

Table of Contents

Introduction	1-1
Welcome!	1-1
Overview of the K2vx	1-1
What is VAST?	1-2
How the K2vx Works	1-2
How to use this manual	1-2
Startup	2-1
Basic Startup Checklist:	2-1
Startup—the Details	2-1
Before You Start...	2-1
The Rear Panel	2-2
Playing the Presets	2-4
Programs	2-4
Setups	2-4
Quick Access	2-5
Performance Controls	2-6
K2vx Boot Loader	2-6
Starting the Boot Loader	2-6
Boot-loader Main Menu:	2-6
Install System / Install Objects	2-7
Run System	2-8
Hard Reset	2-8
Run Diags	2-8
Fixed Diags	2-8
User Interface Basics	3-1
Mode Selection	3-1
Mode Buttons	3-1
Navigation	3-1
The Display	3-1
Pages	3-2
The Top Line	3-2
The Bottom Line	3-2
The Soft Buttons	3-2
The Cursor Buttons	3-2
Data Entry	3-4
The Alpha Wheel	3-4
The Plus/Minus Buttons	3-4
The Alphanumeric Pad	3-4
Double Button Presses	3-5
Intuitive Data Entry	3-6
Changing the Current Layer in Multi-Layer Programs	3-6
Search Function	3-6
The Panel Play Feature (K2vxR)	3-7

The Operating Modes	4-1
What the Modes Are	4-1
Selecting Modes	4-1
Using the Modes	4-3
Editing Conventions	5-1
Introduction to Editing	5-1
Object Type and ID	5-2
Saving and Naming	5-2
Deleting Objects	5-4
Memory Banks	5-5
Special Button Functions	5-6
Program Mode and the Program Editor	6-1
K2vx Program Structure	6-2
The Program Mode Page	6-2
What are these programs in parentheses?	6-2
The Soft Buttons in Program Mode	6-3
Using the Program Editor	6-4
The Soft Buttons in the Program Editor	6-4
Algorithm Basics	6-5
Common DSP Control Parameters	6-6
The Program Editor—Pages	6-9
The Algorithm (ALG) Page	6-9
The LAYER Page	6-10
The KEYMAP Page	6-14
The PITCH Page	6-16
F1–F3 Pages	6-17
The F4 AMP Page	6-17
The OUTPUT Page	6-18
The EFFECT Page	6-21
The COMMON Page	6-22
The Amplitude Envelope (AMPENV) Page	6-24
Envelopes 2 and 3	6-27
The Envelope Control (ENVCTL) Page	6-27
The LFO Page	6-29
The ASR Page	6-30
The FUN Page	6-31
The VTRIG Page	6-32
The Function Soft Buttons	6-32
Setup Mode and the Setup Editor	7-1
Setup Mode	7-1
The Setup Editor	7-2
Quick Access Mode and the	
Quick Access Editor	8-1
Effects Mode and the Effects Editor	9-1
The Effects Mode Page	9-1

The Soft Buttons on the Effects mode Page	9-1
Effects Mode Parameters	9-2
Understanding FX Mode and FX Channel	9-2
Another Use for Effects Mode	9-5
The Effects Editor	9-5
Editing Effects	9-6
Configurations and Parameters	9-7
MIDI Mode	10-1
The Transmit (XMIT) Page	10-1
Physical Control Parameters	10-4
The Receive (RECV) Page	10-5
The Channels Page	10-8
Parameter Locks	10-10
Program Change Formats	10-10
Extended and Kurzweil Program Change Types	10-11
The Soft Buttons in MIDI Mode	10-18
Master Mode	11-1
The Master Mode Page	11-1
The Soft Buttons in Master Mode	11-4
Guitar/Wind Controller Mode	11-5
Object Utilities	11-6
Move	11-7
Copy	11-8
Name	11-9
Delete	11-9
Dump	11-10
Accessing the Object Utilities from the Editor	11-10
Song Mode	12-1
Getting Started with the Sequencer	12-1
A Word about the Local Keyboard Channel	12-1
Tutorial: Recording a song	12-2
.....	12-3
MAIN Page	12-11
Soft Buttons on the MAIN Page	12-15
Save this song? Dialog	12-16
Save New song? Dialog	12-17
Erase Track Dialog	12-17
MISC Page	12-18
Soft Buttons on the MISC Page	12-22
MIX Page	12-23
Soft Buttons on the MIX Page	12-24
The Edit Song Pages	12-25
Edit Song: COMMON Page	12-25
Parameters used with the Arrangement Feature	12-26
Soft Buttons on the Edit Song: COMMON Page	12-27

Edit Song: EVENT Page	12-28
Soft Buttons on the Edit Song: EVENT Page	12-29
Edit Song: TRACK Page	12-31
Common Parameters for Edit Song: Track Functions	12-32
Region / Criteria Window Parameters	12-32
Soft Buttons on the Edit Song: Track Page	12-33
Edit Song: Track Functions – Erase	12-34
Edit Song: Track Functions – Copy	12-34
Edit Song: Track Functions – Bounce	12-35
Edit Song: Track Functions – Insert	12-35
Edit Song: Track Functions – Delete	12-36
Edit Song: Track Functions – Quantize	12-36
Edit Song: Track Functions – Reference Quantize	12-37
Edit Song: Track Functions – Shift	12-38
Edit Song: Track Functions – Transpose	12-39
Edit Song: Track Functions – Change	12-39
Edit Song: Track Functions – Thin	12-40
Edit Song: Track Functions – Remap	12-41
Edit Song: Track Functions – Grab	12-41
Edit Song: STEP Page	12-43
Recording with the STEP editor	12-43
Soft Buttons on the Edit Song: STEP Page	12-45
Edit Song: ARRANGE Page	12-46
Triggering Steps from a Key	12-47
Soft Buttons on the Edit Song: ARRANGE Page	12-48
Selecting a Song for Playback	12-49
Effect Selection During Recording and Playback	12-49
Synchronizing Songs	12-49
Memory Limits	12-50
Loading Songs From Disk	12-50
Recording Multi-timbral Sequences via MIDI	12-50
Disk Mode	13-1
Disk Mode Page	13-1
Using your K2vx in a SCSI System	13-4
Directories	13-4
Path	13-4
Startup	13-5
Library	13-5
Disk Drive Information	13-5
Macro On Indicator	13-5
Disk Mode Soft Buttons	13-5
File List Dialog	13-6
The File Index	13-8
Soft Buttons in the File List Dialog	13-8
Total	13-10

Quick Scrolling to Subdirectories	13-10
Creating Directories	13-11
Creating a Directory with NewDir	13-11
Creating a Directory with Save -> NewDir	13-12
The Directory Selection Dialog	13-12
Disk Mode Functions	13-13
Loading Files	13-13
Loading Individual Objects	13-13
Shortcuts when Loading Objects	13-16
Loading Dependents of Selected Objects	13-17
Auditioning Samples from a Disk File	13-17
Loading Objects from Floppy Disk Files	13-18
Load Function Dialog	13-18
Bank Status Indicator	13-18
Loading Methods	13-18
Multiple Selection of Files to Load	13-21
Aborting a Multiple File Load	13-21
More Load Function Enhancements	13-22
Saving Files	13-22
Soft Buttons in the "Save Selection" Dialog	13-24
Saving Individual Objects	13-24
Shortcuts when Saving Objects	13-24
Auditioning Objects in RAM	13-25
Saving Dependent Objects	13-26
The Name Table	13-27
Working with Relink-by-Name	13-28
Not Loading the Name Table	13-31
Relink-by-Name Processing Time	13-31
The Multiple Object Selector Page	13-32
Multiple Object Selector Soft Buttons	13-33
Entering Selection Criteria in the Multiple Object Selector	13-34
More Features of the Save Dialog	13-37
Macros	13-38
The Macro Page	13-38
Macro Modes	13-39
The Macro Table	13-40
How to Make a Macro File	13-41
Macro Entries	13-45
Using the Bank and Mode Fields	13-46
Viewing the Object List for a Macro Entry	13-46
Unspecified Disk Drive ID	13-47
The Library Disk	13-47
Loading Selected Entries from a Macro File	13-49
Editing Macros	13-50
Macro Insert	13-53

Saving and Loading a Macro Table in a .KRZ file	13-54
Aborting a Macro Load	13-54
Disk Utilities	13-55
Find Files	13-56
List	13-57
Free	13-58
Moving Files Between Directories	13-59
Renaming Files	13-60
Deleting Files and Directories	13-61
Backup and Copy Functions	13-61
File Copy	13-63
Creating a Startup File	13-63
Deleting Banks in a Startup File	13-64
MS-DOS File System Compatibility	13-65
File Name Compatibility	13-65
Importing and Exporting Data using Standard File Formats	13-65
AIFF and AIFF-C Files	13-66
WAVE Files	13-66
MIDI Type 0 Files	13-66
DSP Functions	14-1
Introduction to Algorithm Programming	14-1
Additional Parameters	14-3
Filters	14-5
How to read the graphs	14-6
Equalization (EQ)	14-22
Pitch / Amplitude / Panner	14-31
Mixers	14-34
Waveforms	14-35
Added Waveforms	14-38
Non-linear Functions	14-38
Waveforms Combined with Non-linear Functions	14-47
Mixers with Non-linear Inputs	14-49
Hard Sync Functions	14-50
Sampling and Sample Editing	15-1
Setting Up For Sampling	15-1
Cables and Input Jacks	15-1
Entering The Sampler - Two Different Ways	15-1
Sampling Analog Signals	15-2
Recording Samples	15-5
Using the Digital Outputs	15-8
Editing Samples	15-8
The Function Soft Buttons in the Sample Editor	15-9
TRIM	15-13
The Soft Buttons on the DSP Page	15-17
DSP Functions	15-18

Crossfade and Volume Adjust Curves	15-30
Reading Samples	15-31
Akai	15-31
Roland	15-32
EPS	15-32
The Keymap Editor	15-33
The Soft Buttons in the Keymap Editor	15-34
The Keymap Editor Parameters	15-35
Building a Keymap	15-37
FUNS	16-1
The Mechanics of Control Sources	16-1
Programming the FUNs	16-2
The FUN Equations	16-3
The List of Equations	16-4
.....	16-10
Warp Equations	16-10
Sawtooth LFOs	16-13
Chaotic LFOs	16-13
Diode Equations	16-14
The Order of Evaluation for FUNs	16-16
Other Editors	17-1
The Intonation Table Editor	17-1
The Velocity Map Editor	17-3
Using the Velocity Map Editor	17-3
The Pressure Map Editor	17-6
Audio Outputs	18-1
Audio Configurations	18-1
Using the MIX Outputs	18-1
Using the Separate Outputs	18-2
Using Stereo Insert Cables	18-3
Output Groups and MIDI Channels	18-4
Programming Examples	19-1
Example 1	19-1
Trumpet with Delayed Vibrato and Velocity-triggered Stabs	19-1
Example 2	19-4
Lowpass Filter, Envelopes	19-4
Example 3	19-6
Sample and Hold; Using a FUN	19-6
Example 4	19-7
SHAPER and PANNER	19-7
Example 5	19-9
Building a Drum Program; Using the Keymap Editor	19-9
Front Panel	20-1
Front Panel Quick Reference	20-1
Mode Button Functions	20-3

.....	20-4
Programs, Setups, and Keymaps	21-1
K2vx Program List	21-1
Setup List	21-9
..... Storing Objects in the Memory Banks	21-10
K2500 ROM Keymaps	21-11
Effects	22-1
List of Factory Preset Global Effects and Their Configurations	22-1
Effects Controller Numbers	22-2
LFOs	23-1
LFO Shapes	23-1
Note Numbers and Intonation Tables	24-1
K2vx Note Numbers and MIDI Note Numbers	24-1
Note Numbers for Percussion Keymaps	24-1
5-Octave Percussion Keymaps (C2 - C7)	24-1
2-Octave Percussion Keymaps (C3 - C5)	24-2
List and Description of Intonation Tables	24-3
Control Sources	25-1
Control Sources	25-1
Descriptions of Control sources	25-3
MIDI Control Source List	25-3
Main Control Source List	25-6
DSP Algorithms	26-1
Memory Upgrades and Other Options	27-1
Program RAM vs. Sample RAM	27-1
Viewing RAM Objects	27-1
Choosing SIMMs for Sample RAM	27-2
Using Headphones with the K2vx	27-2
Maintenance and Troubleshooting	28-1
Preventive Maintenance	28-1
Battery selection and Replacement	28-1
User-callable Diagnostics	28-2
Maximizing Music and Minimizing Noise	28-2
Power Problems and Solutions	28-4
Troubleshooting	28-4
Other Possible Problems	28-5
MIDI and SCSI Sample Dumps	29-1
SCSI Guidelines	29-1
K2vx and Macintosh Computers	29-2
Accessing a K2vx Internal Drive from the Mac	29-3
The MIDI Sample Dump Standard	29-3
SMDI Sample Transfers	29-7
System Exclusive Protocol	30-1
K2vx System Exclusive Implementation	30-1
Button Press Equivalence Table	30-7

Glossary	31-1
Specifications	32-1
K2vx FEATURES	32-1
Environmental Specifications	32-3
Physical Specifications	32-3
Electrical Specifications	32-3
MIDI Implementation Chart	32-4
K2vx Program Farm	A-1
Overview of Program Files	A-1
Programs Within the Files	A-2
ANACOMPS.K25	A-3
ANALEADS.K25	A-4
ANAPADS.K25	A-5
BASS.K25	A-6
BELLS.K25	A-7
BRASS.K25	A-8
DIGITAL.K25	A-9
DKICKSNR.K25	A-10
DRUMS.K25	A-11
ENSEMBLE.K25	A-12
ETHEREAL.K25	A-13
FXSOUNDS.K25	A-14
GUITARS.K25	A-15
HYBPERC.K25	A-16
HYBRIDS.K25	A-17
ORGANS.K25	A-18
PNOEPNO.K25	A-19
STRINGS.K25	A-20
VOX.K25	A-21
K2vx Compatibility	B-1
K2vx Compatibility Files	B-1
Converting K2vx Files to K2vx Files	B-2
Converting programs from the K2vx to K2vx	B-3
Programs using Drum samples	B-3
Effects Programs	B-3
Keymaps	B-3
Orchestral ROM	C-1
Contemporary ROM	D-1

