

OmniKey[®]

USER'S GUIDE



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Contents

PART 1. INSTALLATION AND CONFIGURATION	1
Introduction	1
Unpacking and Installation Overview	2
Unpacking the Keyboard	2
Connecting the Cable	3
Setting the DIP Switches	4
Setup for Type of Computer	5
Setup for Novell or Normal Stand-alone Configuration	6
Swapping the CAPS LOCK, CTRL, and ALT Keys (Excluding Amiga)	6
Swapping the BACKSLASH (\) Key and the ASTERISK (*) Key (Excluding Amiga)	7
Dvorak Keyboard Layout	8
101, 102, and Inverted-T ULTRA	8
ULTRA	9
For All Keyboards	9
"Sticky Keys" Feature	10
Pulling Key Caps	11
User-controlled Options	11
Rate Select	11
101, 102, and Inverted-T ULTRA Users	12
ULTRA Users	13
Top Row Special Function Keys for ULTRA and Inverted-T ULTRA Users	14
Comma/Period Lock	15
101, 102 and Inverted-T ULTRA	15
ULTRA	15
Colon Lock	16
101, 102, and Inverted-T ULTRA Users	16
ULTRA Users	16
Operating Instructions	16
Print Screen Function	17

True N-key Rollover	17
Optional European/ International Layouts	17
Optional OmniConfig Utilities Software	17
The ULTRA OMNI Key	19
Setting the Keyboard Angle	19
Using the OmniKey Keyboard	19
Troubleshooting	19
Hardware and Software Compatibility	21
Keyboard Software Version	21
Hardware Compatibility	21
Software Compatibility	22
PART 2. KEYBOARD INSTRUCTIONS	23
Introduction	23
About the OmniKey Keyboard	23
Keyboard Layout	24
Using the OmniKey Keyboard	27
Using the Typewriter Keys	27
Using the Cursor-Control Keys	28
Using the Numeric Keypad	30
Using the Function Keys	31
Technical Specifications	32
Key Code Charts	34

PART 1. INSTALLATION AND CONFIGURATION

Introduction

Congratulations on your purchase of the OmniKey keyboard, which is designed for use with all Northgate computers (286, 386, and 486), PC, XT, AT, and PS/2 computer systems and 100% compatibles (excluding the PS/2 model 25).

This manual covers four OmniKey keyboards: the OmniKey/101, OmniKey/102, OmniKey/ULTRA, and OmniKey/Inverted-T ULTRA. For the most part, procedures will be the same for all keyboards. However, in some procedures, there will be slight variations. These differences are clearly marked throughout the manual.

The OmniKey keyboards give you unmatched performance and the following features:

- Standard typewriter layout
- Dvorak keyboard layout
- Full-stroke, audible-click key action
- User-adjustable keyboard speed
- 12 function keys arranged on the left of the keyboard (except 101)
- 12 function keys arranged across the top of the keyboard (ULTRA and 101 keyboards only)
- Caps lock, number lock, and scroll lock indicator lights
- Separate cursor-control and numeric keypads
- Switchable Asterisk (*) and Backslash (\) key functions
- Comma/Period lock function
- Colon lock function

- User-controlled options including: Rate Select, Top Row Special Function (SF) keys, Comma Period Lock, and Colon Lock
- True N-key rollover - Allows you to press and hold any number of keys and the last key pressed will repeat on the screen
- Many optional European/International keyboard layouts
- DIP switches located conveniently on the top side of the keyboard.

Unpacking and Installation Overview

You will need to complete the following six steps to install your OmniKey keyboard.

1. Unpack the keyboard.
2. Turn the computer off and plug the keyboard cable in the proper connectors.
3. Check and (if necessary) set the keyboard DIP switches.
4. Adjust the keyboard so it is at a comfortable angle.
5. Turn the computer on and start typing.
6. Set user-controlled options.

These steps are described in detail on the following pages.

Unpacking the Keyboard

1. Carefully unpack your keyboard as you would any other piece of electronic equipment.
2. Store the packing material in a safe place. It is required if you return the keyboard and it is very useful for repacking if you move.

Connecting the Cable

1. Turn your computer off. If you haven't already disconnected your old keyboard, do so now.
2. Refer to the illustration below. Plug the 6-pin connector on the new cable into the hole on the back of your keyboard.

Note: Don't force the cable plug into a connector. The cable will fit into the connector one way only. If it doesn't fit easily, the cable plug is not properly oriented.

3. Plug the other end of the cable into the computer. Don't turn the computer on until you have checked and set the DIP switches. (See the next section.)

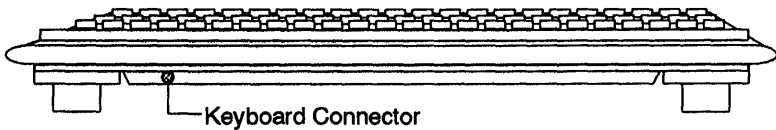


Figure 1. Rear view of OmniKey keyboard. Plug cable into round hole. Plug the other end of the cable into your computer. Clip the keyboard cable into the notch on the back of the keyboard.

4. Clip the keyboard cable into the notch on the back of the keyboard to relieve stress on the cable.

Setting the DIP Switches

The DIP switches are in a bank of numbered switches located under the Northgate logo plate on the front of the keyboard. Use your fingernail to lift up the switch cover from the left side.

Use these switches to set the following options:

- **Type of computer:**
 - PC/XT or 100% compatible
 - Northgate, AT, PS/2 (except PS/2 model 25), and 100% compatible
 - Tandy 1000SX, 1000TX
 - ATT WGS, ATT 6300, and 6300 plus
 - Amiga 2000 and 2500
- Novell ELS or Novell non-dedicated configuration
- Swapping the location of CAPS LOCK, CTRL, and ALT key functions
- Swapping the BACKSLASH (\) and ASTERISK (*) keys
- Setting the keyboard for Normal or Dvorak layout
- Setting the CTRL, ALT, and SHIFT keys for Normal or "Sticky Keys" operation

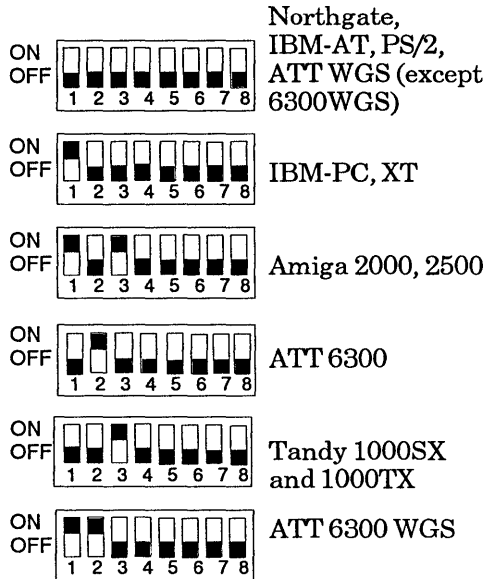
Because the DIP switches are small, it is easiest to use the top of a ball point pen or some other thin object to change their positions.

On the following pages, you will find instructions for each of the settings.

Setup for Type of Computer

Set DIP switches 1 through 3 for your type of computer, as shown below. Set switches OFF (□) or ON (■) as indicated.

Note: The black square indicates the raised part of the switch.

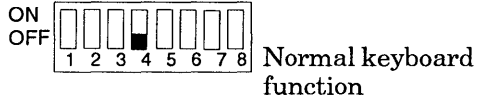
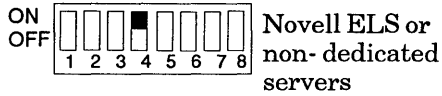


Note: Switch settings 1-3 are for type of computer only. Please refer to pages 6-10 for DIP switch settings 4-8.

Setup for Novell or Normal Stand-alone Configuration

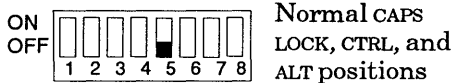
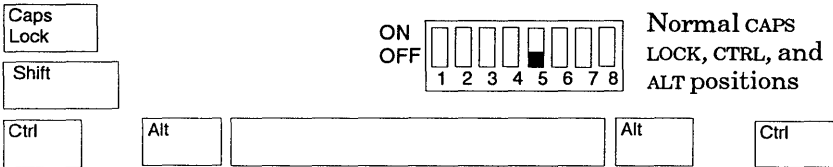
If you are using your computer as a Novell ELS or non-dedicated server, you must set DIP switch 4.

To set your keyboard for a normal, stand-alone configuration, set switch 4 *off*. For Novell non-dedicated or ELS servers, set switch 4 *on*. See illustrations below.

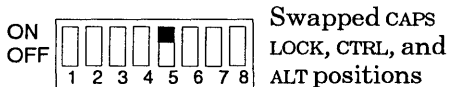
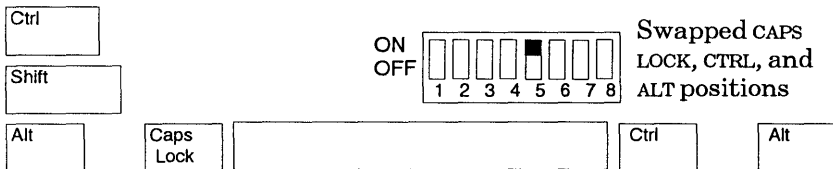


Swapping the CAPS LOCK, CTRL, and ALT Keys (Excluding Amiga)

The OmniKey keyboard allows you to swap the functions of the CAPS LOCK, CTRL, and ALT keys. This option is provided for people who prefer an alternate keyboard layout. The keyboard is initially set with DIP switch 5 *off*, for the keyboard layout shown below:



To swap CAPS LOCK, CTRL, and ALT, set DIP switch 5 *on* as shown below.



You must also remove the keys from the default positions as described below.

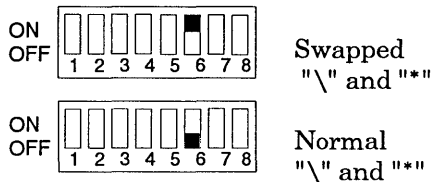
1. Remove the ALT and CTRL keys on the right side of the keyboard and swap their positions. Refer to *Pulling Key Caps* (page 11) for instructions.
2. Remove the CTRL, ALT, and CAPS LOCK keys from the left side of the keyboard. Place the original ALT key in the new position.
3. Place the special replacement CTRL and CAPS LOCK keys in the new positions and push them into place.

You cannot remove the original CAPS LOCK, CTRL key caps and replace them in the new positions. The key caps are designed for specific positions on the keyboard and may not fit properly in other locations.

Swapping the BACKSLASH (\) Key and the ASTERISK (*) Key (Excluding Amiga)

The OmniKey keyboards (except the 101) allow you to swap the locations of the backslash (\) key and the asterisk (*) key. This feature is provided for people who prefer the (*) key next to the right SHIFT key and the (\) key between the right CTRL and ALT keys.

Set DIP switch 6 as shown below.



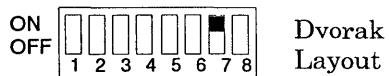
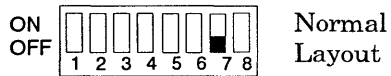
After setting DIP switch 6 (*on*), you must also remove and swap the key caps from the (\) key and the (*) key. Refer to *Pulling Key Caps* (page 11).

Dvorak Keyboard Layout

If you ordered Dvorak key caps, you may set your keyboard to one of three Dvorak layouts: Standard, Left-hand, or Right-hand. The Left-hand and Right-hand layouts were designed for users who type with only one hand, or who have limited dexterity. For Left- and Right-hand layouts, the most frequently used keys are grouped under the hand used.

There are three ways to set your keyboard for a Dvorak Layout.

1. By turning DIP switch 7 *on*, as shown below, the keyboard can be reconfigured to the Dvorak Standard layout on boot-up.



2. To set your computer to automatically boot-up to Dvorak Right- or Left-hand layout, you must use the Omni Config Utilities software which is described on page 17.
3. You may also use the Option Select button (located under the Northgate logo plate, next to the DIP switches) to select any of the layouts, at any time, *regardless of the DIP switch 7 setting*. Refer to the steps below for your type of keyboard.

101, 102, and
Inverted-T ULTRA

To change to a Dvorak layout:

1. Press the Option Select button.
2. Press the PAUSE key.

3. Press the appropriate Function key for the layout you want. (Use the Function keys on the left side of your keyboard for all keyboards except the 101. Use the top row function keys for the 101.)

Key	Layout
F1	Normal "QWERTY"
F2	Dvorak Standard
F3	Dvorak Left-hand
F4	Dvorak Right-hand

ULTRA

To change to a Dvorak layout:

1. Press the SF Select button.
2. Press the appropriate *left side* Function key (from the table above) for the layout you want.

For All Keyboards

For all Dvorak layouts, you must also remove all of the typewriter key caps and replace them with the optional set of Dvorak key caps. You cannot remove the original key caps and replace them in the Dvorak positions. The key caps are designed differently for different rows on the keyboard and will not fit properly in other positions.

Refer to *Pulling Key Caps* (page 11) for instructions on removing and replacing key caps.

Refer to *Keyboard Layout* for illustrations of the Dvorak keyboard layouts (page 26).

"Sticky Keys" Feature

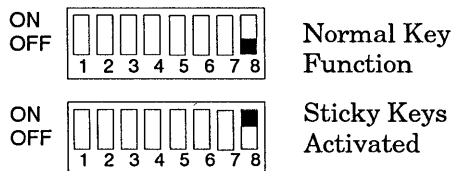
Some software functions require the user to press two or more key simultaneously. The Sticky Keys feature electronically locks down the SHIFT, CTRL, and ALT keys after they are pressed, to allow users who type with only one hand or who have limited dexterity to perform multiple key functions easily.

With Sticky Keys enabled, the SHIFT, CTRL, and ALT keys to the left side of the SPACE BAR lock down (when you press and release it) until any other key is pressed and released. For example, if you press the left SHIFT followed by two a's, the result will be "Aa". If you accidentally press SHIFT, CTRL, or ALT, press the same key again and the lock will release.

The SHIFT, CTRL, and ALT keys on the right side of the SPACE BAR act differently. If you press one of these keys, it will remain active until you press the same key again. For example, if you press the right SHIFT key followed by two a's, the result will be "AA".

To reset your computer with Sticky Keys enabled, you may press CTRL, then ALT, then DEL. (You may use CTRL and ALT keys on either the left or right side of the keyboard.)

Set DIP switch 8 (*on*) as shown below to activate the Sticky Keys feature.



Pulling Key Caps

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

1. Hold the puller by the plastic top.
2. Fit the tweezer arms over the key you want to remove.
3. 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.

User-controlled Options

In addition to the DIP switches, you can set the following options on your keyboard:

- Rate Select (pages 11-13)
- Top Row Special Function Keys (ULTRA users only) (page 14)
- Comma/Period Lock Function (page 15)
- Colon Lock Function (page 16)

Rate Select

The OmniKey keyboard includes a feature which allows the user to set the repeat rate, delay rate, and validation time of the keyboard's entry system. This feature operates only on Northgate and other IBM-style products. Amiga computers control these features with software.

The *repeat rate* is the speed at which a character is reentered when the key is held down. The *delay rate* measures how long the key must be held down before the character repeats. The *validation time* is how long a key must be held down before it registers being pressed.

**101, 102, and
Inverted-T ULTRA
Users**

To change the repeat rate:

1. Press the Option Select button located under the Northgate logo plate at the top of your keyboard.
2. Press the SCROLL LOCK key.
3. From the chart on the following page, press the appropriate Function key for the speed you want.

Note: Pressing ESC turns off the repeat function. With the repeat function disabled, you can press and hold a key and only 1 keystroke will be entered.

To change the delay rate:

1. Press the Option Select button located under the logo plate at the top of your keyboard.
2. Press the SCROLL LOCK key.
3. Hold down either SHIFT key and, from the chart on the following page, press the appropriate Function key for the desired delay rate.

To change the validation time:

1. Press the Option Select button (located under the Northgate logo plate at the top of your keyboard).
2. Press the SCROLL LOCK key.
3. Hold down either ALT key, and from the chart on the following page, press the appropriate Function key for the desired validation time.

ULTRA Users**To change the repeat rate:**

1. Press the RATE SELECT key.
2. Press a Function key (see chart below) for the desired repeat rate.

Note: Pressing ESC turns off the repeat function. With the repeat function disabled, you can press and hold a key and only one keystroke will be entered.

To change the delay rate:

1. Press the RATE SELECT key.
2. Hold down either SHIFT key and press a Function key (see chart below) for the desired delay rate.

To change the validation time:

1. Press the RATE SELECT key.
2. Hold down either ALT key and press a Function key (see chart below) for the desired validation time.

The following chart shows the rate selections. The asterisks (*) signify the default values which are active each time you boot your computer.

Function Key	Repeat Rate (Characters/Sec.)	Delay (Sec.)	Validate (Sec.)
F1	.54	.20	.008*
F2	.84	.25	.104
F3	1.00	.30	.280
F4	3.00	.38	.456
F5	5.00	.42	.632
F6	10.90*	.50*	.800
F7	15.60	.60	.976
F8	20.80	.75	1.152
F9	25.00	.90	1.328
F10	42.70	1.00	1.504
F11	63.00	1.50	1.680
F12	125.00	1.85	1.850
ESC	Function Disabled	N/A	N/A

Top Row Special Function Keys for ULTRA and Inverted-T ULTRA Users

Top row Special Function keys (SF1-SF12) are a standard feature of the OmniKey/ULTRA and Inverted-T ULTRA keyboards. SF keys normally perform a standard function keystroke. You can modify the SF keys to perform a combined keystroke of either a SHIFT, CTRL, or an ALT + Function key, or the normal key function (same as the left Function keys).

This feature is useful if you use software packages that use combined keystrokes to perform operations. For example, if your software package frequently requires you to press CTRL + Function key, you can configure your SF keys to perform a CTRL + Function key keystroke.

Inverted-T Ultra

To change the key functions to SHIFT, CTRL or ALT + Function key, or normal key function:

1. Flip up the Northgate logo plate and press the Option Select button.
2. Press the PAUSE key.
3. Press SHIFT, CTRL or ALT for a combined keystroke, or ESC for normal key function.

ULTRA

To change the key functions to SHIFT, CTRL or ALT + Function key, or normal key function:

1. Press the SF SELECT key.
2. Press SHIFT, CTRL or ALT for a combined keystroke, or ESC for normal key function.

After selecting the desired combined key function, all the SF keys will have the same combined key format. For example, if you select the ALT key as described above, SF1-SF12 will all produce an ALT + the corresponding Function key keystroke.

Refer to the OmniConfig Utilities section (page 17) for information on setting the SF keys automatically at boot-up.

Comma/Period Lock

When you set the Comma/Period Lock, the Period/Greater than (.)> key locks so it always sends a period, and the Comma/Less than (<,) key locks so it always send a comma whether or not the SHIFT key is pressed.

The Comma/Period Lock feature is useful if you rarely use < or > symbols. Enable Comma/Period Lock to eliminate typos that occur if you hold down the SHIFT key and try to type a period or comma (like U>S>A> when you meant to type U.S.A.).

101, 102 and Inverted-T ULTRA

Flip up the Northgate logo plate and press the Option Select button. Press the PRINT SCREEN key. Comma/Period Lock will stay active until the computer is turned off or until you press the Option Select button and the PRINT SCREEN key again.

For the 102 and Inverted-T ULTRA, once this feature is activated, you must use the < and > keys between the left CTRL and ALT keys to type < and >, instead of the (<,) and (>,) keys.

To turn off the Comma/Period Lock Feature, press the Option Select button and COMMA/PERIOD LOCK, or reboot the computer.

ULTRA

Press the Comma/Period Lock key to lock the period (.) and comma (,) keys. Once this feature is activated, you must use the < and > key located between the left CTRL and ALT keys to type < and >, instead of the (<,) and (>,) keys. To turn off this feature, press the Comma/Period Lock key, or reboot the computer.

Refer to the OmniConfig Utilities section (page 17) for information on setting the Comma/Period Lock function automatically at boot-up.

Colon Lock

When the Colon Lock feature is enabled, the colon/semi-colon (;) key will lock so it always sends a colon whether or not the SHIFT key is pressed. Once Colon Lock is turned on, you will lose the semi-colon (;) function until you turn the Colon Lock off again or reboot the computer.

101, 102, and Inverted-T ULTRA Users

Lift the Northgate logo plate on the front of your keyboard and press the Option Select button, then press SHIFT+PRINT SCREEN. This will lock the colon key, so the semi-colon will no longer be accessible with this key. To turn off this feature, press the Option Select button and SHIFT+PRINT SCREEN again.

ULTRA Users

Press and hold down either SHIFT key and press Comma/Period Lock. This will lock the colon key so the semi-colon (;) will no longer be accessible with this key.

To turn off the Colon Lock feature, reboot your computer.

Operating Instructions

The OmniKey keyboard works like any other computer keyboard. In addition, it has the following special functions:

- Special print screen keystroke
- True N-key rollover
- Optional European/International layouts
- Optional OmniConfig Utilities Software
- OMNI key (ULTRA users only)

Print Screen Function

The PRINT SCREEN key performs a normal PRINT SCREEN function when you press it twice. (This feature prevents you from accidentally triggering a screen print if you bump the PRINT SCREEN key.) All other functions accessed by this key are performed normally. For example, to access SYS REQUEST functions, press ALT + PRINT SCREEN.

Note: The SYS REQUEST key is used by some terminal emulation software to request access to the system.

True N-key Rollover

This feature allows you to press any number of keys and the last key pressed and held will still appear on the screen. For example, if you press and hold A, press another key, the new key will now repeat on the screen. With N-key rollover, the last key pressed will be entered regardless of how many keys you are holding down.

Optional European/ International Layouts

Many international versions of the OmniKey keyboard are available. Call your Northgate sales representative for more information.

Optional OmniConfig Utilities Software

This optional software allows you to set 14 different keyboard features. By changing features with the software, you will not have to reset them every time you turn the computer on.

There are two ways to get the OmniConfig software. You can download the software from CompuServe or you can order the OmniConfig Keyboard Utilities Software directly from Northgate.

**To Order From
Northgate**

Send \$7.95 (to cover duplicating, shipping and handling costs) to:

OmniConfig Software Offer
Northgate Computer Systems, Inc.
P.O. Box 59080
Minneapolis, MN 55459-0080

**Compuserve
Access**

To download the software from CompuServe, type GO NORTHGATE at any CompuServe "!" prompt. Download the file KBUTIL.EXE. Once you have downloaded the file and disconnected from CompuServe, go to the download directory of your communications software which now contains the utility. Type KBUTIL and press enter. This command will self extract the files for you and place them in the current directory.

Note: OmniConfig Utility Software will only work on AT-class machines (286, 386, and 486).

The ULTRA OMNI Key

The OMNI key in the middle of the cursor-control keypad produces the same keystroke as the 5 on the numeric keypad when NUM LOCK is *off*. This key is recognized as a programmable key by some software packages such as Word Perfect™.

Setting the Keyboard Angle

You can adjust the angle of the keyboard by pulling down the legs on the back. (See illustration below.)

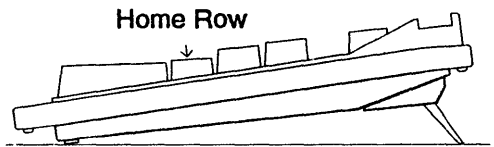


Figure 2. Side view of OmniKey keyboard with the legs pulled down.

Using the OmniKey Keyboard

Once the DIP switches and any other special changes are set, you may begin typing. Enjoy the feel of your new keyboard! If you haven't used a computer keyboard before, refer to *Keyboard Instructions* (page 23).

Troubleshooting

The most common problems with the OmniKey result from:

- Improperly connected or loose cable
- Incorrect DIP switch settings
- Strain on the cable

If your keyboard is not functioning properly, complete the following steps:

1. Turn off the computer.
2. Check the cable connections to make sure both ends of the cable are securely plugged into the connectors.

3. If your cable is being stretched, clip the keyboard cable into the notch on the back of the keyboard.
4. Check the DIP switches to be sure the switches are set properly for your type of computer and for your particular application (see pages 4-10).
5. Turn your computer on again and start typing.

If you have double-checked your cable connections and switch settings and your keyboard is still not functioning properly, please call the appropriate number below:

- If you purchased your keyboard as part of a Northgate computer system, call Northgate System Technical Support at 1-800-446-5037.
- If you purchased your keyboard *separately*, from Northgate, call Northgate Keyboard Technical Support at 1-612-943-8346.

Have the following information ready when you call Northgate: computer manufacturer, computer model number, computer type (XT, 286, 386, 486), keyboard part number (from the label on the back of the keyboard), and the revision level of firmware you are using (at the DOS prompt, press and hold both SHIFT keys and then press F8—a revision-level message will appear on the screen).

Hardware and Software Compatibility

The OmniKey is compatible with the great majority of hardware and software available on the market today. For more information about compatibility issues, please read the following:

Keyboard Software Version

You can determine the version of your keyboard software when you are at the DOS prompt by pressing and holding down both SHIFT keys and the F8 key.

Hardware Compatibility

The OmniKey is compatible with virtually all standard 8088, 80286, 80386, and 80486 systems, ATT 6300, 6300 PLUS, and ATT WGS systems, Tandy 1000SX and 1000TX systems, and Commodore Amiga 2000 and 2500.

There may be a compatibility problem with some older PC systems, including the original 80286 systems, which were issued with an 84-key keyboard. The ROM BIOS in these early PCs, 8088 and 80286 systems will not fully support the enhanced OmniKey keyboard. The only way to fix this problem is to change the ROM BIOS of the system. This is a problem with the ROM BIOS, not with the keyboard.

With IBM XTs and compatibles, it is possible for the NUM LOCK and/or CAPS LOCK key to get out of sequence, so the indicator light is lit, but the NUM LOCK or CAPS LOCK function is not on. This is a problem with XT architecture, not with the keyboard. If this occurs, hold down one SHIFT one ALT key and press NUM LOCK or CAPS LOCK (which ever is appropriate for your situation). This will return the NUM LOCK or CAPS LOCK function to the proper synchronization.

Software Compatibility

Some software was not written for or upgraded to allow use of enhanced keyboards like the OmniKey. Specifically, certain macro programs may not operate properly. These types 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. Request an upgrade for the program that is causing the problem.

PART 2. KEYBOARD INSTRUCTIONS

Introduction

This section is written for people who are new to using a computer keyboard. It explains how to get the most out of your OmniKey keyboard. If you are an experienced computer user, you will know most (if not all) of the information in this part of the manual. However, you may be interested in the section that explains how the function keys can be used to enter MS-DOS commands.

Before you start using your Northgate keyboard, make sure you have installed it properly. Refer to the sections on Connecting the Cable (page 3), and Setting the DIP Switches (pages 4-10).

About the OmniKey Keyboard

Your new OmniKey keyboard represents state-of-the-art keyboard technology. It has been widely praised for its full-stroke range of motion and its tactile feedback caused by the audible click.

Press a few of the keys on the keyboard. Notice that the range of motion of the keys is firm and responsive. The slight click you hear when each key is pressed is a mechanical sound, not an electronic beep.

The responsive OmniKey keyboard will make it easy to master the new skill of using a computer keyboard.

Keyboard Layout

This section describes the physical layout of the OmniKey keyboard. More detailed explanations of the functions of the keys are given later. The illustrations on pages 25-26 show the layouts of the OmniKey Keyboards.

The keys are arranged in four major groups:

- The typewriter keys. Use these keys to type letters, numbers and special characters. Some special keys like TAB, ESC, and CAPS LOCK are also found here.
- The cursor-control keypad. Use these keys to move the cursor (the blinking block that indicates your location on the computer screen) from place to place on the screen.
- The numeric keypad. You can use this section of the keyboard in two ways:
 - 1) With NUM LOCK *on*, you can use these keys to enter numbers. (This is especially useful if you are used to entering numbers on a calculator keypad.)
 - 2) With NUM LOCK *off*, you can use these keys to control the cursor.
- The function keys. Use these keys to enter special information, access certain functions, and to control operations. These functions depend on the software you use.

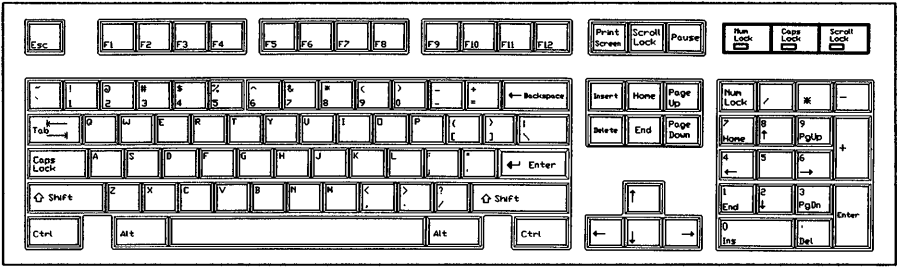


Figure 3. Northgate OmniKey/101 Keyboard Layout

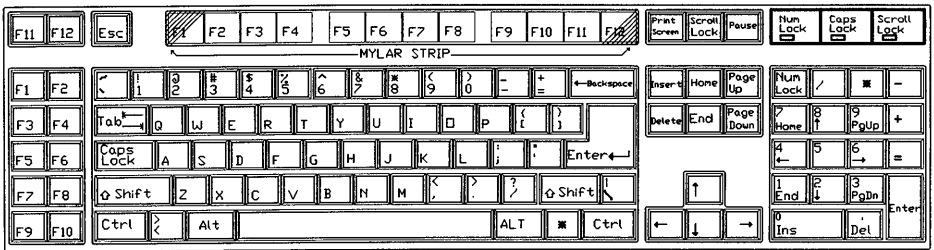


Figure 4. Northgate OmniKey/102 Keyboard Layout

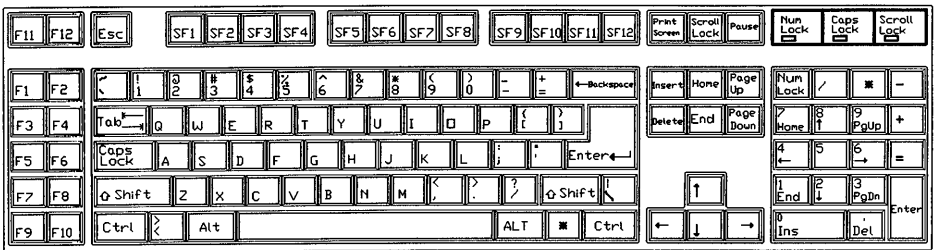


Figure 5. Northgate OmniKey/Inverted-T ULTRA Keyboard Layout

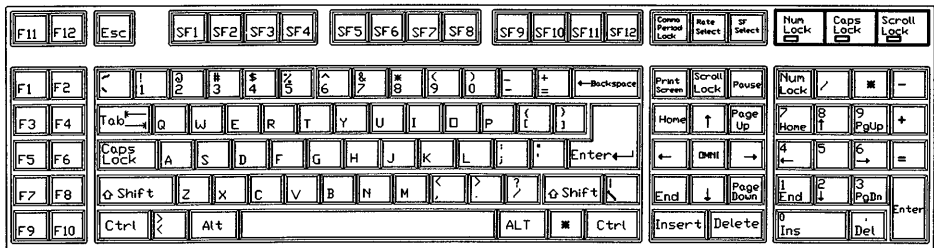


Figure 6. Northgate OmniKey/ULTRA Keyboard Layout

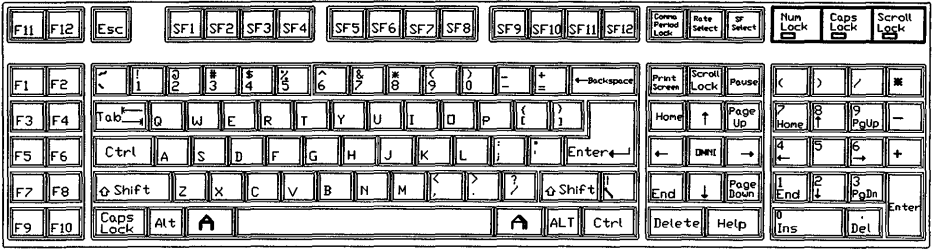


Figure 7. Northgate OmniKey/ULTRA AMIGA Keyboard Layout

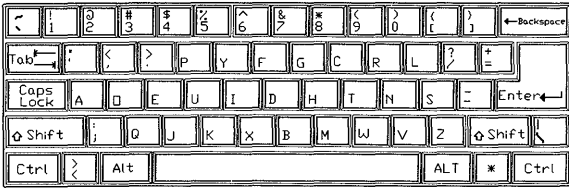


Figure 8. Dvorak Standard Keyboard Layout



Figure 9. Dvorak Right-Hand Keyboard Layout

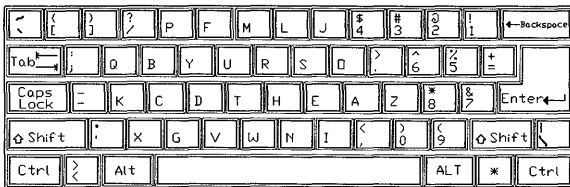


Figure 10. Dvorak Left-Hand Keyboard Layout

Using the OmniKey Keyboard

Computer keyboards work in conjunction with computer software. The best way to learn about your OmniKey keyboard is to use it with your software. However, many software packages lack good documentation; therefore, the following information can help you understand how to get the most out of your keyboard.

Using the Typewriter Keys

Using the typewriter keys is very similar to using a typewriter. One important difference is the computer keyboard keys are repeating. Notice if you hold a key down, the character will repeat itself until you let the key up. To adjust this rate, see *Key Repeat Rate* on pages 11-13. Some of the typewriter keys have special functions:

ESC - is used for a variety of purposes by various software packages. Consult the documentation of the software you are using for information about ESC.

CAPS LOCK - Locks the keyboard so only capital letters are entered when an alphabetic key is pressed. CAPS LOCK is a toggle key. Press it to turn CAPS LOCK on; press it again to turn CAPS LOCK off. CAPS LOCK differs from the Shift Lock on a typewriter. It locks only the 26 letter keys in the capitals mode. Number keys, punctuation keys, and all other special keys are not affected by CAPS LOCK.

SHIFT - The SHIFT keys on either side of the keyboard work like the Shift keys on a typewriter. Use SHIFT to enter upper case letters or the upper symbols on the number and punctuation keys. When CAPS LOCK is on, SHIFT acts as an un-shift, and lower case letters will be entered.

BACKSPACE - The BACKSPACE serves as a reverse delete. It works like the Backspace key on a typewriter, except it deletes the characters as the cursor moves backward across the screen.

ALT and **CTRL** - Many computer programs use these two keys to enter special functions. Often they are used in conjunction with another key. The combined keystroke will have a special meaning for the software. Consult the documentation from your applications programs for information on how these keys will be used.

TAB - With many software packages, you will use the TAB key to perform a tab function similar to the tab on a standard typewriter.

Using the Cursor-Control Keys

The keys in the cursor-control keypad allow you to move the cursor around on the computer screen. The functions of the cursor-control keys depend on the software you are using.

PRINT SCREEN - With many software packages, the PRINT SCREEN function is used to print a screen image on the printer. **With the OmniKey keyboard, you must press PRINT SCREEN twice to produce a normal Print Screen function.** Press PRINT SCREEN while holding down the ALT key to send a System Request message to the computer. Notice the word "ALT" and the *Sys Rq* label on the PRINT SCREEN key are printed in blue. This color coding is a special feature of the OmniKey keyboard to help you to remember that *Sys Rq* is made by pressing ALT + PRINT SCREEN.

Note: *Sys Rq* is used by some terminal emulation software to request access to the system.

SCROLL LOCK - With many software packages, SCROLL LOCK disables the cursor-control keys. SCROLL LOCK is a toggle switch. Press it once to turn on SCROLL LOCK; press it again to turn off SCROLL LOCK. When SCROLL LOCK is on, the indicator light is lit.

PAUSE - With some software packages, pressing this key will stop the contents of the screen from scrolling until another key is pressed. If you press CTRL + PAUSE you will send a Break message to the computer. This function is used in many software packages as a signal to stop processing. Notice the color coding for this function; both the CTRL key and the *Break* label are red.

CURSOR Keys (← ↑ → ↓) - Many software packages use these keys to move the cursor. Each time you press a CURSOR key, the cursor will move one space in the direction of the arrow.

PAGE UP & PAGE DOWN - Many software packages use these to move the cursor up or down an entire screen or to the top or bottom of a page.

HOME & END - Many software packages use the HOME key to move the cursor to the beginning of a file and the END key to move to the file's end.

INSERT - Many word-processing and spreadsheet software packages use INSERT to switch between *typeover* and *insert* modes. In typeover, each keystroke you make will replace the character at the cursor. In insert mode, the keystrokes you make will push the existing characters to the right.

DELETE - Many software packages use this key to delete the character at the cursor location.

Using the Numeric Keypad

The numeric keypad has two functions:

- If NUM LOCK is **on**, the numeric keypad is used to type numbers.
- If NUM LOCK is **off**, the keypad is used to control cursor movement.

NUM LOCK - Press NUM LOCK to turn on the NUM LOCK function. Press it again to turn off NUM LOCK. When NUM LOCK is on, the Num Lock indicator light will be lit. Refer to the following chart to see how NUM LOCK affects the function of the keys in the numeric keypad. Refer to *Using the Cursor-Control Keys* (page 28) for more information.

Key	Num Lock Setting	
	On	Off
7/HOME	7	Home
8/↑	8	Up
9/PAGE UP	9	Page Up
4/←	4	Left
5	5	Does not function with most software
6/→	6	Right Cursor
1/END	1	End
2/↓	2	Down
3/PAGE DN	3	Page
0/INS	0	Insert
./Del	.	Delete

Note: The other keys on the numeric keypad (ENTER, +, =, -, *, and /) are not affected by the NUM LOCK key. The ENTER key will always perform an ENTER function. In most software packages the other keys perform like their counterparts in the typewriter section of the keyboard.

Using the Function Keys

Many programs use the function keys in conjunction with other keys to perform special operations. One common use of three of the function keys is entering MS-DOS commands. Refer to the list below:

- F1** Press this key. It will redisplay one character of the previously entered DOS command each time it is pressed.
- F2** Press this key and then a character from your previously entered DOS command. The previously entered command, up to the character you have entered, will be redisplayed.
- F3** Press this key. The entire previously entered command will be redisplayed.

Technical Specifications

Keyboard

Voltage	5 VDC % .1 VDC, 200mA
Operating Environment	5° C to 38° C (41° F to 101° F)
Environment	20% to 80% relative humidity, non-condensing

Switches

Maximum Contact Rating	12 VDC, 100mA
Type of Contact	Mechanical Contact
Key Depression Force	70 grams ±25
Contact Resistance	Maximum 1 Ohm
Contact Bounce	5 Msec. Maximum
Operating Travel	3.5mm ±.5mm (.138 in.)
Operating Life	20 million operations minimum
Operation Temperature	-20° C to 60° C (-4° F to 140° F)
Storage Temperature	-30° C to 70° C (-22° F to 158° F)

Packing Specifications

102, Inverted-T ULTRA, and ULTRA

Length	525.46mm	20 5/8 in.
Depth	204.79mm	8 1/16 in.
Height (feet down)	47.63mm	1 7/8 in.
Height (feet up)	66.68mm	2 5/8 in.
Weight	2.32kg	5 lbs. 3 oz.

101

Length	473.08mm	18 5/8 in.
Depth	200.03mm	7 7/8 in.
Height (feet down)	50.80mm	2 in.
Height (feet up)	73.03mm	2 7/8 in.
Weight	1.99kg	4 lbs. 12 oz.

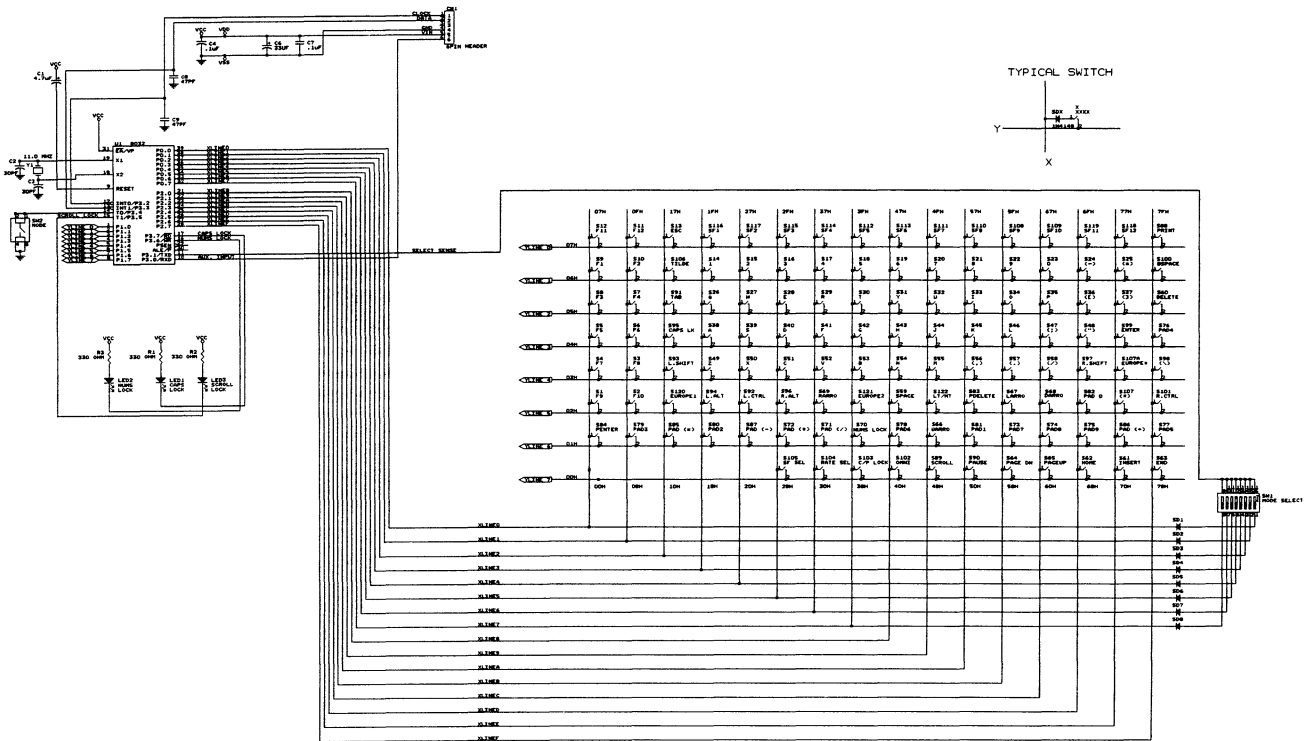


Figure 11. OmnimKey Keyboard Schematic

Key Code Charts

AT Code Set 1. For AT/XT & Compatibles, ATT 6300 & 6300+

Legend	Make Code	Break Code	Legend	Make Code	Break Code
.	034H	0B4H	L SHIFT	02AH	0AAH
;	027H	0A7H	J	024H	0A4H
/?	035H	0B5H	L ALT	038H	0B8H
"'	028H	0A8H	L	026H	0A6H
=+	00DH	08DH	L CTRL	01DH	09DH
\	02BH	0ABH	M	032H	0B2H
-_	00CH	08CH	N	031H	0B1H
0	00BH	08BH	NUMS	045H	0C5H
1	002H	082H	O	018H	098H
2	003H	083H	P	019H	099H
3	004H	084H	PAD *	037H	0B7H
4	005H	085H	PAD 3	051H	0D1H
5	006H	086H	PAD 9	049H	0C9H
6	007H	087H	PAD 0	052H	0D2H
7	008H	088H	PAD -	04AH	0CAH
8	009H	089H	PAD DEL	053H	0D3H
9	00AH	08AH	PAD 8	048H	0C8H
A	01EH	09EH	PAD 2	050H	0D0H
B	030H	0B0H	PAD 5	04CH	0CCH
BKSPACE	00EH	08EH	PAD 4	04BH	0CBH
C	02EH	0AEH	PAD 1	04FH	0CFH
CAPS	03AH	0BAH	PAD 6	04DH	0CDH
COMMA	033H	0B3H	PAD 7	047H	0C7H
D	020H	0A0H	PAD +	04EH	0CEH
E	012H	092H	Q	010H	090H
ENTER	01CH	09CH	R SHIFT	036H	0B6H
ESC	001H	081H	R	013H	093H
F	021H	0A1H	S	01FH	09FH
F1	03BH	0BBH	SCROLL	046H	0C6H
F10	044H	0C4H	SPACE	039H	0B9H
F11	057H	0D7H	T	014H	094H
F12	058H	0D8H	TAB	00FH	08FH
F2	03CH	0BCH	TILDE	029H	0A9H
F3	03DH	0BDH	U	016H	096H
F4	03EH	0BEH	V	02FH	0AFH
F5	03FH	0BFH	W	011H	091H
F6	040H	0C0H	X	02DH	0ADH
F7	041H	0C1H	Y	015H	095H
F8	042H	0C2H	Z	02CH	0ACH
F9	043H	0C3H	[{	01AH	0AAH
G	022H	0A2H]}	01BH	09BH
H	023H	0A3H	R ALT	0E0H 038H 0E0H 0B8H	
I	017H	097H	R CTRL	0E0H 01DH 0E0H 09DH	
K	025H	0A5H	PAD ENT	0E0H 01CH 0E0H 09CH	

Code Set 1 Exception Tables

1	2		3		4	
NUM LOCK	OFF	ON	ON		OFF	
SHIFT	OFF	ON	OFF		ON	
Keytop Legend	MAKE/BREAK	MAKE/BREAK	MAKE/BREAK		MAKE/BREAK	
INSERT	E0 52/E0 D2	E0 2A E0 52/E0 D2	E0 AA	E0 AA E0 52/E0 D2	E0 2A	
DELETE	E0 53/E0 D3	E0 2A E0 53/E0 D3	E0 AA	E0 AA E0 53/E0 D3	E0 2A	
L. ARROW	E0 4B/E0 CB	E0 2A E0 4B/E0 CB	E0 AA	E0 AA E0 4B/E0 CB	E0 2A	
HOME	E0 47/E0 C7	E0 2A E0 47/E0 C7	E0 AA	E0 AA E0 47/E0 C7	E0 2A	
END	E0 4F/E0 CF	E0 2A E0 4F/E0 CF	E0 AA	E0 AA E0 4F/E0 CF	E0 2A	
UP ARROW	E0 48/E0 C8	E0 2A E0 48/E0 C8	E0 AA	E0 AA E0 48/E0 C8	E0 2A	
DN ARROW	E0 50/E0 D0	E0 2A E0 50/E0 D0	E0 AA	E0 AA E0 50/E0 D0	E0 2A	
PAGE UP	E0 49/E0 C9	E0 2A E0 49/E0 C9	E0 AA	E0 AA E0 49/E0 C9	E0 2A	
PAGE DN	E0 51/E0 D1	E0 2A E0 51/E0 D1	E0 AA	E0 AA E0 51/E0 D1	E0 2A	
R. ARROW	E0 4D/E0 CD	E0 2A E0 4D/E0 CD	E0 AA	E0 AA E0 4D/E0 CD	E0 2A	
OMNI	E0 51/E0 D1	E0 2A E0 51/E0 D1	E0 AA	E0 AA E0 51/E0 D1	E0 2A	

Notes: 1) When Left Shift is held down, the 2A/AA Shift Make/Break is sent with the other scan codes. When Right Shift is held down, 36/B6 Make/Break is sent with the other scan codes. If both Shift keys are held down, both sets of codes are sent with the other scan codes.

2) Notice that column 2 gives both the OFF/OFF and ON/ON conditions for Num Lock and Shift.

SHIFT	OFF	ON
Keytop Legend	MAKE/BREAK	MAKE/BREAK
PAD /	E0 35/E0 B5	E0 AA E0 35/E0 B5 E0 2A
PAD =	0D/8D	AA 0D/8D 2A

Note: When Left Shift is held down, the 2A/AA Shift Make/Break is sent with the other scan codes. When Right Shift is held down, 36/B6 Make/Break is sent with the other scan codes. If both Shift keys are held down, both sets of codes are sent with the other scan codes.

Code Set 1 Exception Tables, Continued

CTRL	OFF	ON
Keytop Legend	MAKE	MAKE
PAUSE	E1 1D 45 E1 9D C5	E0 46 E0 C6

Note: This key does not repeat. All codes occur on the Make stroke of the key.

	KEY ALONE (BASE CODE)	KEY + SHIFT OR CTRL	KEY + ALT
Keytop Legend	MAKE/BREAK	MAKE/BREAK	MAKE/BREAK
PRINT SCREEN	E0 2A E0 37/E0 B7 E0 AA	E0 37/E0 B7	54/D4

AT Code Set 2 (IBM). For AT's & Compatibles

Legend	Make Code	Break Code	Legend	Make Code	Break Code
.	049H	0F0H 049H	K	042H	0F0H 042H
;	04CH	0F0H 04CH	L ALT	011H	0F0H 011H
/?	04AH	0F0H 04AH	L CTRL	014H	0F0H 014H
"	052H	0F0H 052H	L	04BH	0F0H 04BH
=+	055H	0F0H 055H	L SHIFT	012H	0F0H 012H
\	05DH	0F0H 05DH	M	03AH	0F0H 03AH
-	04EH	0F0H 04EH	N	031H	0F0H 031H
0	045H	0F0H 045H	NUMS	077H	0F0H 077H
1	016H	0F0H 016H	O	044H	0F0H 044H
2	01EH	0F0H 01EH	P	04DH	0F0H 04DH
3	026H	0F0H 026H	PAD 0	070H	0F0H 070H
4	025H	0F0H 025H	PAD 7	06CH	0F0H 06CH
5	02EH	0F0H 02EH	PAD 3	07AH	0F0H 07AH
6	036H	0F0H 036H	PAD 6	074H	0F0H 074H
7	03DH	0F0H 03DH	PAD 1	069H	0F0H 069H
8	03EH	0F0H 03EH	PAD DEL	071H	0F0H 071H
9	046H	0F0H 046H	PAD 4	06BH	0F0H 06BH
A	01CH	0F0H 01CH	PAD 2	072H	0F0H 072H
B	032H	0F0H 032H	PAD -	07BH	0F0H 07BH
BKSPACE	066H	0F0H 066H	PAD 5	073H	0F0H 073H
C	021H	0F0H 021H	PAD 9	07DH	0F0H 07DH
CAPS	058H	0F0H 058H	PAD *	07CH	0F0H 07CH
COMMA	041H	0F0H 041H	PAD +	079H	0F0H 079H
D	023H	0F0H 023H	PAD 8	075H	0F0H 075H
E	024H	0F0H 024H	Q	015H	0F0H 015H
ENTER	05AH	0F0H 05AH	R SHIFT	059H	0F0H 059H
ESC	076H	0F0H 076H	R	02DH	0F0H 02DH
F	02BH	0F0H 02BH	S	01BH	0F0H 01BH
F1	005H	0F0H 005H	SCROLL	07EH	0F0H 07EH
F10	009H	0F0H 009H	SPACE	029H	0F0H 029H
F11	078H	0F0H 078H	T	02CH	0F0H 02CH
F12	007H	0F0H 007H	TAB	00DH	0F0H 00DH
F2	006H	0F0H 006H	TILDE	00EH	0F0H 00EH
F3	004H	0F0H 004H	U	03CH	0F0H 03CH
F4	00CH	0F0H 00CH	V	02AH	0F0H 02AH
F5	003H	0F0H 003H	W	01DH	0F0H 01DH
F6	00BH	0F0H 00BH	X	022H	0F0H 022H
F7	083H	0F0H 083H	Y	035H	0F0H 035H
F8	00AH	0F0H 00AH	Z	01AH	0F0H 01AH
F9	001H	0F0H 001H	[{	054H	0F0H 054H
G	034H	0F0H 034H	}]	05BH	0F0H 05BH
H	033H	0F0H 033H	R ALT	0E0H 011H 0E0H 0F0H 011H	
I	043H	0F0H 043H	PAD ENT	0E0H 05AH 0E0H 0F0H 05AH	
J	03BH	0F0H 03BH	R CTRL	0E0H 0E4H 0E0H 0F0H 014H	

Code Set 2 Exception Tables

1	2	3	4
NUM LOCK	OFF ON	ON	OFF
SHIFT	OFF ON	OFF	ON
Keytop legend	DATA MAKE/ BREAK	MAKE/ BREAK	MAKE/ BREAK
INSERT	70 E0 DATA/	E0 12 E0 DATA/	E0 F0 12 E0 DATA/
DELETE	71 E0 F0 DATA	E0 F0 DATA E0 F0 12	E0 F0 DATA E0 12
L. ARROW	6B		
HOME	6C		
END	69		
UP ARROW	75		
DN ARROW	72		
PAGE UP	7D		
PAGE DN	7A		
R. ARROW	74		
OMNI	72		

Notes: 1) When Left Shift is held down, the 12/F0 12 Shift Make/Break is sent with the other scan codes. When Right Shift is held down, 59/F0 59 Make/Break is sent with the other scan codes. If both Shift keys are held down, both sets of codes are sent with the other scan codes.

2) Notice that column 2 gives both the OFF/OFF and ON/ON conditions for Num Lock and Shift.

SHIFT	OFF	ON
Keytop Legend	MAKE/BREAK	MAKE/BREAK
PAD /	E0 4A/E0 F0 4A	E0 F0 12 4A/E0 12 E0 4A
PAD =	55/F0 55	F0 12 55/F0 55 12

Note: When Left Shift is held down, the 12/F0 12 Shift Make/Break is sent with the other scan codes. When Right Shift is held down, 59/F0 59 Make/Break is sent with the other scan codes. If both Shift keys are held down, both sets of codes are sent with the other scan codes.

Code Set 2 Exception Tables, Continued

CTRL	OFF	ON
Keytop Legend	MAKE	MAKE
PAUSE	E1 14 77 E1 F0 14 F0 77	E0 7E E0 F0 7E

Note: This key does not repeat. All codes occur on the Make stroke of the key.

	KEY ALONE (BASE CODE)	KEY + SHIFT OR CTRL	KEY + ALT
Keytop Legend	MAKE/BREAK	MAKE/BREAK	MAKE/BREAK
PRINT	E0 12 E0 7C/	E0 7C/E0 F0 7C	84/F0 84
SCREEN	E0 F0 7C E0 F0 12		

AT Code Set 3 (IBM). For AT's & Compatibles & ATT WGS

Legend	Make Code	Break Code	Legend	Make Code	Break Code
.	049H	0F0H 049H	L ARROW	061H	0F0H 061H
;	04CH	0F0H 04CH	L	04BH	0F0H 04BH
/?	04AH	0F0H 04AH	L ALT	019H	0F0H 019H
"	052H	0F0H 052H	M	03AH	0F0H 03AH
=+	055H	0F0H 055H	N	031H	0F0H 031H
\	05CH	0F0H 05CH	NUMS	076H	0F0H 076H
_	04EH	0F0H 04EH	O	044H	0F0H 044H
0	045H	0F0H 045H	P SCREEN	057H	0F0H 057H
1	016H	0F0H 016H	P	04DH	0F0H 04DH
2	01EH	0F0H 01EH	PAD 7	06CH	0F0H 06CH
3	026H	0F0H 026H	PAD 1	069H	0F0H 069H
4	025H	0F0H 025H	PAD =	055H	0F0H 055H
5	02EH	0F0H 02EH	PAD DEL	071H	0F0H 071H
6	036H	0F0H 036H	PAD 5	073H	0F0H 073H
7	03DH	0F0H 03DH	PAD 3	07AH	0F0H 07AH
8	03EH	0F0H 03EH	PAD 6	074H	0F0H 074H
9	046H	0F0H 046H	PAD ENT	079H	0F0H 079H
A	01CH	0F0H 01CH	PAD 2	072H	0F0H 072H
B	032H	0F0H 032H	PAD /	077H	0F0H 077H
BKSPACE	066H	0F0H 066H	PAD *	07EH	0F0H 07EH
C	021H	0F0H 021H	PAD 4	06BH	0F0H 06BH
CAPS	014H	0F0H 014H	PAD 0	070H	0F0H 070H
COMMA	041H	0F0H 041H	PAD 8	075H	0F0H 075H
D ARROW	060H	0F0H 060H	PAD +	07CH	0F0H 07CH
D	023H	0F0H 023H	PAD 9	07DH	0F0H 07DH
DELETE	064H	0F0H 064H	PAD -	084H	0F0H 084H
E	024H	0F0H 024H	PAGE UP	06FH	0F0H 06FH
END	065H	0F0H 065H	PAGE DN	06DH	0F0H 06DH
ENTER	05AH	0F0H 05AH	PAUSE	062H	0F0H 062H
ESC	008H	0F0H 008H	Q	015H	0F0H 015H
F	02BH	0F0H 02BH	R SHIFT	059H	0F0H 059H
F1	007H	0F0H 007H	R CTRL	058H	0F0H 058H
F10	04FH	0F0H 04FH	R	02DH	0F0H 02DH
F11	056H	0F0H 056H	R ALT	039H	0F0H 039H
F12	05EH	0F0H 05EH	R ARROW	06AH	0F0H 06AH
F2	00FH	0F0H 00FH	S	01BH	0F0H 01BH
F3	017H	0F0H 017H	SCROLL	05FH	0F0H 05FH
F4	01FH	0F0H 01FH	SPACE	029H	0F0H 029H
F5	027H	0F0H 027H	T	02CH	0F0H 02CH
F6	02FH	0F0H 02FH	TAB	00DH	0F0H 00DH
F7	037H	0F0H 037H	TILDE	00EH	0F0H 00EH
F8	03FH	0F0H 03FH	U	03CH	0F0H 03CH
F9	047H	0F0H 047H	UP ARROW	063H	0F0H 063H
G	034H	0F0H 034H	V	02AH	0F0H 02AH
H	033H	0F0H 033H	W	01DH	0F0H 01DH
HOME	06EH	0F0H 06EH	X	022H	0F0H 022H
I	043H	0F0H 043H	Y	035H	0F0H 035H
INSERT	067H	0F0H 067H	Z	01AH	0F0H 01AH
J	03BH	0F0H 03BH	{	054H	0F0H 054H
K	042H	0F0H 042H	}	05BH	0F0H 05BH
L CTRL	011H	0F0H 011H	OMNI	060H	0F0H 060H
L SHIFT	012H	0F0H 012H			

Amiga Code Set

Legend	Make Code	Break Code	Legend	Make Code	Break Code
PAD =	06FH	0E0H	SCROLL	048H	0C8H
SPACE	040H	0C0H	PAD 5	02EH	0AEH
L AMIGA	066H	0E6H	PAD 2	01EH	09EH
A	020H	0A0H	M	037H	0B7H
TAB	042H	0C2H	K	027H	0A7H
TILDE	000H	080H	U	016H	096H
ESC	045H	0C5H	7	007H	087H
PAD +	05EH	0DEH	F7	056H	0D6H
PAD 9	03FH	0BFH	F13	06AH	0EAH
HELP	05FH	0DFH	HOME	06BH	0EBH
Z	031H	0B1H	L ALT	064H	0E4H
S	021H	0A1H	BACKSPACE	041H	0C1H
Q	010H	090H	}]	01BH	09BH
1	001H	081H	=+	00CH	08CH
F1	050H	0D0H	F12	069H	0E9H
PAD -	04AH	0CAH	F15	02CH	0ACH
PAD 8	03EH	0BEH	L ARROW	04FH	0CFH
DELETE	046H	0C6H	END	06CH	0ECH
X	032H	0B2H	\	00DH	08DH
D	022H	0A2H	ENTER	044H	0C4H
W	011H	091H	[{	01AH	09AH
2	002H	082H	-	00BH	08BH
F2	051H	0D1H	F11	068H	0E8H
PAD *	05DH	0DDH	F14	01CH	09CH
PAD 7	03DH	0BDH	OMNI	04DH	0CDH
PAD 0	00FH	08FH	D ARROW	04DH	0CDH
C	033H	0B3H	/?	03AH	0BAH
F	023H	0A3H	"'	02AH	0AAH
E	012H	092H	P	019H	099H
3	003H	083H	0	00AH	08AH
F3	052H	0D2H	F10	059H	0D9H
PAD /	05CH	0DCH	P SCREEN	047H	0C7H
PAGE UP	06DH	0EDH	R ARROW	04EH	0CEH
PAD DEL	03CH	0BCH	PAGE DN	06EH	0EEH
V	034H	0B4H	.	039H	0B9H
G	024H	0A4H	;:	029H	0A9H
R	013H	093H	O	018H	098H
4	004H	084H	9	009H	089H
F4	053H	0D3H	F9	058H	0D8H
NUMS	05AH	0DAH	PAD 4	02DH	0ADH
UP ARROW	04CH	0CCH	PAD 1	01DH	09DH
PAD ENTER	043H	0C3H	COMMA	038H	0B8H
B	035H	0B5H	L	028H	0A8H
H	025H	0A5H	I	017H	097H
T	014H	094H	8	008H	088H
5	005H	085H	F8	057H	0D7H
F5	054H	0D4H	R CTRL	063H	0E3H
PAUSE	049H	0C9H	R ALT	065H	0E5H
PAD 6	02FH	0AFH	R SHIFT	061H	0E1H
PAD 3	01FH	09FH	R AMIGA	067H	0E7H
N	036H	0B6H	L ALT	064H	0E4H
J	026H	0A6H	CAPS LOCK	062H	0E2H
Y	015H	095H	L SHIFT	060H	0E0H
6	006H	086H	L CTRL	063H	0E3H
F6	055H	0D5H			

RADIO AND TELEVISION INTERFERENCE STATEMENT

The equipment described in this manual generates and uses radio frequency energy. If it is not installed and used properly, that is, in strict accordance with the manufacturer's instruction, it may cause interference to radio and television reception.

This equipment has been tested and complies with limits for a Class B computing device in accordance with the specifications in Subpart J, Part 15 of FCC Rules. These rules are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning it off, you can try to correct the problem by one or more of the following measures:

- Turning the TV or radio antenna until the interference stops.
- Moving the computer further away from the TV or radio.
- Moving the computer from one side of the TV or radio to the other.
- Plugging the computer into an outlet on a different circuit breaker or fuse than the TV or radio.
- Installing a rooftop antenna connected to your TV and radio with coaxial cable.

If necessary, you should consult your computer dealer for additional suggestions. You may find the booklet, prepared by the Federal Communications Commission, helpful: *How to Identify and Resolve Radio-TV Interference Problems*. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402. Refer to Stock Number: 004-000-00345-4.

WARNING: This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC Rules. Only peripherals (computer input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this computer. Operation with non-certified peripherals is likely to result in interference to radio and TV reception. Any changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate this equipment.

REMARKS: To meet FCC requirements, shielded cables and power cords are required to connect the device to a personal computer, peripheral, or other Class B certified device.

NORTHGATE OMNIKEY WARRANTY

To activate this warranty, please complete the warranty Registration Card (located in the front of this manual) and return it to Northgate within 60-days from the date of shipment. This warranty applies to the original purchaser only and is **NOT TRANSFERABLE**.

KEYBOARD 60 DAY RETURN POLICY (KEYBOARDS PURCHASED DIRECTLY FROM NORTHGATE ONLY)

DO NOT SHIP ANY PACKAGES WITHOUT FIRST CONTACTING KEYBOARD SALES FOR AN RMA NUMBER.

If, for any reason, you wish to return your keyboard within 60-days of shipment, call Northgate Keyboard Sales Mon-Fri 8am to 5pm CST at 1-800-526-2446 to obtain an RMA (Return Merchandise Authorization) number, prior to returning the keyboard. You will be required to provide the Sales Representative with information obtained from your invoice or packing list. Please have the invoice number available when you call. Repackage the keyboard in the original shipping container with all the packing materials, documentation, and accessories intact, and write the RMA number clearly on the outside of the box in at least two places.

NO REFUNDS OR SUBSTITUTIONS WILL BE MADE AFTER THE 60-DAY EVALUATION RETURN PERIOD.

NORTHGATE WILL NOT ISSUE REFUNDS FOR MORE THAN ONE KEYBOARD PER CUSTOMER. Evaluate one unit prior to placing orders for multiple keyboards.

Ship the keyboard, **FREIGHT PREPAID**, to the address given by the Representative issuing the RMA number. Packages **NOT CLEARLY MARKED** with the RMA number on the outside of the box **WILL NOT BE ACCEPTED** by Northgate's Receiving Department and will be returned to the sender.

Credit will be issued when the keyboard is received under the RMA number given by Keyboard Sales. The keyboard must be in new condition with no alterations or modifications, properly packaged in the original container, with all documents and accessories intact. The cost of any items not returned will be deducted from the refund amount. If your purchase was made with a credit card, your credit card account will be credited. If your purchase was paid for by any other method you will be issued a refund check. Your credit or refund check will be issued within a reasonable amount of time after receiving your keyboard.

FIVE YEAR U.S. AND CANADA REPAIR/REPLACEMENT POLICY

Northgate's obligation under this warranty, beyond the 60-day evaluation period, is limited to repair or replacement of the defective keyboard for Five years from date of purchase. **In no event will Northgate be liable to you for any damages, including any lost profits, lost savings or other incidental or consequential damages arising out of the use of, or inability to use, the keyboard.** Northgate will repair or replace (at Northgate's sole discretion) all or part of the keyboard under this warranty.

Call Northgate Keyboard Technical Support Mon-Fri 8am to 5pm CST at (612)943-8346 to obtain an RMA number prior to returning the keyboard. You must provide to the Technician the order number obtained from the invoice or packing list. To save time, please have it available when you call. Write the RMA number clearly in two places on the outside of the box prior to return shipment. A complete statement of the failure that necessitated the return should be included with the keyboard. By providing Northgate with a credit card number, a replacement keyboard can be sent out to you before returning your keyboard to Northgate. Return the defective keyboard **WITHIN 14 DAYS** after receipt to avert any additional charges from being incurred.

Keyboards returned for repair or replacement must be shipped **FREIGHT PREPAID** in the original container with packaging and must include the original cable. **DO NOT** include your manuals, spare keycaps, (return the keyboard to the normal key arrangement according to the manual) or cover, when returning the keyboard for repair. The replacement keyboard will not contain these items and will be set to the normal configuration.

The repair or replacement of the keyboard may take up to four weeks before re-shipment, dependant upon availability. Please do not phone for shipping status until at least four weeks have elapsed since the date of the return.

Repaired or replacement keyboard(s) will be shipped to you by normal freight service. If you desire your keyboard(s) shipped by a faster method, please indicate this to the Technician while obtaining the RMA number. Freight charges will be added to your credit card.

KEYBOARDS PURCHASED FROM INDEPENDENT DEALERS (UNITED STATES AND CANADA ONLY)

If you purchased your keyboard(s) from a dealer other than Northgate, you must return the keyboard to that dealer for any refunds or substitutions. The dealer may limit the length of the evaluation return period. Northgate **WILL NOT** issue refunds or provide substitutions for keyboard(s) purchased from independent dealers.

With the exception of the 60-day evaluation refund, the standard Northgate five-year warranty applies to all keyboards, whether bought directly from Northgate or through an independent U.S., or Canadian dealer. Customers have the option of having the keyboard serviced by the dealer or by Northgate, subject to independent dealer participation.

Follow the procedures outlined in the repair/replacement warranty policy when calling Northgate Keyboard Technical Support at (612)943-8346 to obtain an RMA number. Non-Northgate purchasers may not have an order number available. However, a Keyboard Reference number will be issued to you by the Technician. Write this number in the keyboard manual for future reference.

KEYBOARDS PURCHASED FROM INTERNATIONAL DEALERS (EXCLUDING THE USA AND CANADA)

Warranty repair or replacement of Northgate keyboards can only be obtained from international dealers. Customers purchasing a keyboard or keyboards from an international dealer anywhere outside the United States and Canada must return their keyboard(s) to that dealer for any evaluation refund, if applicable, exchange, warranty repair, or replacement service.

ONE YEAR INTERNATIONAL DEALER REPAIR/REPLACEMENT POLICY

Northgate's sole responsibility to international dealers is to provide warranty repair or replacement of the defective keyboard(s) for a period of One year from date of shipment. International dealers can obtain warranty service from Northgate by calling (612)943-8346, Monday-Friday, 8am-5pm Central Standard Time, to obtain an RMA number for warranty repair or replacement.

All repair/replacements are done on Receive basis only. To save time, please have the order number available from your invoice or packing list. International dealers will be responsible for **ALL SHIPPING CHARGES** and any **CUSTOM DUTIES OR TARIFFS** incurred for the return and re-shipment of any defective Northgate keyboard(s) returned for warranty repair or replacement. Please provide the Technician with a credit card number to incur the shipping charges.



P.O. Box 59080

Minneapolis, MN 55459-0080

Keyboard Sales:

800-526-2446

Technical Support:

612-943-8346

TDD (Hearing Impaired): 800-535-0602