

Chapter 1

Introduction

Welcome!

Congratulations, and thanks for purchasing a Kurzweil/Young Chang K2600 Series instrument. There are seven K2600 Series models, for a wide range of applications:

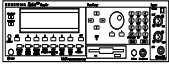
K2600	76 keys
K2600S	K2600 with built-in sampler
K2600X	88 keys
K2600Xs	K2600X with built-in sampler
K2600R	Rack-mount model
K2600Rs	K2600R with built-in sampler
K2600 AES	Top-end model, with built-in sampler, digital I/O, DMTi, and sample libraries

Whichever model you have, you're looking at one of the most powerful music workstations available. The K2600 Series instruments are 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. The K2600 incorporates most of the features of the award-winning K2000 and the K2500, and provides several new features as well.

This manual and the accompanying *Musician's Reference*, as well as the video tutorial, will get you started with your new instrument. You'll definitely want to keep the manuals handy as you become an advanced user, too.



For K2600R Owners



Throughout the *Musician's Guide* and *Musician's Reference* we've simplified things by saying just "K2600" any time we're referring to features that are common to all instruments in the K2600 Series. Obviously, though, there are some differences between the rack and keyboard models; we'll point them out where they occur and mark them with a handy K2600R margin symbol like the one to the left of this paragraph. If you own a keyboard model of the K2600, you may want to read the K2600R-specific information anyway, since much of it also applies when your K2600 is a MIDI slave (when using a computer-based sequencer, for example).

Overview of the K2600

The K2600 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 wide variety of digital signal-processing (DSP) functions. The K2600 also generates its own synth waveforms, which can be combined with the samples or used on their own. The K2600 packs 12 Megabytes of onboard sound ROM. You can add up to four optional ROM sound blocks (there are two currently available), 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 K2600 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 five simultaneous effects, including real-time 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. These are balanced outputs, which you can connect to either balanced or unbalanced inputs.

The K2600 offers two 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 K2600 using the standard MIDI sample transfer format, or the faster, parallel SMDI sample transfer format (SCSI Musical Data Interchange). See the *Musician's Reference* for information about MIDI and SMDI sample transfers.

The K2600's battery-backed program RAM can store about 800 of your own programs, or about 60,000 notes recorded in the sequencer. This sequencer (Song mode) lets you play back MIDI type 0 or 1 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 1500K (1.5M), enough to store hundreds of additional programs, setups, songs, and other *objects*. (Without the P/RAM option, the K2600 has about 500K of program RAM.)

The Local Keyboard Channel feature enables you to use the K2600's multi-zone setups even if you're using a MIDI controller that can transmit on only one channel. The K2600 will also rechannelize incoming MIDI information and send it to its MIDI Out port, enabling you to control additional synths on eight different channels.

An optional sampling feature is available, allowing you to make your own mono or stereo samples using analog or digital inputs. With the sampling option, you can also use Live mode, which enables you to take an input signal (at the analog sampling input), and route it through the K2600's VAST algorithms—so you can apply Kurzweil DSP and effects to any sound. The sampling option also gives you digital audio output (stereo optical or unbalanced stereo XLR).

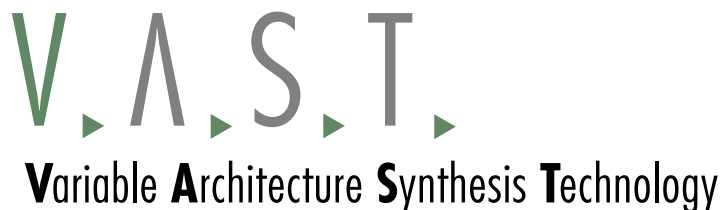
There's also the digital input/output (I/O) option, which provides eight channels for digital audio input and output (as well as a stereo digital output).

And, of course, there's the incomparable Kurzweil sound. The K2600 comes to you with over 400 programs (called patches, presets, voices, etc. on other synths)—238 in ROM and 200 more in RAM. There are also about 200 multi-zone performance setups. Many of these setups use note triggers to play factory-recorded songs that provide grooves and arpeggiation that make great templates for performance or recording.

VAST Synthesis

Variable Architecture Synthesis Technology gives the K2600 its unprecedented flexibility. While many other synthesizers offer a fixed set of **DSP** tools (typically filtering, pitch, and amplitude modulation) the K2600'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, which 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. When you're ready to jump in and start creating and editing programs, turn to Chapter 6.



KB3 Tone Wheel Emulation

In addition to VAST synthesis, the K2600 offers many oscillator-based programs that give you the classic sound of tone-wheel organs like the Hammond B 3™. KB3 mode, as we call it, is completely independent of VAST, and has its own set of editing procedures. You'll find details in Chapter 6.

How the K2600 Works

The K2600 integrates three MIDI-driven components: a MIDI controller (the keyboard, or an external MIDI controller), a sound engine, and a global effects processor (KDFX). The sound engine responds to the MIDI events generated by the MIDI controller, and turns them into sounds that are processed within the variable architecture of the algorithms—or by oscillators for KB3 programs. The resulting sound can then be routed through KDFX and to the MIX and separate audio outputs.

How to Use This Manual

This manual includes the following:

- How to connect and power up your K2600, 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 K2600 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 K2600's front panel and learn how to navigate through the major functions.

Chapter 4, *The Operating Modes* describes the concept and operation of the K2600'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 19 shows you how to use the multiple audio outputs to suit your needs. Chapter 20 is a programming tutorial, giving you specific examples of many of the K2600'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 K2600.

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

You'll also see text in bold face (**like this**). We use bold face to indicate parameter values, K2600 objects (like programs and setups), filenames (like songs and samples), and front-panel buttons (like the **Program** button and the soft buttons).

The best way to read this manual is with your K2600 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 *Musician's Reference* that accompanies this manual, which contains brief descriptions of the K2600'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 K2600 are also included in the *Musician's Reference*.

Do I Have Everything?

Your K2600 shipping carton should include the following in addition to your instrument:

- Power cable
- Sustain pedal (keyboard models only)
- Instructional video
- Two manuals: the *Musician's Guide* (this manual) and the *Musician's Reference*
- A set of accessory disks

If you don't have all of these components, please call your Kurzweil/Young Chang dealer.

The Accessory Disks

The set of accessory disks that came with your K2600 should include the following:

K2600 Base ROM Objects

This disk contains two files. The first file is named OBJKBXXX.K26 (where XXX is the version number). The second file is named OBJKLXXX.K26 (where XXX is the version number). These disks provide a backup of the ROM Objects installed in your K2600 at the factory.

You will not normally need to use these disks, however you should keep them in a safe place in case you need to reinstall this version of the operating system. For example, if you have installed a newer version of the objects (we make new versions available for download from our web site) and you encounter any problems, you might need to go back and install the version on these disks.

OBJKB contains all of the objects in a stock K2600 without sampling. OBJKL contains the Live Mode objects, which are included in a unit with the sampling option installed.

When you install a new version of the operating system, you'll need to load all the object files for the options you have. This includes the object files for the *Orchestral* and *Contemporary* ROM blocks, if you have them. Load the system files first, then all of the object files, then exit the Boot Loader by pressing the **Run System** soft button. See Appendix A if you need help with operating the Boot Loader.

K2600 General MIDI Compatibility

This is a two-disk set, intended to make the K2600 compatible with General MIDI (GM) programs. The K2600 is not a General MIDI instrument. GM was intended as a least common denominator and is normally found on low-end instruments, not instruments intended for the high-end professional.

Nonetheless, we have created a GM compatibility file that can be loaded into the K2600. It contains samples and therefore must be loaded into the unit each time you power up.

There are three different GM files. Which file you use depends on which ROM blocks you have in the K2000. The disk that comes with your unit is for a K2600 without any additional ROM blocks. If you purchase the *Orchestral* or *Contemporary* ROM block, you will receive two other files—one for a unit with just the *Orchestral* ROM added, and one for a unit with the *Orchestral* and *Contemporary* ROM added. You can also download these files from the Downloads page of our web site:

<http://www.youngchang.com/kurzweil/html/downloads.html>

For complete documentation on how to use the GM file, please see *QA Banks and General MIDI Files* on page 10-15.

K2600 Demos

This disk contains several directories of demo song files, which show off some of the capabilities of your K2600. In addition, the disk contains two other files. **KDFXTUTR.K26** contains objects used in the tour of Effects mode that starts on page 9-12. **VIDEO.K26** is referred to in the Disk mode section of the video tutorial.

Most of the song demos can simply be loaded into the K2600 and played from Song mode. However, two demo files require that your K2600 have the sampling option installed. The demo files **LMFBDMO1.K26**, and **LMFBDMO2.K26** demonstrate internal feedback loops using a chain of VAST->KDFX->sampler->VAST->KDFX—known as Live mode. Because a Master table is included, your SampleMode-page settings will be set automatically when you load the demo file.



***Caution:** Programs that cause internal feedback can get extremely loud, so it's important to be careful after loading these objects. Live-mode programs are inherently unstable when you're in Live mode and the sampling source (the Src parameter in the Samplemode page) is set to **Int**. These programs are capable of producing tremendously loud feedback loops with a relatively small amount of gain. In modes where the provided studio is not the active studio, the compressor that keeps these feedback chains under control isn't operating, and the loop can grow out of control very quickly. If you intend only to listen to the demo, and not to examine the programming, we recommend that you delete the song file (and its dependent objects) from your K2600 when you are done listening. We also recommend that you go to the SampleMode page and set the Src parameter to **Ext** or the Mode parameter to something other than **LiveIn**, to help to avoid any unintended feedback. If you want to look at the program settings, lower the volume on your instrument, and read the more detailed description of Live mode beginning on page 14-41.*

K2600 Farm & Extras

This disk contains over 1000 extra programs and effects, all cultivated from the “farm” where we grow our programs and effects.

The **K2500FRM** directory contains over 1000 extra programs, organized in files by type of sound. This set of programs was originally developed for the K2500, hence the name.

The **KDFXFARM** directory contains two subdirectories. **LIVEMODE** contains a set of files containing extra programs using Live mode (which requires having the sample option in your K2500). **MOREKDFX** contains some FX Presets and a number of Programs that use KDFX, as well as a couple of blank studios.

PIANOFRM contains extra programs that specifically use the 4-megabyte stereo piano.

VOCODER contains programs and setups that are designed to be used with the Vocoder feature. You can read about the Vocoder in detail on page 11-4.

K2600 Additional Programs and Factory RAM Banks

This disk contains even more programs from our program farm.

The **MOREPRGS** directory contains several files of extra programs.

The **RAMBANKS** directory contains a backup file of the programs that were loaded into the 300s and 400s banks when your unit was shipped from the factory.

K2500 Compatibility

This disk contains a file of all the ROM objects in the K2500. You would use this file if you have songs created originally for a K2500. See *Loading Older Setup Versions* on page 7-2 for information about using older objects with the K2600.

K2000 Compatibility

These two disks contain a file of all the ROM objects in the K2000. You would use this file if you have songs created originally for a K2000. Again, see *Loading Older Setup Versions* on page 7-2.

