd Byte
BnH	5CH	vvH
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
vv=Control Value:	00H - 7FH (0 - 127) 0 - 63=Off, 64 - 127=On	

*This control change is only for receive.*

#### NRPN MSB/LSB (CC#98, 99)

Status	2nd Byte	3rd Byte
BnH	63H	mmH
BnH	62H	llH
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
mm=upper byte of the parameter number specified by NRPN		
ll=lower byte of the parameter number specified by NRPN		

#### Data Entry (CC#6, 38)

Status	2nd Byte	3rd Byte
BnH	06H	mmH
BnH	26H	llH
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	
mm,ll=the value of the parameter specified by NRPN		

#### Program Change

Status	2nd Byte
CnH	ppH
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)
pp=Program Number:	00H - 63H = Patch #0 to 99 64H - 6DH = Favo. Number [1] to [10] 7FH = [Manual]

### Example of operation

#### ex: select Patch P016

Bx 00 01 Bx 20 00 Cx 0F (x=Upper Channel)

#### ex: select Favorite Bank[2], Number[6]

Bx 00 65 Bx 20 00 Cx 69 (x=Upper Channel)

#### ex: select Manual

Cx 7F (x=Upper Channel)

## Channel Mode Message

#### All Sounds Off (CC#120)

Status	2nd Byte	3rd Byte
BnH	78H	00H
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	

*When this message is received, all currently-sounding notes on the corresponding channel will be turned off immediately.*

#### Reset All Controllers (CC#121)

Status	2nd Byte	3rd Byte
BnH	79H	00H
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	

*When this message is received, the following controllers will be set to their reset values.*

Expression:	127
Glide:	0
Damper:	0

NRPN: unset; previously set data will not change

#### All Notes Off (CC#123)

Status	2nd Byte	3rd Byte
BnH	7BH	00H
n=MIDI Channel Number:	0H - FH (Ch. 1 - 16)	

*When All Notes Off is received, all notes on the corresponding channel will be turned off. However if Hold 1 or Sostenuuto is ON, the sound will be continued*

## ◆ MIDI Templates

Template		Basic	Pedal KBD	Use Ex. Zone
Messages	MIDI IN	Sequence	Pedal	Sequence
	Local Control	On	On	On
	NRPN	On	On	On
	Program Change	On	On	On
	Drawbar Registration	On	On	On
Transmit Channel	Tx. Upper	1	1	Off
	Tx. Lower	2	2	Off
	Tx. Pedal	3	3	Off
	Rx. Upper	1	1 (disregarded, off)	Off
	Rx. Lower	2	2 (disregarded, off)	Off
	Rx. Pedal	3	3 (disregarded, omni)	Off
	External Zone	Off	Off	On
Comments		Use this template to record/playback the performance of only SKX to the external sequencer.	Use this template to play on the Pedal keyboard connecting to the MIDI IN jack.	Use this template to play only on the SKX and control the MIDI equipment connected to the MIDI OUT jack with the External Zone.

Template		Use Ex. w/PK
Messages	MIDI IN	Pedal
	Local Control	On
	NRPN	On
	Program Change	On
	Drawbar Registration	On
Transmit Channel	Tx. Upper	Off
	Tx. Lower	Off
	Tx. Pedal	Off
	Rx. Upper	1 (disregarded, off)
	Rx. Lower	2 (disregarded, off)
	Rx. Pedal	3 (disregarded, omni)
	External Zone	On
Comments		Use this template to play on the SKX and the Pedalboard connected to the MIDI IN jack and control the MIDI equipment connected to the MIDI OUT jack with the External Zone.

## ◆ MIDI Channels and Messages

	External Zone (Tx. only)	Upper Part	Lower Part	Pedal Part
Note	O	O	O	O
Pitch Bend	X	X	X	X
Modulation	X	X	X	X
Volume, Pan (7, 10)	O	X	X	X
Expression (11)	O	O *1	X	X
Hold 1 (64)	O	O	O	O
Drawbar Reg.	X	CC#80, 12 - 20 (Upper) 21 - 29 (Lower) 33, 35 (Pedal)	CC#81	CC#82
Spring Shock (48)	X	O	X	X
Glide (49)	X	O	X	X
ProChord Active (84)	X	O	X	X
Drawbar Priority (85, 86)	X	O	X	X
Leslie Fast (92)	X	O *2	X	X
RPN (100, 101)	X	X	X	X
NRPN (98, 99)	X	O	X	X
All Notes Off (123)	O	O	O	O
All Sounds Off (120)	X	O *2	O *2	O *2
Reset All Ctrl. (121)	O	O	O	O
After Touch	X	X	X	X
Bank Select (0, 32)	Change the voice for each zone.	Patch	X	X
Program Change			X	X

\*1: Affects all parts (audio controlled)

\*2: Affects Rx. only.

## ◆ System Exclusive Messages

### ◆ Memory Dump

1. Each Packet

F0	System Exclusive
55	SUZUKI ID
dd	Device ID (refer to P. 112)
10	Model ID MSB
23	Model ID LSB
11	Command: Data Packet
[TYPE]	Data Type 02H = All Data Dump 07H = Combi. Temp. Dump 09H = Global Dump 0AH = System Dump
[PNH]	Packet Number MSB
[PNL]	Packet Number LSB
[DATA]	128 Bytes Data 256 Bytes nibblized ASCII ex: 7EH = 37H, 45H
[CHD]	Check Digit Lower 7 bits of XOR [DATA]
F7	End Of Exclusive

2. Acknowledge

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
23	Model ID LSB
14	Command: Acknowledge
[TYPE]	Data Type
[AK]	Result 00H = OK 05H = Check Digit Error 06H = Receive Protected
[PNH]	Packet Number MSB
[PNL]	Packet Number LSB
F7	End Of Exclusive

3. # of Packets

All Data Dump:	505
Combi. Temp Dump:	27
Global Dump:	10
System Dump:	1

### ◆ Dump Request (Rx. only)

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
23	Model ID LSB
12	Command: Dump Request
[TYPE]	Data Type 02H = All Data Dump 07H = Combi. Temp. Dump 09H = Global Dump 0AH = System Dump
F7	End Of Exclusive

### Mode Setting Exclusive Message

Full Parameters Reset (Rx. only)

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
42	Mode ID for DT1
12	Command: DT1
40	Address MSB
00	Address
7F	Address LSB
7F	Reset
42	Check Sum
F7	End Of Exclusive

### NRPN Switch

F0	Suzuki Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
23	Model ID LSB
02	Command: NRPN Sw.
[DATA]	00H = Off, 7FH = On
F7	End Of Exclusive

When this device receives this message, switch Tx & Rx NRPN in Control channel.

### Data Set (Rx. only)

F0	System Exclusive
55	SUZUKI ID
dd	Device ID
10	Model ID MSB
23	Model ID LSB
13	Command: Data Set
aa	Address MSB
bb	Address
cc	Address LSB
[DATA]	Data (Flexible bytes)
F7	End Of Exclusive

### Identity Request (Rx. only)

F0	System Exclusive
7E	Universal non real-time
dd	Device ID
06	Sub ID #1
01	Sub ID #2
F7	End Of Exclusive

### Identity Reply (Tx. only)

F0	System Exclusive
7E	Universal non real-time
dd	Device ID
06	Sub ID #1
02	Sub ID #2
55	SUZUKI ID
00 10	Device Family code
00 23	Device Family number
00 00	
00 00	
F7	End Of Exclusive

When Identity Request is received, Identity Reply will be transmitted.

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## **INSTRUMENT CARE**

### **◆ AC Power**

Be sure to turn the instrument “OFF” after use, and do not turn the unit “ON” and “OFF” in quick succession, as this places an undue load on the electronic components.

### **◆ Cabinet**

Use a soft dry cloth for dusting. To remove fingerprints or dulling film, use a soft cloth slightly moisten with water and a little mild soap. Immediately wipe dry with a soft dry cloth.

### **◆ Keys And Buttons**

To clean keys and buttons, use a clean soft cloth moistened with water. Do not use any solvents, thinners or dryers such as alcohol, gasoline, lighter fluid, carbon tetrachloride, etc. These solutions may affect the letters and/or finish on the buttons and keys.

### **◆ Moving Your Instrument**

It is not necessary to bolt or fasten any parts of the instrument when moving. Careful consultation with your mover will assure you of a satisfactory moving job.

Hammond maintains a policy of continuously improving and upgrading its instruments and therefore reserves the right to change specifications without notice. Although every attempt has been made to insure the accuracy of the descriptive contents of this Guide, total accuracy cannot be guaranteed. Should the player require further assistance, inquiries should first be made to your Authorized Hammond Dealer. If you still need further assistance, contact Hammond at the following addresses:

In the United States contact:

HAMMOND SUZUKI USA, Inc.  
743 Annoreno Dr.  
Addison, IL 60101  
UNITED STATES

In Europe and the U.K. contact:

HAMMOND SUZUKI EUROPE B.V.  
I. D.S. Tuynmanweg 4A  
4131 PN Vianen  
THE NETHERLANDS

All other countries contact:

HAMMOND SUZUKI Ltd.  
25-12, Ryoke 2 Chome  
Hamamatsu 430-0852 (Shizuoka)  
JAPAN

Technical materials are available and can be obtained by mailing a request to the appropriate address listed above marked ATTENTION: SERVICE DEPARTMENT.

Manufacturer:  
SUZUKI MUSICAL INSTRUMENT MFG. CO., Ltd  
25-12, Ryoke 2 Chome  
Hamamatsu 430-0852 (Shizuoka)  
JAPAN

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