

Chapter 1

Introduction

Welcome!

Congratulations, and thanks for purchasing the Kurzweil/Young Chang K2vx! You've got your hands on an extremely capable musical instrument packed with great acoustic, electric, and synth sounds—combined with some of the most advanced synthesis features available, which you can use to create almost any sound imaginable.

Overview of the K2vx

The K2vx has been designed to be a versatile instrument both for performance, and for multi-timbral sequencing and recording. Its Variable Architecture Synthesis Technology lets you build sounds from realistic instrumental samples and sampled synth waveforms—then modify the nature of those sounds through a dazzling array of digital signal processing (DSP) functions. The K2vx also generates its own synth waveforms, which can be combined with the samples or used on their own. The K2vx packs 8 Megabytes of on-board sound ROM, and you can load samples from disk into optional sample RAM.

Before we get into explaining Variable Architecture Synthesis, here are a few of the features that by themselves make the K2vx an impressive stage and studio machine. It's fully multi-timbral—different programs can be played on each MIDI channel. It's 48-note polyphonic, for a full sound no matter how many chords you play. There's an on-board digital effects processor, providing up to four simultaneous effects, including realtime effects control, internally or via MIDI.

In addition to the standard stereo audio output pair, there are eight separate outputs that can be configured as stereo pairs, or as individual mono outputs. You can also use the separate outputs as insert points for outboard gear.

The K2vx offers eight SIMM sockets (single, in-line memory modules) so you can add optional sample RAM, where you can store samples that you've loaded from disk. You can add up to 128 megabytes of sample RAM! (Sample RAM is not battery-backed, so RAM samples are erased from memory when you power down.)

For offline storage, there's also a floppy drive and two *SCSI* ports, so you can store files on floppies or on an external hard disk or load them from a CD-ROM drive. The two SCSI ports make it easy to chain multiple SCSI devices together. There's also provision for an internal SCSI hard disk. You'll find all this storage potential extremely useful for saving and loading samples, which can be transferred to and from the K2vx using the standard MIDI sample transfer format, or the new, faster, parallel SMDI sample transfer format (SCSI Musical Data Interchange). See the *Reference Guide* for information about MIDI and SMDI sample transfers.

The K2vx's battery-backed RAM will store about 400 of your own programs, or 30,000 notes recorded in the sequencer. This sequencer (Song mode) lets you play back MIDI type 0 sequences, record and play back your own songs, and record multi-timbral sequences received via MIDI. For more onboard storage you can add the P/RAM option, which will increase your battery-backed RAM to about 1280K, enough to store hundreds of additional programs, setups, songs, and other *objects*.

The Local Keyboard Channel feature enables you to use the K2vx's tri-zone setups even if your MIDI controller can transmit on only one channel. The K2vx will also rechannelize incoming

MIDI information and send it to its MIDI Out port, enabling you to control additional synths on three different channels.

An optional sampling feature is available, allowing you to make your own mono or stereo samples using analog or digital inputs.

And, of course, there's the incomparable Kurzweil sound. The K2vx comes to you with 200 preset factory programs (called patches, presets, voices, etc. on other synths), as well as 100 multi-zone performance setups. Play them straight from the box, tweak them in any number of ways, or develop your own programs from scratch—which brings us back to the powerful programming capabilities of the K2vx.

What is VAST?

Variable Architecture Synthesis gives the K2vx its unprecedented flexibility. While many other synthesizers offer a fixed set of *DSP* tools (typically filtering, pitch, and amplitude modulation) the K2vx's Variable Architecture lets you arrange a combination of any five DSP functions from a long list of choices. The functions you choose define the type of synthesis you use.

Each layer of every program has its own DSP architecture, what we call an *algorithm*. Within each algorithm, you can select from a variety of DSP functions. Each function can be independently controlled by a variety of sources including LFOs, ASRs, envelopes, a set of unique programmable functions (FUNs), as well as any MIDI control message. The many different DSP functions and the wealth of independent control sources give you an extremely flexible, truly vast collection of tools for sound creation and modification.

How the K2vx Works

The K2vx integrates two MIDI-driven components: a sound engine, and a global effects processor. The sound engine responds to the MIDI events generated by your MIDI controller and turns them into sounds that are processed within the variable architecture of the algorithms. The resulting sound can then be routed through the effects processor and to the MIX or separate audio outputs.

How to use this manual

This manual includes the following:

- how to connect and power up your K2vx, getting around the front panel, and a brief description of the operating modes.
- basic editing, including the normal operations of each operating mode.
- the advanced programming features that make the K2vx so powerful—a number of familiar synthesis tools and quite a few new ones.

Even if you're a complete techie, you should read Chapter 3, User Interface Basics. Here you'll get a tour of the K2vx's front panel and learn how to navigate through the major functions.

Chapter 4 describes the concept and operation of the K2vx's eight operating modes, with a brief description of each. Chapters 6 through 13 describe each mode in detail, including the editors contained within them. Chapters 14 through 17 discuss the advanced editing features. Chapter 18 shows you how to use the multiple audio outputs to suit your needs. Chapter 19 is a programming tutorial, giving you specific examples of many of the K2vx's programming functions. Some are basic, some are advanced. By working through the tutorials, you'll become familiar with many synthesis techniques, and you'll get a first-hand look at how to unleash the power of the K2vx.

When manual text appears in boldface italic (***like this***), you'll find it described in the Glossary in the *Reference Guide*. Only the first one or two occurrences of these words are highlighted.

The best way to read this manual is with your K2vx in front of you. By trying the examples we give to illustrate various functions, you can get a quick understanding of the basics, then move on to the more advanced features.

If you like to figure out your equipment for yourself, and normally use manuals only as reference sources, you'll probably get the most use out of the *Reference Guide* that accompanies this manual, which contains brief descriptions of the K2vx's major operating features, and all sorts of useful lists—*programs*, *keymaps*, *algorithms*, effects, *control sources*, and more. A glossary and complete specifications for the K2vx are also included in the *Reference Guide*.

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