

Avant Mechanical Programmable Keyboards Instruction Manual



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Mechanical, Programmable Keyboards

BY CREATIVE VISION TECHNOLOGIES, INC.

<http://www.cvtinc.com>



IMPORTANT INFORMATION

Thank you for purchasing an Avant Keyboard from Creative Vision Technologies. We take great pride in building our products, and with proper care, your keyboard will give you years of trouble free operation.

1. **Please examine the contents of the carton thoroughly.** You should have received a diskette with the Avant Windows Application Software, manual, keycap puller, replacement "Caps Lock" and left "Alt" keycaps. (If you ordered an AT adapter, that will also be enclosed.)
2. **Please save the keyboard packaging material.** In the unlikely event that you need to return your keyboard, the packaging has been custom-designed to prevent damage during transit. Returns not using CVT approved packaging may void the warranty.
3. **Before turning your system on for the first time with your Avant keyboard installed, please follow these instructions:** Press and hold the <Escape> key while turning on your system. When the indicator lights blink, release the <Escape> key. This insures that the keyboard is set to the factory default settings.
4. **Although the manual will assist you in most cases, please refer to the "readme" and "help" files in the Avant keyboard software.** Be sure to read items relating to Hardware and Software Compatibility on pages 9 and 10 in your manual.
5. **CVT's technical support group is here to help you.** If you should have any questions, please call us. We can be reached at 612-478-6446 or toll free at 888-770-0500.
6. **Your Avant keyboard is covered by a two (2) year Repair or Replace Limited Warranty.** Please contact CVT's technical support for an RMA and return shipping instructions.
7. **Technical Note:** The Macro Description Field has a limitation of 20 characters. Using any more than this can cause unpredictable results with the download feature of your keyboard and you may not be able to save your keyboard layout to a file.

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ATTENTION KEYBOARD OPERATOR

Some studies suggest that continuous use of a keyboard may cause cumulative trauma disorders or related injuries. These studies also suggest that extended periods of repetitive movement when combined with improper work habits or poorly designed work environments may lead to certain types of physical discomfort such as numbing or aching in the hands or wrists. If you should experience any of these symptoms, please consult a qualified health professional.

It is suggested that the following actions be taken to help reduce risk of cumulative trauma disorders:

- Maintain upright posture with relaxed wrist position.
- Take frequent breaks from typing.
- Exercise regularly.
- Sustain good health habits.

Introduction

Congratulations on your purchase of an Avant keyboard!

This document describes setup and software installation for the Avant Series keyboards. An in-depth instruction manual is located in the on-line Help File. Your Avant will give you unmatched performance and features:

- Left and right Windows™ keys
- Windows™ application key
- Keyboard remapping
- Macro programming
- Comma/Period lock
- Optional settings for repeat rate, delay before repeat and validation time
- Standard, lock and sticky settings for Shift, Control and Alt keys
- Caps Lock, Num Lock, Scroll Lock and Macro Mode indicators
- Dvorak layouts available through remapping facility
- Full stroke mechanical click/tactile switches
- High quality constructed metal base

About Your Keyboard

Your new Avant keyboard represents state-of-the-art keyboard technology. It has been widely praised for its full-stroke range of motion and the tactile feedback produced by quality keyswitches.

Press a few keys on the keyboard. The keys are firm and responsive. The slight click you hear and feel when pressing a key is mechanical, not an electronic beep. Each key has a special mechanical switch causing each keystroke to be firm and efficient. The responsive Avant keyboard will make your keyboarding experience the best you've ever felt!

Unpacking and Installation

Complete the following steps to install your Avant keyboard:

- Unpack the keyboard.
- Turn the computer off and plug the cable in the proper connector.
- Adjust the keyboard so it is at a comfortable angle.
- Turn the computer on. Optionally, refer to the Avant Utilities section for installation of software.

Unpacking the Keyboard

- Carefully unpack your keyboard as you would any other piece of electronic equipment.
- Store the packing material in a safe place. If, for any reason, you are required to return the keyboard during the warranty period, the keyboard must be shipped in the original packaging.

Connecting the Cables

- Turn your computer off.
- Disconnect your old keyboard.
- Connect the Avant keyboard to your system by plugging the cable in the appropriate connector on your system.
- The keyboard comes standard with the 6-pin mini DIN connector. If you must adapt to a 5-pin AT style plug, please purchase the appropriate adapter.



PS/2 Style 6 PIN MINI DIN Connector

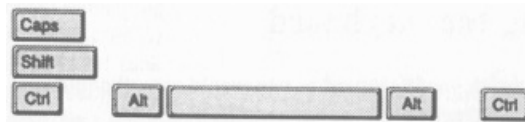


AT style 5 PIN DIN Connector

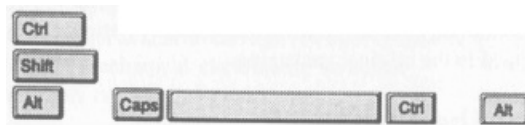
Swapping the CAPS, CTRL and ALT Keys

These replacement keycaps are included with your keyboard.

The Avant keyboard allows exchanging the CAPS LOCK, CTRL and ALT keys. This option is provided for those preferring an alternate keyboard layout or who require a specific layout for particular software. You must remove the keys from the default positions as described below. See the following section regarding the proper method of removing keycaps.



Standard Layout



Alternate Layout using supplied keycaps

- Remove the ALT and CTRL keys on the right side of the keyboard and swap their positions. Refer to Pulling the Key Caps section for instructions.
- Remove the CTRL, ALT and CAPS LOCK keys from the left side of the keyboard.
- Place the original ALT key in the new position.
- Place the special replacement CTRL and CAPS LOCK keys in the new positions and press them firmly into place.
- Install and run the Avant Utilities software and re-map the keys as described in the on-line help.

Pulling the Key Caps

Use the key cap puller to remove the key caps as follows:

- Hold the puller by the handle.
- Fit the tweezer arms over the key you want to remove.
- When the arms snap into place under the key, pull straight up with firm pressure. Don't wiggle the puller from side to side. This will damage the key.
- Place the new key cap on the exposed key switch and press down firmly to lock the key cap in the new location.

Hardware and Software Compatibility

The Avant Series keyboards are compatible with the majority of hardware and software available on the market today. For more information about compatibility issues, please read the following:

Hardware Compatibility

The Avant is compatible with virtually all standard AT type 80386, 80486, Pentium, Pentium II/III and Xeon systems.

This keyboard will not function with an XT/8088 type computer including the original IBM PC and IBM XT systems.

The Avant keyboards rely on the inclusion of a standard keyboard decoder chip in your computer system. As a result, systems or notebooks using non-standard decoder chips may have compatibility issues.

Software Compatibility

The keyboard is compatible with most brands and versions of software on the market. Note that the special Windows keys may not be recognized by your applications.

Software not written for enhanced keyboards like the Avant may not operate correctly. Specifically, certain older macro programs may not operate properly. This type of software may cause problems even when used with industry standard enhanced keyboards. This is not a problem with the keyboard. We recommend that you contact the software supplier and request an upgrade for the problem software.

Certain computer systems that use BIOS routines that interact with the keyboard do not allow the keyboard to transmit certain information to the computer. This will cause very slow uploads and downloads to the keyboard or not allow uploads or downloads to the keyboard.

Operating System Compatibility

The utilities supplied with the Avant were created to work with Microsoft Windows 3.x, Windows for Workgroups version 3.11 and Microsoft Windows 9x. The programming utilities will not operate with Windows NT, IBM OS/2™, or UNIX.

To use the programming features on a Windows NT, IBM OS/2™, or UNIX system, please program the keyboard to your desired settings on a system running Windows 3.x or Windows 9x. Once programmed, you can then move the keyboard. All of the programming stays resident in the keyboard and will not be effected by a change in the operating system.

Known Compatibility Issues

Notebook and Portable Computers

Notebook computers already contain a keyboard. The Avant programming utility may not correctly recognize the keyboard on these systems. A possible remedy is to:

- Create all macros in Windows 3.x or Windows 9x and save the layout to a file.
- Exit completely from Windows. If you are running Windows 9x you must shutdown the computer by choosing "Restart the computer to MS-DOS mode."
- Use the AVANTDWN.EXE utility to program the keyboard. This utility is located in C:\Avant directory by default. To use the program run AVANTDWN with the file you saved previously as the object.

Example:

AVANTDWN mylayout.kbd

Where "mylayout.kbd" is the keyboard layout you saved while in Windows.

If this procedure is not successful, program the keyboard on another computer and move the programmed keyboard to the notebook system.

Avant Utilities Installation

Note: Before installing this program, close all open applications.

The Avant Utilities Disk is a single 3.5" diskette containing an installation program called "SETUP.EXE".

Windows 3.x Installation

1. From the Program Manager in Windows, select File, then Run.
2. Load the program by typing A:\cvsetup or B:\cvsetup. This process takes about two or three minutes.
3. Choose the proper Avant Keyboard model: Stellar or Prime.
4. Choose the type of Mouse that you are using: PS/2 or Serial.
5. Avant icons will appear on your screen.
6. If required by the installation program, restart your computer.
7. Click on the icon that designates your keyboard.
8. Select the on-line help file for more detailed instructions and information.

Windows 9x Installation

1. From the Program Manager in Windows, select Start, then Run.
2. Load the program by typing A:\cvsetup or B:\cvsetup. This process takes about two or three minutes.
3. Choose the proper Avant Keyboard model: Stellar or Prime.
4. Choose the type of Mouse that you are using: PS/2 or Serial.
5. Avant icons will appear on your screen.
6. If required by the installation program, restart your computer.
7. Click on the icon that designates your keyboard.
8. Select the on-line help file for more detailed instructions and information.

Troubleshooting and Technical Support

If you experience problems or questions setting up or using your Avant keyboard, please refer to the on-line help located in the Avant utilities program. More comprehensive information is available there that will assist you in resolving the problem quickly on your own. In many instances problems that arise are minor and can be resolved easily.

If you are unable to resolve the problem, contact CVT for technical support. For technical support worldwide, call 612-478-6446.

Please have the following information ready when you call CVT: computer manufacturer, computer model number, computer type & operating system version.

Software Overview

Use the software in the Avant Utilities to customize your keyboard. The utilities allow for fast reprogramming of keys called 'remapping' or the creation of macros to automate repeated or common tasks. The user accessible files are:

AVANTSER.EXE	For programming the keyboard when your system uses a serial mouse.
AVANTPS2.EXE	For programming the keyboard when your system uses a PS/2 mouse.
AVANTDWN.EXE	DOS utility that sends a keyboard layout or macro program to the keyboard.
README.TXT	Late breaking news about the key-board and the utilities.

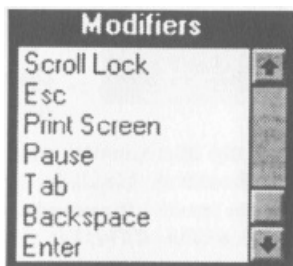
After Installation

After installing the software on your system, choose the icon labeled 'Avant Serial' if your system uses a serial mouse or the icon 'Avant PS/2' for systems with a PS/2 mouse. Systems using other than a serial or PS/2 mouse should try the 'Avant Serial' utility.

Quick Tutorial

Remapping Keys

Remapping refers to changing a single key to another function. For example, if you never use the L key but use the backspace often you can make the keyboard send a backspace every time the L is pressed. Follow these steps.



- Click on the L key as displayed on the screen.
- The L on the key turns red to show it is selected.
- Under Modifiers, use the arrows on the selection box to move down until BACKSPACE is shown. Click on BACKSPACE.
- Click on ACCEPT button.
- The L key on the display now shows that it is BACKSPACE.
- Press DOWNLOAD to send the new program to the keyboard. Carefully follow the directions on the screen.
- Now close the Avant Utility. When you are asked if you wish to save changes respond NO.
- Try any word processor. You will find that every time you press the L key a backspace will be generated instead.

As you will need to use the L key in the future, let's switch the keyboard back to normal:

- Start the Avant utility applicable to your system.
- Click on Clear ALL.
- Now press the Download button.
- After the download process is complete, your keyboard is back to normal. The L key is an L key again!

Creating a Macro

A macro helps automate common tasks by turning a single key press into multiple key presses. The following example illustrates a macro that quickly enters your name with a single key combination.

If the Avant Utilities have not been installed, install them from the diskette. Refer to the Avant Utilities Installation section for instructions.

Start the version of the software applicable to your system. Choose the serial version for systems using a serial mouse or the PS/2 version for systems using a PS/2 style mouse. Use the serial version for systems using any other style of mouse or digitizer.

When asked if you wish to upload from the keyboard, choose yes. The program reads the current configuration and any existing macros from the keyboard.

The full keyboard layout appears on the screen in Remap mode.

Change to Macro mode by clicking the radio button in the upper right of the screen.



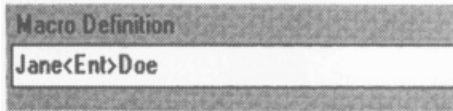
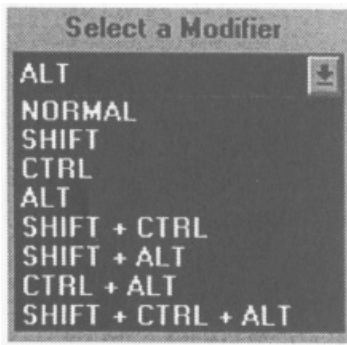
The program switches to Macro mode and the display is updated.

The first step in programming a macro is to select the key combinations to use to begin the macro. Most keys on the keyboard can be used. The most popular keys to use are easy to remember combinations. Here we will use the combination of the CTRL key and N key to create a name macro.

Click on the N key on the keyboard displayed on the screen.

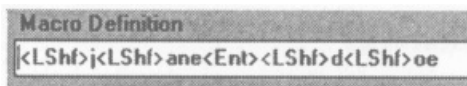
Choose CTRL under Select a Modifier at the bottom left of the program screen. This combination tells the program you wish to hold down the CTRL key and then, while still holding down the CTRL key, press the N key.

Now that the key combination has been selected, tell the program to change the result of this key combination. Press the EDIT button.



The cursor jumps to the box labeled Macro Definition. Type your name, using the keyboard, or type in a fictitious name like Jane Doe. Include any capitalization or punctuation you would normally use. If you wish to put your name on two separate lines, type in your first name then click on the Enter key on the displayed keyboard, then type in your last name. Notice that the macro program shows the enter key with the < and > symbols surrounding the descriptions. All special keys use this method of description.

Click on the Accept button.
Your macro is now recorded.



To review what is recorded, click on the N key and select CTRL under the modifiers. The macro description is displayed. The utility automatically adds any special key description necessary to emulate what is typed. The program will add shift indicators before and after any capitalization to exactly emulate the way you typed.

Program the keyboard with the new macro. Click on the download button. After download is complete, please exit the utility.

After downloading your macro, you must turn on the keyboard's Macro Mode to use your macro. Press and release the right CTRL key (4) times. Now, press the left Shift key and while holding it down press the 1 key (near the Escape key). Release both keys. Now press the E key. The LED on the UP ARROW will then illuminate to show that Macro Mode is enabled.

Try your macro in a word processing program by holding the CTRL key down while pressing the N key. The text you entered in the macro will appear.

To exit the keyboard's Macro Mode, press and release the right CTRL key (4) times. Now, press the left Shift key and while holding it down press the 1 key (near the escape key). Release both keys. Now press the D key. The LED on the UP ARROW will then turn off to show that Macro Mode is disabled.

Clearing Keyboard Macros

To clear the macro from the keyboard, start the Avant utility.
Switch the program to Macro Programming.
Click on the button labeled Clear All.
Download the new program to the keyboard.
All macros are removed from the keyboard.

Special Key Combinations

Important key combinations for use with the Avant keyboard:

Reset to Factory Settings

Press and hold the <Escape> key while turning on your system. Use this function the first time you connect the keyboard.

Turn On Macro Mode

Macro mode must be turned on to use any macros programmed. Press and release the right <Ctrl> key (4) times. Now press the left <Shift> key and, while still holding this key, press the <I> key (located by the Escape key). Release both keys, then press the <E> key. The LED on the <UP ARROW> key will then illuminate to show that Macro Mode is enabled.

To exit the keyboard's Macro Mode, press and release the right <CTRL> key (4) times. Now, press the left <Shift> key and, while still holding this key, press the <I> key (near the Escape key). Release both keys, then press the <D> key. The LED on the <UP ARROW> will then turn off to show that Macro Mode is disabled.

Reset Keyboard

To clear the keyboard memory while in an application, press the right <Ctrl> key (4) times. Now press the left <Shift> key and, while still holding this key, press the <1> key (located by the Escape key). Release both keys, then press the <X> key. Your keyboard is now reset to the factory default settings.

CAUTION: Resetting your keyboard will clear all memory. All macro and re-mapping changes will be erased.


Manual Remap

To start and end manual remap of keys, press the right <Ctrl> key (4) times in a row. Then press the Left <Shift> Key and, while still holding this key, press the <I> key (located by the Escape key). Release both keys, then press the <R> key. The LED's will flash fast while waiting for the first "from" key in the move sequence. While in manual remap, remap keys by pressing a key (from key) and then pressing the key you wish to change the first key to. Example: Press the <P> key then press the <H> key. The <P> will still be a <P> and the <H> will now be a <P>. Press the right <Ctrl> key (1) time to exit manual remap.

Software Error Codes

0	File Open/Read Error or Invalid file format
2	Error reading macro key
3	Error reading macro key status
4	Error reading macro descriptor
5	Error reading macro length
6	Error reading macro keystrokes
10	No ACK for repeat rate command
11	No ACK for repeat rate data
12	No ACK for validation time command
13	No ACK for validation time data
14	No ACK for Comma/Period lock command
15	No ACK for Comma/Period lock data
16	No ACK for LDM Command
17	No ACK for LDMO Data
18	No ACK for LDM I Data
22	Bad return code for remap position
23	Bad return code for remap status
24	Bad return code for remap key
30	No ACK for macro program command
31	No ACK for macro position
32	No ACK for macro key
33	No ACK for macro status
34	No ACK for macro keystroke program command
35	Bad return code for macro data acknowledge
36	Bad return code for ending macro programming

Documents / Resources

	Avant Mechanical Programmable Keyboards [pdf] Instruction Manual Mechanical Programmable Keyboards, Programmable Keyboards, Keyboards
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References

- [User Manual](#)

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