

# SYNTHESIZERS & KEYBOARDS WAVESTATION-SERIES, Z3/ZD3 & NEW SG-ID

**The Wavestation series...  
For musicians and programmers on the leading edge.**



AV Synthesis System

## WAVESTATION

● DIMENSIONS: 1000 (W) x 350 (D) x 110 (H) mm ● WEIGHT: 12.5 kg

**AV Synthesis creates a new world of sound: sixty-one keys that put sound at your fingertips!**

Introducing the Advanced Vector Synthesis System, an innovative sound synthesis method that brings new potential to PCM tone generation. This system features the remarkable WaveSequencing technology, which lets you combine the 365 preset waveforms (484 on the EX) to create complex wave sequences.

You can create and save up to 128 different wave sequences, each linking as many as 255 waveforms!

AV Synthesis lets you select up to four of either 365 or 484 preset waveforms (more available on PCM cards) and 96 Wave Sequences (32 more with Card) and mix them together using the joystick.

This mixture, called a Patch, can be then combined with other Patches, to create complex, multi-layered sounds.

The Wavestation's basic features include 32 digital oscillators, 32 digital filters, 64 envelope generators, and 64 LFOs.

Thirteen modulation sources, including LFOs 1 and 2, aftertouch, Envelope 1, and the modulation wheel,

give you full control over parameters such as pitch, filter cutoff, and amplitude.

What's more, you can assign two modulation sources to any given parameter.

Two stereo multi-effect systems offer 47 types of reverb and other effects—

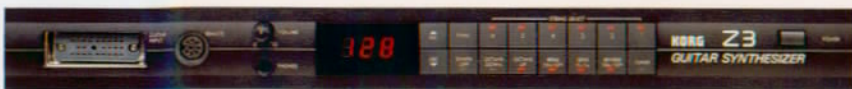
plus dynamic realtime control of effect time, depth, and balance via key pressure, velocity, or note number.

Used with a sequencer, the Wavestation can act as a 16 channel multitimbral tone generator.

And an optional ROM expansion kit (EXK-WS) gives you access to the 119 new drum, piano,

and other waveforms of the Wavestation A/D module, plus the A/D's eight additional effect types...for even greater variety in sound creation.

**WAVESTATION SPECIFICATIONS** ● System: AV (Advanced Vector) Synthesis system ● Sound Source Section: 20 bit, 32 voice, 32 oscillator ● Keyboard Section: 61 keys (velocity, after-touch) ● Waveform Memory: 365 waveforms (sampled and single cycle waves) ● Program Memory: Performance (50 preset+100 user area+50 card) Patch (35 preset+70 user area+35 card) ● WaveSequence: Memory (32 preset+64 user area+32 card) Total Steps (ROM 500+RAM 1,000+Card 500) ● Effects: Two digital multi effect processors (dynamic modulation function) 47 types of effects ● Multi Mode: Maximum 16 Multi-Timbral Channels ● Controllers: Joystick, Pitch wheel, Modulation wheel ● Display: 240x64 dot matrix LCD display ● Card Slots: PCM data card slot, Program data card slot ● Terminals: Damper pedal terminal, Assignable foot pedal/switch terminals (1,2), Outputs (1/L, 2/R, 3,4), Headphones ● MIDI Terminal: IN, OUT, THRU ● Power Supply: AC, Local voltage ● Power Consumption: 11W ● Accessories: AC cord ● **OPTIONS** ● WSC Series PCM & Patch/Performance Card ● WPC Series Patch/Performance Card ● Sequence Card ● MCR-03 Memory Card RAM ● FC-WS Flight Case ● HC-WS Hard Case ● ST-LV Stand ● EXK-WS ROM Expansion Kit (for WAVESTATION)



## Z3

GUITAR SYNTHESIZER

● DIMENSIONS: 435 (W) x 332.5 (D) x 44 (H) mm  
● WEIGHT: 4.5 kg

**The Z3 Guitar Synthesizer, with its outstanding performance features and potential for creating nearly any type of sound, is a perfect match for the compact ZD3 Guitar Synthesizer Driver, which is responsive to any and all playing techniques.**

The 1-unit size Z3 features built-in sound sources and various performance functions combined

with the expressive power of the compact ZD3 drive unit for simultaneous output of both actual guitar sounds and synthesizer sounds.

With 6-voice, 128-preset internal sound sources and four digital oscillators per voice, guitarists have access to a completely new sonic palette.

High-quality 16-bit digital reverb has also been included to enhance the sound with spacious stereo ambience.

The instrument operates in two different modes.

In Mode A, you can choose from any of the 128 preset sounds,

as well as select and change 6 different parameters of each sound, such as pitch bend, sensitivity transpose, and so on.

Mode B lets you write these parameter settings to 128 programs

and offers four different function groups for detailed editing: Play, Edit, Patch Play, and Patch Edit.

By bringing the electric guitar into the world of MIDI, the Z3/ZD3 combination allows use of other MIDI sound generators as well.

Two MIDI output modes are available: POLY and MONO.

Convenient and easy foot control of the instrument's functions is possible by connecting the foot controller, FC6, using the special RCC-050 remote cable.

**Z3 SPECIFICATIONS** ● Pitch Detection Method: 16 bit microprocessor and custom LSI with newly developed pitch extraction algorithm ● Preset Sounds: 128 (6voice) ● Mode A: Real time parameter change ● Mode B: Programmable mode (128 Timbre set patches, 64 Program patch play, 6 Multi-timbre) ● Effects: 16 bit digital reverb on/off ● Tuner: Digital tuner (Calibration range: 438Hz-445Hz) ● Front Panel: Guitar input (24-pin), Remote input (8-pin DIN), Synth output volume, Headphones, Power switch, 7-Segment LED x 3 Digit display, Panel switches (INC, DEC, TUNER, REVERB ON/OFF, SENS HI/Lo, BEND ON/OFF, OCTAVE UP, OCTAVE DOWN, SYNTH OFF, FUNC, STRING SELECT 1-6) ● Rear Panel: Outputs (L/MONO, R), Guitar output, Pedal switch jack (1. Synth off, 2. Hold, 3. Program up, 4. Program down), MIDI IN, MIDI OUT, MIDI IN/REMOTE switch, MODE A/B switch ● Power Supply: AC, Local voltage ● Power Consumption: 24W ● Accessories: Rackmount adaptors ● **OPTIONS** ● FC6 Foot Controller ● HC-2X (for Z3+FC6) Hard Case, HC-1U 1U Rack Case



## ZD3

GUITAR SYNTHESIZER DRIVER

● DIMENSIONS: 125 (W) x 74 (D) x 31 (H) mm  
● WEIGHT: 420g (including cable)





AV Synthesis System  
**NEW**

# WAVESTATION A/D

• DIMENSIONS: 430 (W) x 405.3 (D) x 89 (H) mm  
• WEIGHT: 5.2kg

Four megabytes of wave ROM...plus an A/D convertor that lets you process external analog signals. An AV Synthesis sound module that adds variety to sound creation!

Advanced Vector Synthesis in a 2U rack-mount module! The Wavestation A/D inherits all the creative potential of the Wavestation, from AV Synthesis and WaveSequencing to dynamic realtime control of effects. It also adds new drum, piano, bass, and other sounds to the Wavestation's lineup of 365 waveforms, giving you a total of 484 waveforms and 32 additional wave sequences to choose from.

Of course, the Wavestation Sound Library gives you a wide selection of fresh sound data. And you won't want to miss the WPC-ex Series of Patch/Performance cards, which make full use of the A/D's expanded waveform selection. You can access up to 175 patches, 250 performances, and 160 wave sequences for immediate selection when you use an optional RAM card (MCR-03).

An A/D conversion function lets you input analog signals, convert them to digital form, combine them with internal waveforms, and process them in realtime, putting a host of new sound creation techniques in your hands. And the Wavestation's 47 original effects are joined by eight new effect types, such as vocoder effects and a compressor-limiter/gate, which help you make the most of the A/D convertor.

You can even connect the A/D to a Wavestation keyboard, to achieve up to 64 simultaneous voices and full control of the A/D's AV Synthesis and realtime modulation capabilities. The Wavestation A/D: adding even more original sound to an already unique system!

## A/D Conversion Function

The Wavestation A/D features an analog/digital conversion function which makes possible new techniques in sound creation. Sounds such as voices or guitars via two channels, then convert them to digital signals and process them as you would the A/D's internal waveforms. Add effects, or mix them with other waveforms using Vector Synthesis. You can even input voices and mix them with a carrier signal from a master keyboard to create vocoder sound effects.

**WAVESTATION A/D SPECIFICATIONS** • System: AV (Advanced Vector) Synthesis system • Sound Source Section: 20 bit, 32 voice, 32 oscillator • Waveform Memory: 484 waveforms (sampled and single cycle waves) • Program Memory: Performance (50 preset+150 user area+50 card) Patch (35 preset+105 user area+35 card) • WaveSequence: Memory (32 preset+96 user area+32 card) Total Steps: (ROM 500+RAM 1,500+Card 500) • Effects: Two digital multi effect processors (dynamic modulation function) 55 types of effects • Multi Mode: Maximum 16 Multi-Timbral Channels • Controllers: Joystick • Display: 240x64 dot matrix LCD display • Card slots: PCM data card slot, Program data card slot • Terminals: Analog signal input terminals (2 systems for A/D conversion), Assignable foot pedal/switch terminals (1,2), Outputs (1/L, 2/R, 3,4), Balanced outputs L&R, Headphones • MIDI terminal: IN, OUT, THRU • Power Supply: AC, Local voltage • Power Consumption: 13W • Accessories: AC cord, Rackmount adaptors, SYNC/MIDI cable, WPC-0AD  
**OPTIONS** • WSC Series PCM&Patch/Performance Card • WPC Series Patch/Performance Card • Sequence Card • MCR-03 Memory Card RAM • FC-MIR Flight Case • HC-2U Hard Case

## ADVANCED VECTOR SYNTHESIS SYSTEM

Korg's new Advanced Vector Synthesis system is the first step in the Wavestation's powerful sound creation capabilities. Vector Synthesis is unique in that it lets you combine these sounds in ways previously unattainable. Simply select up to four sounds and move the joystick among them to create a new sound mix. The joystick alters the ratio or balance of the four waveforms to make an entirely new, composite waveform. Moving the joystick also makes it possible to sequence the variations while the MIX ratio changes (see Fig. 1). Musically this means that the Korg Wavestation provides full dimensional sound with rich textures and highly complex harmonic variations that simply were not possible to create using a conventional synthesizer system.

## AV SYNTHESIS SYSTEM BLOCK DIAGRAM

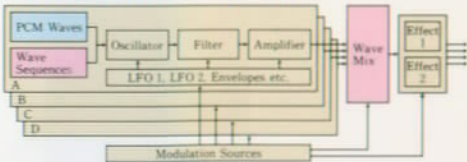
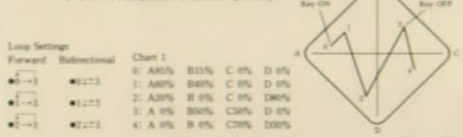


Fig-1. USING THE JOYSTICK TO SYNTHESIZE WAVEFORMS

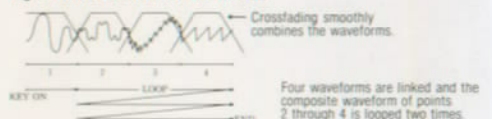


Begin by selecting four separate waveforms to be assigned to the four points A, B, C, and D. The MIX ratio of each waveform can be changed by moving the joystick. As shown in the illustration, when moving the joystick from position 0 to 4, the MIX ratio will change as indicated in Chart 1. The sound can be further altered by selecting a loop between two points of the MIX ratio envelope. For example, when the four points are set as shown in the illustration and a bi-directional loop of 1-3 is selected, the MIX ratio will change from 0 to 1 to 2 in order after the key is pressed. If the key is held down, the sound will loop between points 1 and 3 in the order 3 to 2 to 1 to 2 to 3, and so on. When the key is released, the MIX ratio will progress from 3 to 4, completing the sound's cycle. In other words, the timbre of the sound varies according to the movement between the specified points. The attack portion of the sound envelope goes from point 1 to 2, the sustain portion moves in a bi-directional loop between 1 and 3, and the release portion goes from 3 to 4.

## WAVE SEQUENCING

Wave Sequencing makes it possible, for the first time, to program your own original sound waveforms by combining any of waveforms, a function unavailable on conventional synthesis systems. The harmonic structure can be changed continuously, allowing you to recreate the rich timbral characteristics of analog synthesizers and the full sound of pulse width modulation. By fully utilizing the sonic advantages of sophisticated PCM technology, the AV synthesis system is capable of producing a wider range of sounds than was ever before possible. Melody sequences and rhythm sequences can also be programmed as an integral part of the sound by setting the tuning, duration, and crossfade time of each waveform. Moreover, wave sequences can be perfectly synchronized with an external MIDI clock signal, further extending the music production capabilities of this remarkable instrument. Wave sequences can be further processed using filters, LFOs, envelopes, effects, or vector synthesis mixing.

Fig-2. WAVE SEQUENCE EXAMPLE



# NEW SG-1D

SAMPLING GRAND

• DIMENSIONS: 1370 (W) x 400 (D) x 123 (H) mm  
• WEIGHT: 33.7kg

Truly professional quality acoustic grand piano sounds and natural expressive control in a sampled piano.

The New SG-1D is a sampled piano in which sampling technology has been catapulted to a completely new dimension. The reality of sound and expression is stunning—right from the attack of the sound when the key is struck and the resonance of the sound throughout the body of the piano, to the swell and slow decay of the sound. Four preset sounds are provided: PIANO I, II and E. PIANO I, II.

Optional ROM cards let you augment the sound library of the New SG-1D with such instruments as organ, vibes and guitar. Moreover, you can fine-tune the sound to your liking with the built-in 3-band equalizer, brilliance, and digital chorus controls.

Full sized keys and an authentic weighted action provide exceptional expressive control.

You can even customize the keyboard's response over an 8-step range.

The New SG-1D performs equally well as a sophisticated master keyboard for MIDI system control. Full MIDI implementation and functions such as local ON/OFF, split as well as program change, damper pedal are received and transmitted via MIDI.

**NEW SG-1D SPECIFICATIONS** • Keyboard: 88 keys • Sound Sources: All sampled • Voices: 12 • Controls: MIDI (BEND, MODULATION), Volume, Equalizer (BASS, MIDDLE, TREBLE), MIDI key, Tone (PIANO I, PIANO II, E.PIANO I, E.PIANO II, Card), Brilliance, Chorus (ON/OFF, DEPTH, SPEED), Tune, Dynamics, MIDI channel (RECEIVE, TRANSMIT) • Audio Outputs: Output (L/MONO, R, LOW/HIGH SWITCH), Headphones • Control Jacks: Damper, MIDI (IN, OUT, THRU), ROM Card • Power Supply: AC, Local voltage • Power Consumption: 27W • Accessories: Connection cord, Damper pedal (DS-1), Music stand  
**OPTIONS** • SGC-01~06 Memory Card ROM