Specifications

[System]

System: Kronos System Version 2.0

Keyboard:

88-key: RH3 (Real Weighted Hammer Action 3)

73-key: RH3 (Real Weighted Hammer Action 3)

61-key: Natural Touch Semi Weighted

[Tone Generator]

Synthesis Types: 9

SGX-1 Premium Piano (Acoustic Piano)

EP-1 MDS Electric Piano (Electric Piano)

HD-1 High Definition Synthesizer (PCM Virtual Memory Technology)

AL-1 Analog Synthesizer (Analog Modeling)

CX-3 Tonewheel Organ (Tonewheel Organ Modeling)

STR-1 Plucked String (Physical Modeling)

MOD-7 Waveshaping VPM Synthesizer (VPM Synthesis)

MS-20EX (CMT Analog Modeling)

PolysixEX (CMT Analog Modeling)

Maximum Polyphony*1*2:

SGX-1: 100 voices*3

EP-1: 104 voices

HD-1: 140 voices

AL-1: 80 voices

CX-3: 200 voices

STR-1: 40 voices

MOD-7: 52 voices

MS-20EX: 40 voices

PolysixEX: 180 voices

*A portion of the multicore processor in KRONOS is devoted to generating voices, and a separate portion is devoted to generating effects. KRONOS dynamically allocates the voice processing power between the engines as necessary. The quoted maximum numbers of voices apply when 100% of the voice processing power is devoted to a single engine.

*2 In rare cases, when a large number of processor-intensive effects are active simultaneously (for instance, more than 14 O-Verbs), polyphony may be slightly reduced.

*3 100 dual-stereo notes (It corresponds to 400 voices in the maximum.)

Number of Programs/Combinations/Drumkits:

2,560 user memory programs

(1,536 [768 HD-1+768 EXi] come preloaded)

1,792 user memory combinations

(480 come preloaded)

264 user memory drumkits

(78 come preloaded)

256 GM Level2 preset programs+ 9 GM Level2 drum preset programs

Preset PCM:

314 MB (ROM 1,505 multisamples, 1388 drum samples)

Build-in Expansion PCM Libraries:

EXs1 - ROM Expansion

EXs2 - Concert Grand Piano

EXs3 - Brass & Woodwinds

EXs4 - Vintage Keyboards

EXs5 - ROM Expansion 2

EXs6 - SGX-1 German D Piano

EXs7 - SGX-1 Japanese C Piano

EXs8 - Rock Ambience Drums

EXs9 – Jazz Ambience Drums

Capacity of PCM RAM:

Approx. 2 GB*4

*4 The memory available for RAM samples will change based on the use of Expansion PCM libraries. About 1,129 MB is available when shipped from the factory (when loading the file named "PRELOAD.KSC").

Wave Sequences:

598 user memory, 165

[SGX-1 Program]

Premium Piano:

PCM:

EXs6 - SGX-1 German D Piano

EXs7 - SGX-1 Japanese C Piano

EXs12 - SGX-1 Austrian Piano (Option Sound Libraries, DEMO Version is pre-installed)

Piano Type:

32

Oscillator Control:

Damper Resonance, Damper Noise, Mechanical Noise, Note Release

[EP-1 Program]

MDS Electric Piano:

Tine and reed-type electric pianos powered by Multi-Dimensional Synthesis (MDS), and vintage effects.

Electric Piano Model Types: 6

Tine EP I, Tine EP II, Tone EP V, Tine EP DMP, Reed EP200, Reed EP200A

Oscillator Control:

Harmonic Sound Level, Attack Noise, Level, Release Noise Level, Attack Brightness, Hammer Width

Panel Control:

Tine Type: Preamp Volume, Tone (Treble, Bass), Vibrate (On/Off, Intensity, Speed), Amp/Cabinet (On/Off, Drive)*5

Reed Type: Preamp Volume, Tone (Treble, Bass), Vibrate (Intensity, Speed), Amp/Cabinet (On/Off, Drive)*5

*5 Each electric piano type has own amp/cabinet character.

Effect Types: 9

Small Phase, Orange Phase, Clack Phase, Vintage Chorus, Black Chorus, EP Chorus, Vintage

Flanger, Red Comp, VOX Wah

[HD-1 Program]

Advanced Vector Synthesis:

Control oscillator volumes and synthesis & effects parameters via the Vector Joystick and the tempo-synchronized Vector Envelope.

Structure:

Single: only OSC1, Double: OSC1 and OSC2.

Double mode lets you layer two completely separate synth voices, each with their own velocity-switched oscillator, dual filter, EGs, LFOs, etc.

Two completely separate drumkits.

Oscillators:

8 velocity zones per oscillator, with switching, crossfades and layering

Each zone can play mono or stereo Multisamples or Wave Sequences

Filters:

Two multi-mode filters per voices (low-pass, high-pass, band-pass and band-reject),

Four-mode filter routings (single, serial, parallel and 24dB mode)

Driver:

Per voice non-linear driver and low boost circuit

EQ:

Three bands, with sweepable mid

Modulation:

Three envelope generators, two LFOs per voice, common LFO, four key tracking generators, AMS (Alternate Modulation Source), two AMS mixers

[EXi Program Common]

Advanced Vector Synthesis:

Control oscillator volumes and synthesis & effects parameters via the Vector Joystick and the tempo-synchronized Vector Envelope.

Modulation:

Common Step Sequencer, AMS (Alternate Modulation Source), Common LFO,

2 Key Tracking Generators

EQ:

Three bands, with sweep-able mid

[AL-1 Program]

Oscillators:

Ultra-low-aliasing oscillators

OSC1, OSC2, Sub-oscillator and noise generator; ring modulation, FM and Sync

Audio Input:

Run real-time audio through the synthesis engine

Filters:

Two multi-mode filter (low-pass, high-pass, band-pass and band-reject) with four types of filter routings (single, serial, parallel and 24dB mode), MultiFilter mode (only Filter-A; modulatable mix of Low Pass, High Pass, Band Pass, and dry input, for creating a wide variety of unique filter types and effects)

Driver:

Per-voice non-linear driver and low boost circuit

Modulation:

Five Envelope generators, four per-voice LFOs, two AMS Mixers;

Per-voice Step Sequencer.

[CX-3 Program]

Tonewheel Organ Modeling:

Phase-synchronous tonewheels (clean and vintage modes), percussion, key click, wheel brake

EX Mode:

Four additional, user-specified drawbars, and expanded percussion.

Internal Effects:

Rotary speaker, vibrato/chorus, amp modeling with overdrive, 3-band EQ

Drawbar Control:

Controlled via nine front-panel sliders (via Tone Adjust)

Split:

Upper, Lower (even in EX mode)

Modulation:

Two AMS mixers

[STR-1 Program]

Physically Modeled String:

Includes physically modeled damping, decay, dispersion, nonlinearity, harmonics, dual pickups, and more

String Excitation:

Three independent excitation sources can be used simultaneously: Pluck, Noise, and PCM. 16 preset "pluck" types, with modulatable width and randomization. Noise generator with saturation and dedicated lowpass filter

PCM Oscillator:

Korg's ultra-low-aliasing technology, as introduced in the HD-1; 4 velocity zones per oscillator; Uses any mono ROM, EXs, or RAM multisamples; PCM can either be used as an excitation signal, or layered with the output of the string.

Excitation Filter:

Dedicated 2-pole multimode filter for shaping the string excitation; Filter can be enabled/disabled separately for each excitation source. Low Pass, High Pass, Band Pass, and Band Reject modes

Audio Input and Feedback:

Run real-time audio through the string, including feedback through effects. Modeled feedback includes modulate-able instrument-to-amp distance and orientation.

Filters:

Dual multi-mode filters per voice; Single, Serial, Parallel (with split stereo output), and 24dB (4-pole) configurations. Low Pass, High Pass, and Band Reject modes

Multi Filter mode (Filter A only):

Modulatable mix of Low Pass, High Pass, Band Pass, and dry input, for creating a wide variety of unique filter types and effects

Modulation:

5 Envelopes, 4 per-voice LFOs, 2 Key Track generators, String Tracking generators, 4 AMS Mixers.

[MOD-7 Program]

Waveshaping VPM Synthesizer:

Combines Variable Phase Modulation (VPM), waveshaping ring modulation, PCM sample playback, and subtractive synthesis; Able to convert-load SYX files.

Oscillators:

6 VPM/Waveshaper/Ring Modulation Oscillators:

Phase and modulatable pitch per oscillator; 101 Waveshaper tables plus modulatable Drive and Offset; Use as oscillators, or as Waveshapers or Ring Modulators for other signals.

PCM Oscillator:

Korg's ultra-low-aliasing technology, as introduced in the HD-1. 4 velocity zones per oscillator; Uses any mono ROM, EXs, or RAM multisamples; PCM can be used as an FM modulator and/or layered with the VPM Oscillators. Noise generator with saturation and dedicated low pass filter.

Audio input:

Run real-time audio through the VPM Oscillators and filters.

Filters:

Dual multi-mode filters per voice. Parallel and 24 dB (4-Pole) configurations; Low Pass, High Pass, Band Pass, and Band Reject modes

Multi Filter mode (Filter A only):

Modulatable mix of Low Pass, High Pass, Band Pass, and dry input, for creating a wide variety of unique filter types and effects

Patch Panel:

Supports both algorithm (78 types) selection and free patching; Three 2-in, 1-out mixers for scaling and merging audio, fully modulatable, with phase inversion. Main 6-input stereo mixer, with modulatable pan and volume, plus phase inversion

Modulation:

10 Envelopes, 4 per-voice LFOs, 9 Key Tracking generators, Per-voice Step Sequencer, 4 standard AMS Mixers plus 4 simple AMS Mixers.

[MS-20EX Program]

Oscillators:

Ultra-low-aliasing oscillators; VCO1, VCO2, Ring Mod, Pink and White Noise Generator

Audio Input:

Run real-time audio through the synthesis engine and ESP (External Signal Processor)

Filters:

12dB/octave High Pass and Low Pass self-resonant filters

ESP section:

24dB/octave Low Cut and High Cut filters, available per voice.

Patch Panel:

Patchable audio and modulation, at audio rates

Patch Points:

Keyboard:

Keyboard CV Out, Keyboard Trigger Out, VCO1+VCO2 CV In, VCO2 CV In

VCO:

VCO1+VCO2 External Frequency Control In, VCO1 Out, VCO2 Out

VCF:

External Signal In, External HP Filter Cutoff Frequency Control In, External LP Filter Cutoff Frequency Control In, HPF Out, LPF In, LPF Out

VCO+VCF:

Total External Modulation In

VCA:

External Initial Gain Control In, VCA In

EG:

EG1 Envelope Signal Normal Out, EG1 Envelope Signal Reverse Out, EG1+EG2 Trigger In, EG1 Trigger In, EG2 Envelope Signal Reverse Out

MG:

Triangle Out, Rectangle Out

Noise Generator:

Pink Noise Out, White Noise Out

Sample and Hold:

Clock Trigger In, Sample Signal In, S/H Out

Modulation VCA:

Control Voltage In, Signal In, Signal Out

Manual Controller:

Control Wheel Out, Momentary Switch

ESP:

Signal In, AMP Out, BPF In, BPF Out, F-V CV Out, Envelope Out, Trigger Out

Others:

EXi Audio In, Mixer 1 In, Mixer 1 Out, Mixer 2 In, Mixer 2 Out

ESP (External Signal Processor):

Use incoming audio as a trigger and/or CV source.

Modulation:

Original DAR and HADSR EGs 1 & 2, original MG (with MIDI sync), Sample-and- Hold, MVCA; 4 additional multi-stage Envelopes, 4 additional per-voice LFOs, and 4 AMS Mixers

[PolysixEX Program]

Oscillators:

VCO:

Saw, Pulse, PWM

Sub Oscillator:

Off, 1 octave below, 2 octaves below

Filter:

24dB/octave Low Pass self-resonant filter

Effects:

Integrated Polysix Chorus, Phase, and Ensemble

Arpeggiator:

Integrated MIDI-synced arpeggiator, with adjustable Range, Mode, and Latch

Modulation:

Original ADSR EG and MG (with MIDI sync), 2 additional multi-stage Envelopes, 2 additional per-voice LFOs, and 4 AMS Mixers

[Combination]

Number of Timbres:

16 Maximum

Master Keyboard Functionality:

Keyboard and velocity splits, layers, and crossfades of up to 16 Programs and/or external MIDI devices

Advanced Vector Synthesis:

Control oscillator volumes and synthesis & effects parameters via the Vector Joystick and the tempo-synchronized Vector Envelope.

[Drumkit]

System:

Assignable stereo/mono samples with 8 velocity zones per oscillator (with crossfade functions)

[Sampling]

System:

Open Sampling System (resampling, In-Track sampling)

Bit Depth/Sampling Frequency:

RAM: 16-bit/48 kHz stereo/mono sampling

DISK: 16 or 24-bit/48 kHz stereo/mono sampling

Sampling Time:

RAM: Depends on the amount of availale PCM RAM

DISK: Maximum 80 minutes stereo (879 MB: 16-Bit)

Sample Locations:

16,000 samples/4,000 multisamples (128 indexes per multisample)

Ripping:

Direct sampling (ripping) from audio CD (CD-DA)

Formats:

Korg format, AKAI S1000/S3000 data (with advanced Program parameter conversion); SoundFont 2.0, AIFF, and WAVE formats

Editing:

Time Stretch, Time Slice, Crossfade Loop, and other standard editing features.

[Effects]

Insert Effects: 12

Stereo in / stereo out

Master Effects: 2

Stereo in / stereo out

Total Effects: 2

Stereo in / stereo out

Timbre EQ:

High, low, and mid band

Effect Types: 185

Modulation:

Dynamic Modulation and Common LFO

Effects Control Busses:

Two stereo side chains

Effect Presets: 783

Maximum 32 per 1 effect (Preset User)

[KARMA]

KARMA Modules:

One module in Program mode, four modules in Combination and Sequencer modes

Generated Effects (GE):

2,048 presets, 1,536 Users (96 come Preload)

Controllers:

On/Off, Latch, Chord, Assign, Module, Control, KARMA Realtime Control Sliders [1] – [8], KARMA Scene [1] – [8], KARMA Switches [1] – [8], KARMA Wave-Sequencing, GE Sub Category, Freeze Randomize, Time Signature Control, Tempo Synchronize, Auto RTC (Real Time Control) setup

[Drum Track]

Drum Track Patterns:

697 preset (common with the preset patterns of the MIDI sequencer)

[Sequencer/HDR]

Tracks:

16-track MIDI sequencer + 16-track hard disk recorder + master track.

Number of Songs:

200 songs

Resolution:

1/480

Tempo:

40.00 – 300.00 (1/100 BPM resolution)

Maximum memory:

400,000 MIDI events

or 300,000 audio events

MIDI Tracks:

16 tracks plus the master track

697 preset/100 user patterns (per song)

18 preset/16 user template songs,

Format:

Korg (Kronos, OASYS) format, SMF formats 0 and 1.

Audio Tracks:

16-track playback, 4-track simultaneous recording, WAV file format 16bit/24bit.

Maximum single-file recording time (mono):

80 minutes

Automation:

Volume, Pan, EQ, and Send1/2; 5,000 regions (max.), Event Anchors, BPM Adjust

RPPR (Realtime Pattern Play and Record):

1 Pattern set per song.

[General]

Disk Mode:

Load, save, utility, audio CD burning, audio CD playback, data filer function (save/load MIDI System Exclusive data), CD-R/RW (UDF format read/write), ISO9660 Level 1. *6

*6 Need to use with External USB CD Drive, etc.

Controllers:

Vector joystick, joystick, ribbon controller, switches 1 & 2

Control Surface:

Control Assign Switches:

Assigns the Control Surface to Timber/Track, Audio, External, Realtime Knobs/KARMA, or Tone Adjust.

Mixer Knobs Switch:

Assigns the Mixer Knobs to either Channel Strip or Individual Pan, Reset Control Switch, Solo Switch, Knobs 1-8, Switches 1-8 (Upper Row), Switches 1-8 (Lower Row), Sliders 1-8, Master Slider

KARMA Control:

On/Off, Latch, Chord Assign, module Control

Display:

TouchView graphical user interface, 8 inch TFT, SVGA (800x600 dots), adjustable brightness

Outputs:

L/MONO, R:

1/4" Balanced; 350 ohms Stereo; 175 ohms Mono (L/MONO Only), Nominal Level: +4.0 dBu, Maximum Level: +16.0 dBu (when load impedance is 600 ohms or greater)

Individual 1-4:

1/4" Balanced; 350 ohms Stereo; 175 ohms Mono, Nominal Level: +4.0 dBu, Maximum Level: +16.0 dBu (when load impedance is 600 ohms or greater)

Headphones:

1/4" stereo phone jack, output impedance: 33 ohms, Maximum Level: 60+60 mW (when load impedance is 33 ohms),

S/P DIF:

Optical, 24-bit, IEC60958, EIAJCP-1201, 48 kHz, (the same signals as L/MONO, R)

USB-B:

24-bit, 48 kHz, 2 channels (the same signals as L/MONO, R)

Inputs:

Audio Inputs 1 and 2:

1/4" Balanced; Input Impedance: 10 kohms, Nominal Level: +4.0 dBu, Maximum Level: +16 dBu,Source Impedance: 600 ohms, S/N: 95 dB (Typical), Dynamic Range: 95 dB (Typical), Crosstalk: 95 dB (at 1 kHz, Typical)

S/P DIF:

Optical, 24-bit, IEC60958, EIAJCP-1201, 48 kHz

USB-B:

24-bit, 48 kHz, 2 channels

Control Inputs:

Damper pedal (half damper supported), assignable switch, assignable pedal

MIDI:

In, Out, Thru

USB:

USB A (TYPE A) x 2 (for connection to external USB devices)

USB B (TYPE B) x 1 (MIDI/audio interface, MIDI: 1(16ch) input / 1(16ch) output, Audio: 2 channel input / 2 channel output)

2 USB high-speed ports (supports 480Mbps)

Principal Specifications:

Frequency Response:

20Hz-22kHz, +/-1.0 dB, 10k Ohms load

THD+N:

20Hz-22kHz, 0.01%, 10k Ohms load (typical)

S/N:

95 dB (typical)

Dynamic Range:

95 dB (typical)

Crosstalk:

95 dB, at 1 kHz (typical)

Disk Drives:

62 GB SSD (2.5")

Power Consumption:

60 W

Dimensions: (W x D x H)

88-key: 57.28" x 16.18" x 5.71"

1,455 x 411 x 145 mm

73-key: 48.94" x 16.18" x 5.71"

1,243 x 411 x 145 mm

61-key: 41.42" x 14.25" x 5.28"

1,052 x 362 x 134 mm

Weight:

88-key: 50.71 lbs. / 23.0 kg

73-key: 44.75 lbs. / 20.3 kg

61-key: 27.56 lbs. / 12.5 kg

Accessories:

AC cord, Quick Start Guide, Accessory DVD Disc 1, 2 (DVDs include Kronos Operation Guide, Parameter Guide, and Voice Name List PDF files; Video Manual; KORG USB-MIDI Driver; System Restore Data, etc.)

[Option]

Kronos Sound Libraries: *EXs Expansion Sample Series

*KRS Professional Sound Series

XVP-10: Expression/Volume Pedal

EXP-2: Foot Controller

DS-1H: Damper Pedal

PS-1: Pedal Switch

PS-3: Pedal Switch

HC-KRONOS 88: Hard Case with caster for Kronos88

HC-KRONOS 73: Hard Case with caster for Kronos73

HC-KRONOS 61: Hard Case with caster for Kronos61

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