

Advantage2

Contoured Keyboard Family



USER'S MANUAL



KB600

KB605

Proudly designed and hand-assembled in the USA



SmartSet™
Programming Engine



Contoured
Keyboard™



Cherry Low-Force
Mechanical Keyswitches



Mac/Windows/PC
Switchable

USER'S MANUAL

Kinesis® Advantage2™ Keyboard with the SmartSet™ Programming Engine

Keyboard models covered by this Manual:

- KB600: Advantage2
- KB600LF: Advantage2 LF (“Linear Feel”)
- KB600QD: Advantage2 QD (“QWERTY/Dvorak”)
- KB605: Advantage2 Silver
- KB620-XX: Advantage2 Limited

August 18, 2016 Edition

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FCC Radio Frequency Interference Statement

Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Warning

To assure continued FCC compliance, the user must use only shielded interfacing cables when connecting to computer or peripheral. Also, any unauthorized changes or modifications to this equipment would void the user's authority to operate.

INDUSTRY CANADA COMPLIANCE STATEMENT

This Class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet Appareil numerique de la classe B respecte toutes les exigences du Reglement sur le material brouilleur du Canada.

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1. READ ME FIRST!

1.1 Health and safety warning

Continuous use of any keyboard may cause aches, pains or more serious cumulative trauma disorders such as tendinitis and carpal tunnel syndrome, or other repetitive strain disorders.

- Observe sensible guidelines which using any keyboard to help minimize the possibility of injury.
- Follow established guidelines for computer and workstation setup. See Appendix 12.3, "Ergonomic Guidelines for Computer Workstations".
- Maintain a relaxed keying posture and use a light touch to press the keys.
- Exercise good judgement in placing reasonable limits on your keyboarding time every day.

Keyboard is not a medical treatment

This keyboard is not a substitute for appropriate medical treatment! If any information in this guide appears to contradict the advice you have received from a health care professional, please follow your health care professional's instructions.

Establish realistic expectations

- Ensure that you take reasonable rest breaks from keyboarding during the course of the day.
- At the first sign of stress-related injury from keyboard use (aching, numbness, or tingling of the arms, wrists, or hands), consult your health care professional.

No warranty of injury prevention or cure

Kinesis Corporation bases its product designs on research, proven features and user evaluations. However, because of the complex set of factors believed to contribute to computer-related injuries, the company can make no warranty that its products will prevent or cure any physical ailment. Your particular risk of injury may be affected by workstation and chair design, posture, time worked without breaks, type of work, activities outside the workplace, and/or individual physiology.

If you currently have an injury to your hands or arms, or have had such an injury in the past, it is important that you have realistic expectations of your keyboard. You should not expect an immediate improvement in your physical condition simply because you are using a new keyboard. Your physical trauma has built up over months or years, and it may take weeks before you notice a difference. It is normal to feel some new fatigue or discomfort as you adapt to your Kinesis keyboard.

1.2 Preserving your warranty rights

Kinesis does not require any product registration to obtain warranty benefits, but you will need your purchase receipt in the event you need a warranty repair.

1.3 Quick Start Guide

If you are eager to get started, please consult the Quick Start Guide which is included in the box with all new Advantage2 keyboards. The Quick Start Guide can also be downloaded from Kinesis.com.

1.4 Read this User's Manual

Even if you don't normally read manuals, Kinesis strongly encourages you to read this entire manual at least once. The manual provides suggestions for the initial adaption period and explains the unique features of the physical form-factor and electronic design of the Advantage2 keyboard.

Programmable keyboards like the Advantage2 are powerful tools, but if you hit an inadvertent key combination and enter a programming mode, you can unknowingly alter the layout of your keyboard. Even if you are a long-time user of Kinesis Contoured keyboards, we recommend reading this manual. There are many new features in the Advantage2 and some of the programming shortcuts have changed.

2.0 Introduction to the Advantage2 Keyboard

2.1 Geometry and key groupings

If you are new to a Kinesis Contoured keyboard, the first thing you will notice about the Advantage2™ keyboard is its sculpted lines, designed to conform to the natural postures and shapes of your hands— reducing the physical demands of keyboarding. This a sharp departure from the constraints of a traditional, flat keyboard. While the Advantage2 looks very different from other keyboards, you'll find that making the transition is actually quite easy because of its intuitive form factor, thoughtful key layout, and its unparalleled electronic configurability. The Advantage2 keyboard features distinctive key groupings not found on traditional or “natural style” keyboards. These key grouping, shown below, will be referenced throughout this User's Manual.

If you are familiar with earlier models, you will note that the Advantage2 for the first time uses mechanical switches (Cherry low-force “ML” switches) for the function keys.

Fig 1. Advantage2 keyboard showing geometry and key groupings

- | |
|--------------------------|
| (1) Function keys |
| (2) Keywells |
| (3) Thumb key clusters |
| (4) LED Indicator Lights |



2.2 Introduction to the SmartSet Programming Engine

Kinesis Contoured keyboards have long featured a fully-programmable architecture that allowed users to record macros, remap keys, and create custom layouts and settings. The Advantage2 introduces Kinesis' revolutionary new SmartSet™ Programming Engine, which makes it even more powerful and versatile than its predecessors. SmartSet adds powerful programming features and new ways to build, visualize and share custom layouts. No software is required, and SmartSet works in any operating system that supports USB keyboards. Virtually any key (168 top level and embedded level key actions) can be copied, moved, or inactivated. In addition, up to hundreds of macros of 200+ characters can be stored in the keyboard's memory chip, to be assigned to one more custom layouts and triggered by a single key or key combination.

What is SmartSet?

SmartSet technology is the foundation of all the “next generation” Kinesis programmable computer peripherals. The technology was implemented in our popular Savant Elite2 programmable USB foot pedals in 2015 and then adapted for use in the Advantage2 keyboard. The foundation of SmartSet is using a virtual removable drive (the “Kinesis KB” v-drive™) inside the keyboard to store custom configuration settings.

Basic Onboard Programming Tools

For basic users, customizing the keyboard is accomplished using onboard programming shortcuts with key combinations that use the dedicated “Program” function key. Custom layout files are saved and stored to the Kinesis KB drive behind-the-scenes.

Power User Tools

Advanced users can elect to activate **Power User Mode** to open the v-drive on their computer and access the configuration files directly. Once the v-drive is open, layout and other configuration files can be viewed and layouts can be directly edited, all without the installation of any software. Each Layout is saved to a separate .txt file that can be opened and viewed with any basic text-editor program, regardless of your operating

system (e.g. notepad for Windows). Layouts can even be shared with other users via email or saved to your computer as a backup. The days of having to rebuild your custom keyboard layout after a Hard Reset are over. SmartSet also includes “bootloader” functionality which allows you to update the firmware on your Advantage2 yourself. So you’re always up to date with the latest releases from Kinesis and so you can ensure compatibility with the newest operating systems.

2.3 Ergonomic design and features

The design of the Advantage2 keyboard traces its roots to the very first contoured keyboard made by Kinesis in the early 1990s. Kinesis set out to develop a design that would prioritize ergonomics over everything else, and would address the major risk-factors associated with keyboarding. Every aspect of the form factor was thoroughly researched and tested.

Separate key modules for each hand

Separating the left and right key modules reduces strain and stretching by positioning the arms approximately at shoulder width and with the wrists straight. This design reduces abduction and ulnar deviation which are harmful postures that can lead repetitive strain injuries such as carpal tunnel syndrome and tendonitis.

Fig 2. Separate key modules for each hand



Separate thumb keypads

The thumb keypads feature commonly used keys such as Enter, Space, Backspace, and Delete. Modifier keys such as Control and Alt on the PC, and Command and alt Option on Macs have also been relocated to the thumb keypads. Windows users will appreciate a Windows key in the right thumb keypad. By moving these commonly used keys to the thumbs, the Advantage2 redistributes the workload from your relatively weaker and overused little fingers, to your stronger thumbs.

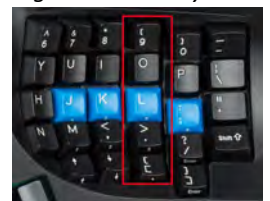
Fig 3. Separate thumb key pads



Vertical (orthogonal) key layout

Keys are arranged in vertical columns to reflect natural motions of your fingers, and the keypads are sculpted and concave to fit the varying lengths of your fingers. This shortens reaches and reduces the time to learn touch typing for new typists.

Fig 4. Vertical keys



Concave keywells

The keywells are scooped into a concave shape to reduce hand and finger extension. Hands rest in a natural, relaxed position, with the fingers curled down to the keys. Keycap heights are varied to match the different lengths of your fingers. A flat typing surface assumes that your fingers are all of the same length, thus your longer fingers must arch up over the keys. The result is extension of the muscles and tendons in your hands. Your muscles do not operate at maximum efficiency and the result is more rapid muscle fatigue. Concave keywells reduce extension by accommodating the various lengths of your fingers and placing your hands and fingers in a more relaxed and neutral position.

Fig 5. Concave keywells



Cherry low-force mechanical keyswitches — Choice of MX Brown or MX Red Stem

All Advantage2 keyboards feature Cherry® MX full travel mechanical switches for all of the full-size keys and Cherry ML mechanical switches for the half-size function keys. Cherry switches are known for their reliability and durability— MX switches are rated for more than 50M keystrokes, ML switches for 20M keystrokes.

All Advantage2 models (other than the KB600LF) use Cherry MX Brown switches. Cherry Brown switches are a low-force, tactile switch that offers the ultimate in typing performance and comfort. Cherry first built the Brown-stem switch according to specifications supplied by Kinesis in the

early 1990s and it has since been adopted as one of the switches of choice for all of the major mechanical keyboard manufacturers, ergonomic or otherwise. "Tactility" is a slightly elevated force around the midpoint of the stroke of the key which lets you know the switch is about to be activated. A tactile response is preferred by many ergonomists, because it cues your fingers that activation is about to occur and is thought to reduce the incidence of "bottoming out" the switch with a hard impact. The peak (tactile) force is ~55gm, following by an activation force of ~45gm.

The Advantage2 LF model (KB600LF) utilizes the Cherry MX Red switches, which are preferred by some users. Red-Stem switches feature the same great low activation force of the Brown-stem switches (~45gm), but they lack the "tactile bump" and have more of a "linear feel". The Brown and Red-stem switches are very similar in feel, and can be difficult to differentiate for all but the most seasoned mechanical keyboard enthusiasts.

20-degree lateral tilt design

The contour design of the Advantage2 positions your hands so that your thumbs are approximately twenty degrees higher than pinky fingers. This "tented" design helps to minimize stresses associated with pronation and static muscle tension, while enabling maximum keying productivity.

Closer placement of function keys (New: Cherry ML mechanical switches)

Cherry ML low-force, linear mechanical keys switches are used in the function key row for great typing feel, consistency, and long life. These keycaps are laser legended. As on all Contoured keyboards, the function keys are positioned closer to the alphanumeric keys to reduce the reach.

Integrated palm support

Unlike most keyboards, the Advantage2 features integrated palm supports and included self-adhesive cushioned palm pads that enhance comfort and reduce stressful extension of and pressure on the wrist. The palm supports provides a place to rest the hands while they are not actively keying, though many users prefer to rest while typing to take weight off the neck and shoulders. However, you should not expect to be able to reach all the keys without rocking your hands forward at times.

Smaller footprint

By removing the traditional numeric 10-key keypad and embedding it into the right alphanumeric key well in the Keypad Layer, Kinesis was able to reduce the overall width of the Advantage2 making it much smaller than a traditional keyboard (5/8 inches x 8 1/8 inches x 3 inches). This smaller footprint allows closer placement of any pointing device reducing over-reach issues.

Optional foot pedals

Kinesis contoured keyboards were designed to be paired with optional Advantage single or triple foot pedals to further reduce the strain put on overworked hands and fingers. Any pedal can be used to perform individual keystrokes or complex macros, redistributing a portion of the workload away from your hands. For instance, a foot pedal can be used to activate the embedded numeric 10-key keypad using the "keypad shift" action.

LED Indicator Lights

There are four blue light emitting diodes (LEDs) located near the center of the keyboard which are used to indicate the status of the keyboard. These LED Indicator Lights will illuminate individually when one of the four basic modes are active. From left to right those modes are 1) Caps Lock, 2) Num Lock, 3) Scroll Lock and 4) Keypad Layer. The LED Indicator Lights are also used to indicate when the keyboard has been placed

Fig 6. 20-degree lateral tilt design



Fig 7. Closer placement of function keys & integrated palm support



Fig 8. Smaller footprint



Fig 9. Advantage Triple Pedal (FS007TAF)



*action with single pedal (FS007RJ11)

into special programming modes. Certain combinations of individual LEDs will flash, either fast or slow, and either one or more times, to indicate that the keyboard has received a valid programming command or is in a temporary programming state. Four flashes are used to indicate when a feature is activated, and one or two flashes signal when a feature has been deactivated.

Cables

Underneath the back side of the keyboard are two cables. The longer cable with the USB Type-A connector is used to connect the keyboard to your computer through a standard full-size USB port. The cable with the familiar-looking telephone connector (RJ11 style) is used to connect the keyboard to an optional Kinesis Advantage Foot Pedal, using a “coupler” that is provided with the foot pedal.

3.0 Installation and setup

3.1 Compatibility

The Advantage2 keyboard is a multimedia USB keyboard that requires only generic drivers provided by the operating system. Therefore it is plug-and-play with all operating systems that support full-featured USB keyboards. Thanks to the Kinesis SmartSet Onboard Programming Engine, the Advantage2 does not require the installation of any software or special drivers on your computer.

Some interface devices that accept USB keyboards do not support multimedia keyboards such as the Advantage2. These can include some KVM (keyboard-video-mouse) switches and IP telephony devices. For more information on compatibility, see: <http://www.kinesis.com/advantage2-resources/>.

3.2 Connecting your keyboard for the first time

1. Plug the Advantage2 into your computer’s USB port. A device installation notice will appear on your screen. *Note: Mac Users may be prompted with the Keyboard Setup Assistant. Follow the on-screen prompts to complete the Setup.*
2. When the auto-installation is completed, you should see a “device is ready to use” notice on your screen.
3. For maximum comfort, install the self-adhesive palm pads on the keyboard’s integrated palm rests.

3.3 Connecting an optional foot pedal

If you are connecting an Advantage single or triple foot pedal to the keyboard, plug it to the telephone style connector at the back of the keyboard using the coupler that came with your foot pedal.

4.0 Getting started using the keyboard

4.1 Positioning and work area setup

Hand Position

Thanks to its split keywells, unique thumb clusters, and 20 degree lateral tilt angle, the Advantage2 forces you adopt an optimal typing position when you place your fingers over the home row. The Advantage2 uses the conventional home row keys (ASDF / JKL;), which are colored in either blue or gray for quick visual confirmation. You’ll notice that the home row keys feature special, cupped keycaps designed let you quickly find the home row without taking your eyes off of the screen. Despite the unique architecture of the Advantage2, the finger you use to press each alphanumeric key is the same finger you would use on a traditional keyboard.

Position your fingers on the home row and relax your right thumb over the Space Key and your left thumb over Backspace. Raise your palms slightly above the palm rests while typing. This position provides the necessary mobility for your hands so that you can comfortably reach all the keys. *Note: Some users may need to move their arms slightly while typing to reach some distant keys, and especially the function row keys.*

Using palm supports & palm pads

The integrated palm supports are designed to provide comfortable support for your hands while resting, though many users rest their palms some of the time while typing to relieve strain on the neck and shoulders. For maximum speed, try holding your palms slightly above the palm support area while typing. Do not expect to reach all of the keys on the keyboard without moving your hands from a stationary position on the palm supports. For maximum comfort, be sure to install the self-adhesive palm pads provided with your new keyboard.

Workstation configuration

Since the Advantage2 keyboard is taller than a traditional keyboard and features integrated palm supports, it may be necessary to adjust your workstation to achieve a proper typing posture with the Advantage2. Kinesis recommends the use of an adjustable keyboard platform/tray to allow for optimal keyboard position. To shop for keyboard platforms and other ergonomic accessories visit www.kinesis.com. Always use your Kinesis keyboard in conformance with ergonomic guidelines. See Appendix 12.3 for appropriate work surface heights and other ergonomic recommendations to improve your workspace.

4.2 Adaptation guidelines

Many experienced typists, when presented with a Kinesis contoured keyboard for the first time, overestimate the amount of time it will take them to adapt to the key layout. With 25 years of experience creating contoured keyboards, Kinesis knows that adaption is usually easy and fast for typists of all ages and experience levels, provided they follow the guidelines below.

Adapting your “kinesthetic sense”

If you are already a touch typist, adapting to the Kinesis contoured keyboard does not require “re-learning” to type in the traditional sense. Learning the Advantage2 layout is just about adapting your existing muscle memory or kinesthetic sense.

Typing with long fingernails

Typists with long fingernails (i.e., greater than 1/4”) may have particular difficulty with the curvature of the key wells.

Typical adaptation period

You will need a little time to adjust to the new shape of the Advantage2 keyboard. Laboratory studies and real-world testing show that most new users are productive (i.e., 80% of full speed) within the first few hours of using a Kinesis contoured keyboard. Full speed is typically achieved gradually within 3-5 days but can take up to 2-4 weeks in some instances. We recommend not switching back to a traditional keyboard during this initial adaptation period as that can slow the retraining of your aforementioned kinesthetic sense. If possible, it can reduce frustration and fatigue if you can reduce your workload during the adaptation period.

Initial awkwardness, fatigue and even discomfort is possible

Many users report some awkwardness when first using a Kinesis contoured keyboard. Muscle fatigue and/or mild discomfort may also occur while your body is adjusting to new typing and resting postures and motions. *Note: If you experience severe pain, or symptoms persist for more than a few days, stop using the keyboard and see Section “If You Are Injured”.*

After Adaptation

Once you have adapted to the Advantage2, you should have no problem switching back to a traditional keyboard, although you may not find a traditional keyboard comfortable any more. Many users report an increase in typing speed because of the efficiencies inherent in the Advantage2 design and the fact that it encourages you to use proper typing form.

4.3 If you are injured

The Advantage2 keyboard is designed to reduce the physical stress that all keyboard users experience— whether or not they are injured. Ergonomic keyboards are not medical treatments, and no keyboard can be guaranteed to cure injuries or prevent the occurrence of injuries. Always consult your health care professional if you notice discomfort or other physical problems when you use your computer.

Have you been diagnosed with RSI or CTD?

Have you ever been diagnosed with tendinitis, carpal tunnel syndromes, or some other form of repetitive strain injury (“RSI”) or cumulative trauma disorder (“CTD”)? If so, you should use special care when using a computer, regardless of your keyboard. Even if you simply experience discomfort when using a traditional keyboard you should use reasonable care when operating keyboard. To achieve the maximum ergonomic benefits when using the Advantage2 keyboard, it is important that you arrange your workstation in accordance with generally accepted ergonomic standards as described in Appendix 12.3: “Ergonomic Guidelines for Computer Workstations” and take frequent “micro” breaks. For individuals with existing RSI conditions it may be advisable work with your health care provider to develop an adaptation schedule.

Establish realistic expectations

If you currently have an injury to your hands or arms, or have had such an injury in the past, it is important that you have realistic expectations of the Advantage2. You should not expect an immediate improvement in your physical condition simply by switching to the Advantage2, or any ergonomic keyboard for that matter. Your physical trauma has built up over months or years, and it may take a number of weeks before you notice difference. At first, you may feel some new fatigue or discomfort as you adapt to the Advantage2.

A keyboard is not a medical treatment!

The Advantage2 is not a medical treatment nor a substitute for appropriate medical treatment. If any information in this Manual contradicts the advice you have received from a health care professional, please follow your health care professional’s instructions.

When to begin using your new keyboard

Consider beginning to use your Advantage2 keyboard after you have taken a break from traditional keyboarding— perhaps after a weekend or a vacation, or at the very least first thing in the morning. This gives your body a change to rest and make a fresh start. If possible, Kinesis recommends starting with the Advantage2 during a period when you are not under a lot of work related stress or pressure. Trying to learn a new keyboard layout can be frustrating, and if you are working long hours or under a deadline that can make matters worse. Do not overtax yourself early on, and if you have not been using a keyboard regularly, build up slowly. Even if you are symptom free, you are still susceptible to injury. Do not dramatically increase your keyboard usage without first consulting your health care professional.

If your thumbs are sensitive

The Advantage2 keyboard is designed for increased thumb usage compared to a traditional keyboard which places more strain on the little fingers. Some new Kinesis contoured keyboard users initially experience fatigue or discomfort as their thumbs adapt to the increased workload. If you have a preexisting thumb injury, be especially careful to move your hands and arms when reaching for thumb keys and read the paragraph below about thumb-free typing option.

Guidelines for using your thumbs

Avoid stretching your thumbs to reach the furthest keys in the thumb clusters. Instead move your hands and arms slightly, being careful to stay relaxed, and keep your wrists straight. If your thumbs are especially sensitive, consider using your index fingers instead of your thumbs to activate these keys. You may want to speak with your health care professional about these options. If pain persists for more than several days, stop using the Advantage2 keyboard and contact your health care professional for advice.

Thumb-free typing options

If your thumbs are especially sensitive, your keyboard can be configured for minimal thumb use or even thumb-free typing if necessary. This

approach is most effective when using one or more Kinesis foot switches in conjunction with the Advantage2 keyboard. Generally speaking, thumb-free typing is accomplished by remapping thumb key actions to the embedded layer, preferably accessed through an optional Kinesis foot pedal, where they can be typed with by your fingers. Personal preference will dictate the exact details of any custom layout but see Section: “Customizing Your Keyboard” for details.

5.0 Initially Configuring of Your Keyboard

Kinesis contoured keyboards have long featured a fully-programmable architecture that allowed users to record macros, remap keys, and create custom layouts and settings. The Advantage2 keyboard takes that legacy to the next level with the new SmartSet onboard programming architecture which adds powerful programming features and new ways to build, view and share custom layouts. No software is required, and SmartSet works in any operating system that supports USB keyboards. Virtually any key (168 top level and embedded level key actions) can be copied, moved, or inactivated. In addition, up to hundreds of macros of 200+ characters can be stored in the keyboards’ memory chip, to be assigned to one more custom layouts and triggered by a single key or key combination.

What is SmartSet?

SmartSet technology is the foundation of all the “next generation” Kinesis programmable computer peripherals. The technology was implemented in our popular Savant Elite2 programmable foot pedals in 2015 and then adapted for use in the Advantage2 keyboard. The basis of SmartSet is using a virtual removable drive (the “Kinesis KB” v-drive™) inside the keyboard to store custom configuration settings.

Basic features

Basic users of the keyboard can customize the keyboard via simple onboard programming shortcuts. The saving and storing of custom layout files to the Kinesis KB drive happens behind-the-scenes.

Advanced features

Advanced users can elect to enter **Power User Mode** to open the v-drive on their computer and access the underlying configuration files. Once the v-drive is open, layout and other configuration files can be viewed and layouts can be directly edited, all without the installation of any software.

Each Layout is saved to a separate .txt file that can be opened and viewed with any basic text editor program, regardless of your operating system (e.g. notepad for Windows). Layouts can even be shared with other users via email or saved to your computer as a backup. The days of having to rebuild your custom keyboard layout after a Hard Reset are over. SmartSet also includes “bootloader” functionality which allows you to update the firmware on your Advantage2 to stay up to date with the latest releases from Kinesis, and ensure compatibility with the newest operating systems.

5.1 Default configuration: QWERTY layout, Windows thumb key mode

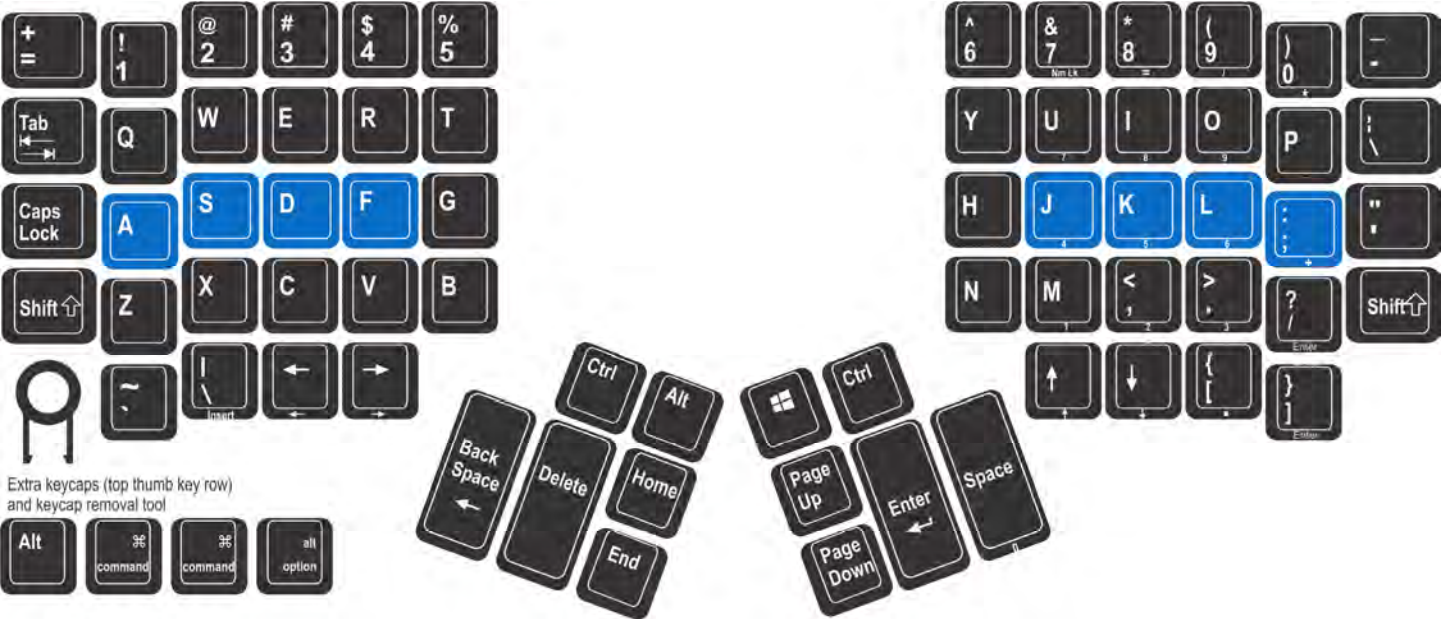
All Advantage2 keyboards come with two preinstalled “onboard” layouts to choose from: the familiar QWERTY layout and the alternative Dvorak layout. The factory default layout is QWERTY. Users who want a different layout can quickly toggle to the on-board Dvorak layout, or can download and install a different layout such as Colemak (see Advanced Programming, section — —).

The keyboard also has separate settings (“Thumb Key Modes”) for the modifier keys assigned to the top four thumb keys, optimized for different operating systems. The factory default configuration is for Windows (see Fig. 10). For use with other operating systems such as Mac OS X or Linux, the Thumb Key Mode and keycaps for these keys can be changed (see “Thumb Key Modes: Windows, PC & Mac” below for instructions).

QWERTY Layout (progM-F3)

The Advantage2 keyboard, like all earlier Kinesis Contoured keyboard, retains the familiar QWERTY key layout for the vast majority of keys (pictured below). Compared to traditional keyboards there are several changes to the location of non-letter keys to transfer the typing workload from your overworked little fingers to your stronger thumbs. Despite the unique design of the Advantage2 keyboard, virtually all alphanumeric keys are still typed with the conventional finger so there is no need to re-learn to type.

Fig 10. Default configuration is QWERTY Layout with the Windows Mode

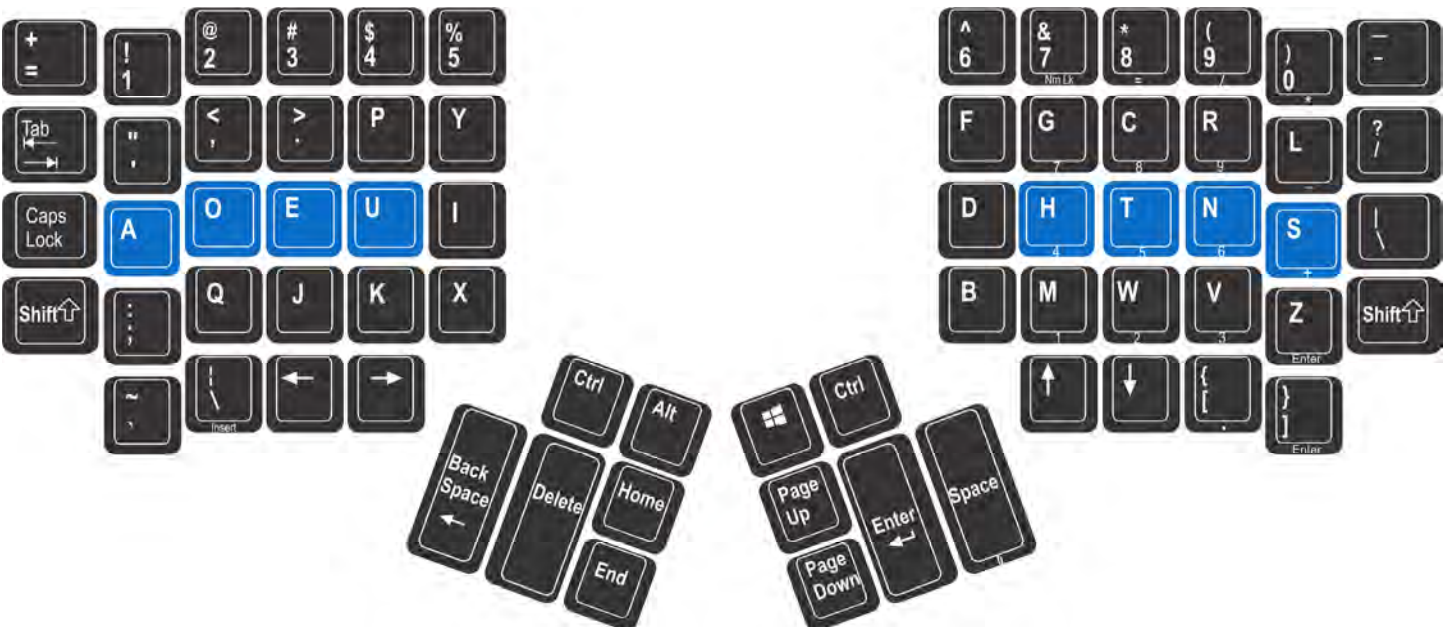


5.2 Alternate onboard layout selection: Dvorak (progM-F4)

The Dvorak layout was first developed in the 1930's by Dr. August Dvorak. Dr. Dvorak's goal was to develop a keyboard layout that would reduce finger movement in order to increase typing speed and decrease errors as compared to the traditional QWERTY layout.

The Kinesis "onboard" Dvorak layout (Fig. 11) has minor differences from the Dvorak built into various operating systems which were optimized for traditional keyboards. Therefore if you plan to use the Kinesis QWERTY-Dvorak dual-legged keycaps, it is advisable to use the onboard Dvorak and the "dvorak keyboard driver" provided by the operating system. To use a layout other than QWERTY or Dvorak, please see Section 7.0: "Power User Tools".

Fig 11. Onboard Dvorak Layout (shown with the Windows Mode thumb



Optional QWERTY-Dvorak dual-legged keycaps

Although it is possible to remove the alphanumeric keycaps and rearrange them in the Dvorak layout, Kinesis does not recommend doing this, as the size and shape of each keycap is designed to fit a specific row and column in the key well. Changing the positions of the keycaps will make it difficult for your fingers to move across the keys. Kinesis recommends that Dvorak typists purchase the Advantage2 QD model (KB600QD) which features dual-legged QWERTY-Dvorak keycaps. The QWERTY-Dvorak keycap set (KC020DU-blk) can also be purchased separately to upgrade any Advantage2 model.

Fig 12. QWERTY-Dvorak dual-legged keycaps for Advantage2



5.3 Thumb Key Mode Selection: Windows, PC & Mac

In addition to selecting between QWERTY and Dvorak layouts, Advantage2 users can select from one of three Thumb Key Modes to configure the four modifier keys in the Thumb Clusters to match their operating system. Thumb key modes do not change when the layout is changed. However a “hard reset” (see Section 7.2) will reset the thumb keys to the default “Windows” mode.

The keys that change between modes are the top 2 keys in each of the two Thumb Clusters. All Advantage2 keyboards are shipped from the factory in Windows mode. International versions of the Advantage2 ship in PC mode).

Note: Four additional keycaps (corresponding to PC and Mac Mode) are provided with the keyboard to allow the top four thumb keys to match the key actions in these three modes.

The three Thumb Key Modes are 1) Windows, 2) Mac, and 3) PC (*non-windows*). Certain other keys besides the top four thumb keys when activating Mac mode (see below).

Windows Mode (prog+**F7**)

In Windows Mode, the modifier thumb keys are Ctrl, Alt, Windows, and Ctrl from left to right.

Fig 13. Default thumb keys, “Win mode”



Mac Mode (prog+**F5**)

In Mac Mode, the modifier thumb keys are command, alt Option, control (aka “Ctrl”) and command from left to right. In addition, the scroll lock key becomes the Mac “power” key — if it is held briefly, it brings up the “Do you want to shut down?” menu. Also the “keypad =” key in Mac mode performs the Mac keypad = action, which is not recognized in Windows.

Fig 14. Mac mode thumb keys



PC Mode (progm+F6)

In PC Mode, the modifier thumb keys are Ctrl, Alt, Alt, and Ctrl from left to right. Non-windows PCs do not support the Windows Key so we replaced it with an additional Alt key for your convenience.

Fig 15. PC mode thumb keys,



5.4 Function Keys

The Advantage2 features 18 half-size mechanical function keys located in the Function Key row. Because of the concave nature of the alphanumeric keys, the function keys are closer to the home row than on a conventional keyboard. Kinesis recommends accessing these keys by moving your hands and arms slightly, rather than trying to stretch your fingers.

Fig 16. Left & right function keys firmware version 1.0.0



Fig 17. Left & right function keys with firmware version 1.0.18 (new un-legended keypad layer actions)



Traditional actions of function keys

When used in isolation, the function keys perform the standard actions legended on the bottom of each key. These actions are dependent on your operating system and your active application. However, two special keys are unique to the Advantage2 and the SmartSet Programming Engine: the **Keypad Key** ("keypad") and the **Program Key** ("prog"). The uses of these special keys are described below.

Keypad Key

The Keypad key (legended in blue) activates a second "layer" of key actions (the "keypad layer" or "embedded layer"). This special key acts as a "toggle" key to activate the keypad layer. Each Layout (QWERTY & Dvorak) has its own embedded keypad layer that can be used to remap keys and store macros. The keypad layer also includes the blue-legended multimedia keys and the front-legended embedded numeric 10-key.

Program Key

The Program Key (labeled "prog") is a special key that, when used in conjunction with other keys, allows users to access the onboard SmartSet programming actions. When using the Program Key, it should be pressed first and held, before activating other programming key(s). Basic SmartSet program actions are legended on the top of Function Row Keys (Esc and F3-F12). Basic SmartSet Actions labeled in lower case (e.g., status) require only the simultaneous press of the Program Key to trigger the special action. Basic SmartSet Actions labeled in ALL CAPITAL LETTERS (i.e., TONE and RESET) require the simultaneous press of the Program Key and the Shift Key to trigger the special action. For detailed instructions on SmartSet custom programming actions please refer to Chapter 6.0 "Basic Onboard Programming Tools".

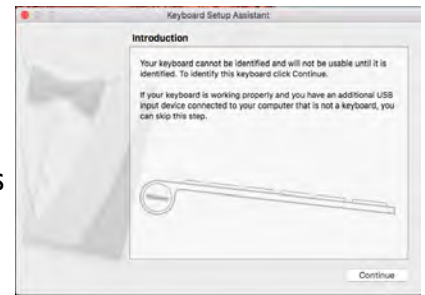
Multimedia Keys

The blue-labeled multimedia keys reside in the keypad layer and perform Mute, Volume Down and Volume Up (from left to right). In firmware version 1.0.18, additional embedded multimedia actions have been added to the function row in the keypad layer (see fig. 17).

5.5 Mac usage & special considerations

When installing the Advantage2 for the first time a Mac computer, you will likely be prompted with the Keyboard Setup Assistant (Fig. 18). Follow the on-screen prompts to complete the Setup Assistant or simply close the window.

Fig 18 Mac Keyboard Setup Assistant



Mac users should configure their thumb keys for Mac-specific modifiers and install the included keycaps on the appropriate keys. For specific instructions, see Section “Thumb Key Mode Selection: Mac, PC & Windows”.

Regardless of your selected Layout or Thumb Key Mode, certain keys on the Advantage2 keyboard will behave differently in a Mac operating environment, just like any standard PC-based 3rd party keyboard. On the Advantage2, most of these keys have the appropriate PC legend. These keys are summarized in Figure 19.

The key to the left of “Left Arrow” (\| in the table to the right) performs “Insert” on a PC when the keypad layer is active, this key becomes *Insert* on PCs and *Help* on Macs.

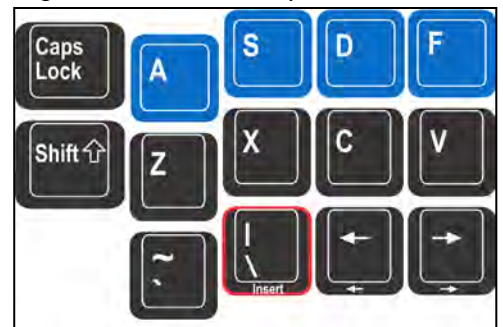
Fig 19. Comparing keys that change between Windows/PC and Mac OS X

Advantage2 Legend	PC Action	Mac Action
Backspace	Backspace	Delete
Delete	Delete	Forward Delete
Enter	Enter	Return
Ctrl	Ctrl	Control
Alt	Alt	alt-option
scroll lock	Scroll Lock	Shut-down Sequence
Keypad =	Number row = (+ with shift)	Keypad =
\ (to the left of Left Arrow)	\	§

5.6 International Usage

An “International Key” is located next to the Left arrow key (Fig. 20, see red-outlined key). With the US English keyboard driver, this key has the same action as the key to the right of “P,” but it is normally only present on non-US traditional keyboards. The International Key action changes depending on your operating system and which language driver is active on your computer.

Fig 20. “International key”



6.0 Basic Onboard Programming Tools

The Advantage2 keyboard has a number of Basic Programming Features that even those who have never used a programmable keyboard can learn to use and benefit from. Basic Onboard Programming Tools are accessed using The **Program Key** (labeled “**prog**m”) in conjunction with one or more keys in the new Function Row. Basic Programming Actions have been labeled for your convenience. Basic Programming Actions labeled in lower case letters require only the Program Key to activate, whereas those actions labeled in CAPITAL letters require the Program Key and Shift Key to activate. White legends correspond to the top keyboard layer and blue legends refer to the embedded keypad layer.

6.1 Configuration Status Report (prog^m + Esc)

The Configuration Status Report is a handy features which allows Advantage2 users to quickly check the active settings on their keyboard.

Important Note: Before running a Status Report, open any text editing program so that keyboard can “print” the Status Report to the screen.

How to read a Status Report (firmware version 1.0.0)

The Status Report provides 11 important details about the current status of your Advantage2 keyboard. On newer firmware versions (1.0.18 or newer), an additional feature is listed which is the Status Report playback speed.

Model Name— Indicates the name of the keyboard.

Firmware Version— Indicates the current version of Advantage2 firmware your keyboard is running. Unlike previous versions of Kinesis contoured keyboards, the firmware of the Advantage2 can be updated to ensure maximum compatibility with current and future operating systems. Your Advantage2 keyboard comes from the factory with the most up to date version of the firmware as of its build date. Kinesis may at times release new versions of firmware to add features or fix bugs. If you purchased your Advantage2 from one of Kinesis’s authorized resellers (as opposed to from the Kinesis store), it is possible that your keyboard has an older version of firmware. To enquire about newer versions of Advantage2 firmware please visit Kinesis.com or contact tech@kinesis.com.

Fig 21. Default Status Report (firmware version 1.0.0.us)

```
Model> Advantage2
Firmware> 1.0.0.us (2MB), 06/29/2016
Active layout file> qwerty.txt
Thumb keys mode> win
Macro play status> active
Macro play speed> slow=1, normal=3, fast=9> 3
Keyclick status> on
Toggle tone status> on
Stored macros> 0
Keys remapped> 0
```

Current Keyboard Configuration File— Indicates which Layout file is currently active. The QWERTY (qwerty.txt) and Dvorak (dvorak.txt) Layouts are the two factory configured options. Alternate “Hotkey” layouts can be created. For additional information on Hotkey layouts and file naming conventions see Chapter 7.6.

Current Thumb Key Mode— Indicates which of the three Thumb Key Modes are presently activated— PC, Windows (“win”), or Mac.

Macro Playback Status— Indicates whether macro playback has been disabled. “Active” means macro playback is enabled, “disabled” means that macro playback has been temporarily disabled.

Macro Playback Speed— Indicates the current “global” speed setting for macro playback. The Advantage2 plays macros back at “Speed 3” by default, but that speed can be adjusted on a scale of 1 to 9. Macro playback can be also be set individually (See Chapter 7.9).

Key Click Status— Indicates whether key “clicks” are enabled. The Advantage2 is equipped with a unique feature that provides a subtle electronic click each time a key press is registered. The purpose of the key click is to provide feedback to the user regarding when a given key press has been registered by the computer to discourage “bottoming out” on the keys, which if done repeatedly can cause finger pain.

Tone Status— Indicates whether special feedback “tones” are enabled. The Advantage2 provides a feedback tone to alert the user when they “toggle” the keyboard into a special mode: Keypad, Num Lock, Caps Lock and Scroll Lock.

Number of Stored Macros— Indicates how many custom macros have been programmed and assigned to the active layout.

Number of Stored Remaps— Indicates how many custom key remaps have been assigned to the active layout.

Note: The Remap count is affected by the Thumb Key Mode. Windows Mode is set as the default so it reports 0 remaps. Mac Mode has 8 remapped keys relative to Windows Mode and PC Mode has 2 remapped keys relative to Windows Mode.

Fig 22. Example of default Status Report (firmware version

```
Model> Advantage2
Firmware> 1.0.18.us (2MB), 07/22/2016
Active layout file> qwerty.txt
Thumb keys mode> win
Macro play status> active
Macro play speed> slow=1, normal=3, fast=9> 3
Status report play speed> slow=1, normal=2, fast=3> 2
Keyclick status> on
Toggle tone status> on
Stored macros> 0
Keys remapped> 0
```

Status report with newer firmware versions (prog + Esc)

Newer versions of the Status Report, beginning with 1.0.18, add an additional feature and line in the report (“status report play speed”). If the Status Report doesn’t playback properly, see “Advanced Programming” in Chapter 6 to set it to playback at a slower speed.

6.2 Activate QWERTY Layout (prog + F3)

Loads the QWERTY.txt configuration file which corresponds to the default QWERTY Layout (see Fig. 10) plus any key remaps and/or macros that you have previously saved to this layout. *Note: This action does not change the Thumb Key Mode or other configuration settings, just the layout file.*

6.3 Activate Dvorak Layout (prog + F4)

Loads the Dvorak.txt configuration file which corresponds to the default Dvorak Layout (see Fig. 11) plus any key remaps and/or macros that you have previously saved to this layout. *Note: No change to Thumb Key Mode or other settings.*

6.4 Activate Mac Thumb Key Mode (prog + F5)

Activates Mac Thumb Key Mode (see Fig. 14). *Note: No change to the Layout or other basic settings.*

6.5 Activate PC Thumb Key Mode (prog + F6)

Activates PC Thumb Key Mode (see Fig. 15). *Note: No change to the Layout or other basic settings.*

6.6 Activate Windows Thumb Key Mode (prog + F7)

Activates Windows Thumb Key Mode (see Fig. 13). *Note: No change to the Layout or other basic settings.*

6.7 Disable (Enable) Key Clicks (prog + F8)

The Advantage2 is equipped with a unique feature that provides a subtle electronic “click” each time a key press is registered. The purpose of the key click is to provide auditory feedback to the user regarding when a given key press has been registered by the computer to discourage “bottoming out”, which if done repeatedly can cause finger pain. Key Clicks are enabled from the factory but they can be toggled off or on.

6.8 Disable (Enable) Special Action Tones (prog + Shift + F8)

The Advantage2 provides a feedback “tone” to alert the user when they have “toggled” the keyboard into special modes such as Keypad, Num Lock, Caps Lock and Scroll Lock. The tone sounds twice when the special mode has been activated and once when the mode has been deactivated. Special Action Tones are enabled from the factory but they can be toggled off (or back on).

6.9 Soft Reset (prog + shift + F9)

Soft Reset erases all macros and remaps from the currently active layout and re-enables macro playback if it was disabled. *Note: Thumb Key Mode, Clicks/Tones and other basic settings are not affected.*

6.10 Disable Macro Playback (prog + F10)

Temporarily disables the playback off all saved macros until Macro Playback is toggled back on.

6.11 Program/Record Macro (prog + F11)

A macro is any string of characters or sequence key actions that are triggered by a single action. Macros are powerful productivity tools that allow users to save time and eliminate repetitive key strokes associated with common keyboarding tasks. The Advantage2 can be programmed to playback macros triggered by either a single key or a combination of keys. Individual macros can comprise more than 200 individual keystrokes and dozens of macros can be saved to the keyboard's onboard memory. *Note: When a macro is recorded, it is only assigned to the layout that was active during recording.*

To program a macro, hold Program and tap F11 to enter Program Macro Mode. The Num Lock LED will flash rapidly prompting you to select a "macro trigger". A macro trigger can be either a single key or key combination with modifier keys. *Note: The Program Key, the Keypad Key, and Modifier Keys (e.g., Ctrl, Alt, Shift, etc.) cannot be used as a single key macro trigger.* Once you have selected a macro trigger, the Num Lock LED indicator will begin to flash slowly while you type your macro content for recording. When you are finished recording your macro, tap the Program Key to exit from program macro mode.

Note: When recording a macro, the keyboard layout will represent the active layout including any custom remapped keys, but macro playback will be temporarily disabled. You cannot program a macro within another macro. While recording a macro, the characters will be output to the computer so you can see what you are recording if you have a text editing application open.

To erase a macro in the active layout, enter Program Macro Mode, select the appropriate trigger key(s) for the macro you wish to erase, and then tap the Program Key *before* recording any additional keystrokes.

Advanced features like individual macro playback speed, different press and release functionality and delays can be added to macros via the Advanced Macro programming tools. See Chapter 7.0 "Power User Tools" for details.

Note: If you are using long macros and want to execute them quickly in conjunction with other keyboard commands, we recommend increasing your macro playback speed. While a macro is playing back, other keystrokes on the keyboard are not registered.

6.12 Remap a Key (prog + F12)

In addition to macros, the Advantage2 also lets you copy (aka "remap") key actions from one location on the keyboard to another so that the layout can be customized for the user. Virtually any key on the keyboard can be remapped in two easy steps. Once you have activated Program Remap Mode, first select the action to be copied (the "source"), then tap the location where you want that action ("destination").

To remap a key, hold Program and tap F12 to enter Program Remap Mode. When you enter Program Remap Mode the Scroll Lock LED will flash rapidly prompting you to select a source action. Once you have selected a valid source key, the Scroll Lock LED will begin to flash slowly until you select the destination key, then it will revert to rapid flashing.

Note: When a key is remapped, it is only remapped in the layout that was active during remapping. Remapping affects both the unshifted and shifted actions for a given key.

Note: Key Remap Mode remains active and will continue to accept key remapping "pairs" until the Program Key is tapped to exit Program Remap Mode.

Swapping key actions

The Program Remap Mode feature moves one action at a time, it does not swap keys. To swap the location of two keys you must complete two separate remap actions.

Remapping a key action to a different layer (to or from the keypad layer)

To remap a key from the keypad layer (see 6.13 below) to the top layer, first turn on the keypad layer. Then turn on Program Remap Mode and select the source action, but before selecting the destination key, tap the “keypad” key to change to the top layer.

Unlike Program Macro Mode, during Program Remap Mode the keyboard will revert to the default layout (i.e., QWERTY or Dvorak) for key reassignments. Thus you cannot “lose” a key action by remapping it. Also different from programming a macro, during remapping the keys will not output to the computer.

6.13 Keypad Layer (aka the “embedded layer”)

Each Layout on the Advantage2 features a second virtual keyboard layer that can be used to be used to remap keys, store macros, access an embedded numeric 10-key (Num Lock on) or access a traditional arrow key cluster in the right key well. The Keypad Layer can be “toggled” on or off with the **Keypad Key**, or an optional Advantage foot switch can be used to “shift” the Keypad Layer on by pressing and holding the appropriate foot pedal. To access the embedded 10-key, tap the Keypad Key and then tap the “7” key to activate **Num Lock**.

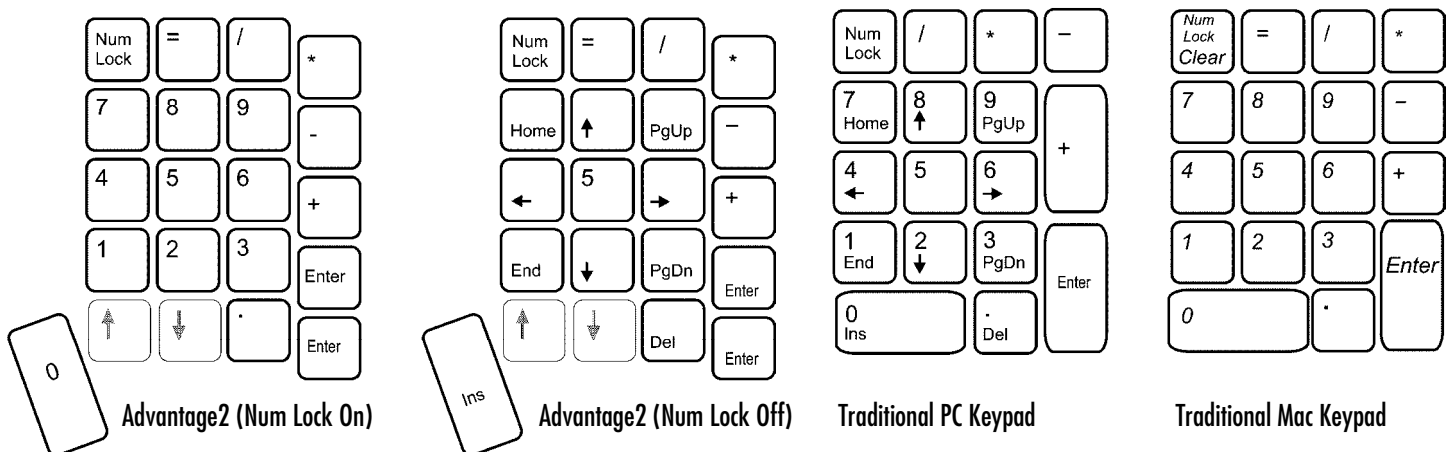
Note: 10-key commands (pictured below) are labeled on the front side of the Advantage2 keys. When used in conjunction with a foot switch, the embedded 10-Key increases productivity because the hands never have to leave the home row.

Numeric keypad actions and Num Lock

The Advantage2 embedded numeric keypad is shown in Fig 23, along with traditional keypad layouts for PC and for Mac. Num Lock is a critical function to understand for Windows/PC users. The Num Lock function can be confusing because on a desktop PC it totally changes the actions performed by most keys in the numeric keypad. With Num Lock off, the number actions change to directional actions. More confusion is caused by laptop PCs, which may use Num or Num Lock to activate their embedded keypads, rather than as the traditional Num Lock action. On a Mac computer, there is no Num Lock key equivalent and the Num Lock indicator LED will not typically illuminate.

Most PC computers boot up with Num Lock active. To manually turn Num Lock on or off, first activate the Keypad Layer by tapping the Keypad key. Then press the 7 key in the number row, which has Num Lock printed on the front face.

Fig 23. Embedded keypad differences showing Advantage2 keypad on the left, traditional PC & Mac keypads on the right.



7.0 Power User Tools

In addition to the Basic Onboard Programming Tools described in the previous section, the Advantage2 also has a number of powerful Advanced Programming Features designed for those looking to get the most out of their Advantage2 programmable keyboard. To access most of the features listed below, it is first necessary to activate “Power User Mode”. Those features are denoted with “PUM”.

Note: Advanced Programming Features utilize functions that are not labeled on the keys and can radically change the performance of your keyboard so proceed with caution. Even those users familiar with programmable keyboards in general, or a Kinesis Advantage keyboard, should read this manual in full before attempting to access any of the Advanced Programming Features.

7.1 Global Macro Playback Speed Adjustment (prog + pause + {1-9})

All Advantage2 macros default to a playback speed of “Speed3” on the Advantage2 which is equivalent to 12.5 characters per second (CPS) or approximately 150 words per minute (WPM). However, users can adjust the playback speed for all macros “globally” with a single programming shortcut. To individually set a macro to playback at a different speed, see Chapter 7.9 “Advanced Programming Features for Macros”.

To change the global Macro Playback speed, hold the Program Key and tap the Pause Key to enter Global Macro Playback Speed Adjustment Mode. All four LED indicator lights will flash to alert you that you are in an active programming mode. Then select a playback speed from 1 to 9 (1 being the slowest and 9 being the fastest) by tapping a key in the number row. Global Macro Playback Speed Adjustment Mode will exit and the LEDs will stop flashing even if you select an invalid key (i.e., any key besides 1-9). We recommend running a Status Report after changing the playback speed to confirm the change has taken effect.

Note: Before attempting to adjust Global playback speed, be sure the keypad layer is not active. If you have remapped the desired number to another location on the keyboard, you must use the new location for speed assignment, not the default location. If a macro has been assigned to the desired number row key, it will not affect programming the playback speed.

7.2 Hard Reset (Ctrl + F9 while plugging in keyboard)

A Hard Reset erases all of the changes saved to qwerty.txt and dvorak.txt, as well as configuration changes saved in state.txt. The keyboard will revert to the default QWERTY layout with the Windows Thumb Key Mode active. However, no other files in the active folder are changed or deleted by a hard reset, so hotkey layouts are not erased.

To initiate a Hard Reset, hold Ctrl and F9 while plugging the keyboard. All four LED Indicator Lights will flash four times to signal that the Hard Reset is complete. Hold the CTRL and F9 until the LED’s have stopped flashing.

Note: After a hard reset, especially if Ctrl is released too quickly, it is possible for the Ctrl key to become stuck. If you notice odd behavior while typing after a reset,, simply tap the Ctrl key you used to perform the Hard Reset.

Note: If you wish to save your changes to either the QWERTY or Dvorak Layouts for future use, we recommend backing up the configuration files to a location outside the active folder before performing a Hard Reset. See additional details below.

7.3 Power User Mode, “PUM” (prog + shift + esc)

Before accessing any of the Advanced Programming Features described below, it is first necessary to activate Power User Mode on the keyboard. To activate Power User Mode, press and hold the Program Key and the Shift Key, and then tap the Escape key. All four LED indicator lights will flash four times to indicate Power User Mode has been activated, and two times to indicate when it has been deactivated.

Note: If you accidentally hit Prog + Esc before pressing Shift, you may inadvertently generate a status report.

If you attempt to activate one of the features below without having first activated Power User Mode, nothing will happen. Once activated, Power User Mode will stay active until it is manually deactivated or a Hard Reset is performed. Unplugging the keyboard or performing a Soft Reset will not disable Power User Mode.

Note: When Power User Mode is active, it will show up as the bottom line of the Status Report. When it is inactive, it is not listed in the Status Report.

7.4 Opening the “Kinesis KB” V-Drive (PUM Required, Program + F1)

As described in Chapter 2.2 “Introduction to the SmartSet Programming Engine”, the Advantage2 contains a virtual flash drive (named “Kinesis KB”) where the keyboard’s layout files (e.g., QWERTY and Dvorak) and firmware files are stored. The Kinesis KB “v-drive” is normally hidden from your computer and for basic keyboard usage (including Basic Onboard Programming Tools) it is not ever necessary to access the v-drive. The primary reasons to access the v-drive would be to perform direct editing of a layout configuration file (visualize the layout, edit existing macros/remaps, and/or create new macros/remaps), or to perform a firmware update.

There are two ways to open the v-drive. If the keyboard is already plugged in, activate Power User Mode (See detailed instructions in Chapter 7.3) and then hold the Program Key and tap F1. If the keyboard is not plugged in or you are unable to access the V-drive using the method just described, you can force the V-drive open upon the enumeration of the keyboard by holding Ctrl + F8 briefly while plugging in the keyboard or booting up your computer.

Note: If you wish to have the V-Drive enumerate every time your computer boots up, open the “state.txt” in the Active Folder (see next section) and add the following line of case-sensitive text to the file: “v_drive_open_on_startup=ON”, and then save the file.

The appearance of the KINESIS KB v-drive will vary by device and operating system. On most computers running a Windows operating system, the Kinesis KB drive will usually “pop-up” automatically as a removable disk. If you do not see an AutoPlay popup, look in “My Computer” for a removable disk named “Kinesis KB”. On Mac operating systems, the V-drive will usually appear on your desktop. If it does not appear on your desktop look in Finder > Devices for “Kinesis KB”. In Android look in computer settings. In Chrome look in “files.” In Linux look in “my computer.

To close the v-drive after saving any files you have edited, you can either unplug the keyboard or press Program + F1 in which case the LED indicator lights will flash two times upon closing the V-drive. If you get a message from your operating system that the device was not ejected properly, you may ignore it, the Advantage2 was designed to be unplugged without following any specific ejection protocol.

7.5 v-Drive Contents

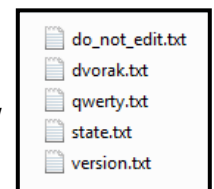
The v-drive contains two very important folders, named: “active” and “firmware.” *Note: If you have access the v-drive on a Windows computer and your Advantage2 was previously connected to a Mac, you may see some additional “hidden” folders that can be disregarded.* The firmware folder will normally be empty unless you have pasted a firmware update into the folder.

Active folder

By default, the Active folder contains 5 files, all of which are simple text (“.txt”) files. The files in the active folder can all be opened with any text editing program (e.g., Notepad, Microsoft Word, etc.), but only a few of the files are intended to be edited by the user:

1. do_not_edit.txt – This file is a temporary repository for macro fragments and is used by the firmware as a “scratch pad.” It is not user-editable and is not useful to review. Look at your layout files to view and edit your macros.
2. qwerty.txt – The qwerty.txt file contains any changes to the default QWERTY Layout. If the default Windows Thumb Key Mode is active and no remaps or macros have been made, the file will be empty. The PC and Mac Thumb Key Mode

Fig 24. Contents of “active” folder



- settings create special “automated” and stable remaps to the top four thumb keys (and two other keys in the case of mac mode).
3. `dvorak.txt` – The `dvorak.txt` file contains any changes to the default Dvorak Layout. If the default Windows Thumb Key Mode is active and no remaps or macros have been made, the file will be empty. The PC and Mac Thumb Key Mode settings create special “automated” and stable remaps to the top four thumb keys (and two other keys in the case of mac mode).
 4. `state.txt` – The `state.txt` file records the active settings of the keyboard as depicted in Fig. 25. In general this file should not be deleted or altered, and should be used only for reference when the Status Report function is inconvenient. However there are two editable features that are managed by user edits of this file.

Fig 25. Contents of default `state.txt`

```
startup_file=qwerty.txt
thumb_mode=WIN
key_click_tone=ON
toggle_tone=ON
macro_disable=OFF
macro_speed=3
power_user=false
```

4.1 *To have the v-Drive enumerate every time the keyboard is powered on, edit insert and save the following line of case-sensitive text to the `state.txt` file: “`v_drive_open_on_startup=ON`”.*

4.2 *Status Report Playback Speed – If your status report does not playback reliably or you want it to play back faster, firmware version 1.0.18 adds a line in `state.txt` for managing the speed. The default is “`status_play_speed=2`”. The maximize playback speed, change the number to 3. For a slower playback speed, change the number to 1. Check for firmware update files at <http://www.kinesis.com/advantage2-resources/>.*

5. `version.txt` – The `version.txt` indicates the firmware currently installed in the keyboard. If this file is deleted it will be regenerated, but if it is edited and saved it may provide the wrong information.

Hotkey layouts

If you have created custom hotkey layouts you will see additional `.txt` files in the Active Folder, one for each hotkey layout you have created. Hotkey layout files are based on either the underlying QWERTY or Dvorak Layout and are named so that the hotkey assigned to trigger the layout appears before the base layout. See Chapter 7.6- “Creating Hotkey Layouts” for additional information.

7.6 Creating Hotkey Layouts (PUM Required, `prog` + F2)

A hotkey layout is an alternative layout, based either on the default QWERTY or Dvorak layouts, which can create to for specific applications. A hotkey layout can store custom macros and remaps just like the default QWERTY and Dvorak layouts. Hotkey layouts are accessed through a convenient key combination that you select. QWERTY and Dvorak hotkey layouts are saved separately and assigned to either the QWERTY or Dvorak family. As such the same hotkey can be assigned to trigger a different layout for both QWERTY and Dvorak. but QWERTY hotkey layouts can only be accessed while in a QWERTY layout and vice versa.

To create a hotkey layout, first enter Power User Mode (`prog` + `shift` + `esc`). Then hold Program and tap F2. The Num Lock LED will begin flashing rapidly, prompting you to select a “hotkey” that you will use to access your new hotkey layout. Only alphanumeric keys can be assigned to a hotkey layout. Tap the desired hotkey and the LED will stop flashing.

For example, a QWERTY hotkey layout assigned to trigger-key Q will be named “`q_qwerty.txt`” and a Dvorak hotkey layout assigned to trigger-key 5 will be named “`5_dvorak.txt`”.

When you first create a new hotkey layout, that layout will exactly mirror the active layout at that time. If you wish to build a hotkey layout from scratch, immediately after creating the hotkey layout, perform a Soft Reset (`prog` + `shift` + F9) to erase the existing remaps and macros.

Note: If you attempt to create a new hotkey layout assigned to a key which already has a hotkey layout for that layout family (QWERTY or Dvorak), then you will lose any saved key remaps but macros will remain.

7.7 Activating a Hotkey Layout (prog + {hot key})

Once a hotkey layout has been created, you do not need to be in Power User Mode to access it. Simply hold the Program Key and tap the appropriate hotkey to activate the layout.

Remember that hotkey layouts are assigned to either the QWERTY or Dvorak family. QWERTY hotkey layouts can only be accessed while in another QWERTY layout, and vice versa. As such, the same hotkey can be assigned to both a QWERTY and Dvorak hotkey layout without creating any conflict.

7.8 “Direct Editing” of layout files

The Advantage2 is a powerful programmable keyboard. Most users will find that the Basic Onboard Programming Tools are sufficient for their purposes but power users may wish to access one or more layout configuration files to directly build or edit custom macros and/or key remaps. This Chapter covers direct editing of layout files and includes a “dictionary” of available key actions, their tokens, and sample macros for your convenience.

Layouts

As described in earlier sections of this Manual, the configuration settings for each custom Layout are stored in a separate “.txt” file which is saved to the keyboard’s onboard memory. When a user toggles between layouts the keyboard calls up the appropriate .txt file to determine the active keyboard configuration. Each of these individual .txt layout files can be accessed from the Kinesis KB v-drive (see Chapter 7.4) inside of the “Active” folder. Each layout file contains two types of custom configurations: 1) Macros and 2) Key Remaps. Each Layout file contains lines of “code” corresponding to each key remap and/or macro custom programmed to that specific layout. For simplicity, the .txt file only displays changes to the respective default layout, either QWERTY or Dvorak. Any given layout can be modified by both onboard programming commands and through direct editing.

Accessing the layout files

As described in Chapter 7.3, to access any of the layout files first enter Power User Mode (prog + shift + esc), and then “mount” the Kinesis KB v-drive to your computer (prog + F1). Then open the “active folder” on the v-drive to view the .txt layout configuration files. Open the layout configuration file of your choice with a plain text editing program. If you do not have access to a plain text editor, you may use a different text editing program (e.g., Microsoft Word) but be sure to select the “plain text” or “simple text” format when saving your changes to layout configuration file. It is a good idea to rename and save a backup outside the active folder or on your hard drive. Listed below are commonly-available text editors for different operating systems:

- Windows: Notepad provides simple text only. If you use another text editor or word processor, save as plain text or simple text.
- Mac OS X: TextEdit is the default editor. Under TextEdit “Preferences” select “plain text” as the format. Normally if you open a plain text file, it will save it in the same format by default.
- Linux: For Ubuntu the default text editor is Gedit, which is similar to Microsoft Notepad.

File Naming Conventions

Qwerty.txt and Dvorak.txt represent the two default layouts. Hotkey layouts are named with the designated hotkey preceding the layout family, either QWERTY or Dvorak. Examples:

- “a_qwerty.txt” (Qwerty hotkey layout assigned to the hotkey “a”)
- “1_dvorak.txt” (Dvorak hotkey layout assign to hotkey “1”)

Preparing the v-drive for direct editing

If you are planning to directly edit a layout file without having first done any “onboard” remapping to that particular layout, please review

Chapter 9.1 for guidelines on “conditioning” files before direct editing.

Layout configuration file syntax

Each line of characters in the .txt file represents an individual remap or macro. Kinesis has developed a simple syntax that differentiates macros and remaps in the layout configuration file for easy viewing and editing. Macros are denoted with “curly brackets” (i.e., { and }) and remaps are denoted by “square brackets” (i.e., [and]). Basic keys are denoted by a single character but modifier keys and other special actions have longer, Kinesis-defined “tokens”, which are used to identify the key. In some cases the appropriate USB hex code can be used in place of the Kinesis tokens if users find that preferable.

As described earlier, a default QWERTY or Dvorak Layout configured for Windows Thumb Key Mode will have an empty .txt file. If PC or Mac Thumb Key Mode has been activated, then the appropriate key remaps will have been automatically added to the .txt file. PC Mode has 2 remapped keys whereas Mac Mode features 8 remapped keys.

Language requirement for direct editing

Your computer must be using the English (US) keyboard layout to edit the layout file. Other language drivers use different codes/positions for certain keys important for programming, such as [] and { }. If you want to use direct programming to make a macro for a language other than U.S. English, it is better to first make the macro using “onboard programming.” Then you can review and edit it as needed with direct editing. However, you will need to translate certain keys in the “dictionary” below in order to get the desired output. For keys that change between English and your desired language, type that key with both drivers to make yourself a custom language dictionary. Then use the English version of that key in the layout file. If macros are played while a different keyboard language is active than the language for which it was designed, some key actions will change.

Direct programming or editing a remap

Remaps are denoted with square brackets [] around the desired “Destination Key” then > (shifted period), then square brackets again around the desired “Source Key”.

Example 1: The Q key will perform the letter “a”.

```
[Q]>[A]
```

Note: [Q]>[A] and [Q]>[a] both produce the same lower case “a” output.

Example 2: The Right Windows key will perform the “shift” action.

```
[rwin]>[shift]
```

Note: After the keyboards has been programmed, the lower case action of letter keys will always be produced unless the keyboard's Caps lock is on when pedal is pressed. For all alphanumeric keys, the un-shifted action will be produced unless the keyboard's Shift key is held. However, a macro can be created which combines Shift and another key to produce the shifted action automatically (see Programming a macro below).

Direct editing a macro

When direct editing a macro, each input and action must be surrounded by “curly brackets”(i.e., “{ }”). Longer macros can be tedious to write from scratch so onboard programming is recommended, at least as an initial step. Direct editing can be a useful tool for creating shorter macros or editing/fine-tuning longer macros. Take advantage of existing macros and examples as templates which can be edited.

Note: Macros normally play when the trigger key is depressed, without waiting for release. If you want the macro to play only when the key is released, see Chapter 7.9 “Advanced Programming Features for Macros” which describes the “Press and Release” feature.

Macro syntax examples

Example 1. Caps Lock key plays the word “go”:

```
{Capslock}>{g}{o}
```

Example 2. The Escape key in the keypad layer plays the word hello

```
{kp-escape}>{h}{e}{l}{l}{o}
```

Example 3. Using modifiers within macros, playing “Hi Joy!” by pressing the pause key:

```
{pause}>{-shift}{h}{+shift}{i}{space}{-shift}{j}{+shift}{o}{y}{-shift}{!}{+shift}
```

Example 4. Macro plays “1+2=3” using the F12 key:

```
{F12}>{1}{-shift}{=}{+shift}{2}{-}{3}
```

7.9 ADVANCED PROGRAMMING FEATURES FOR MACROS

Several special features can be incorporated into macros. A different action can be produced on the press and on the release of the key. Also a faster or slower output speed can be selected which will override the Global Macro Playback speed setting (covered in Chapter 7.1). It is also possible to program delays into a macro.

Different actions on press and release

Place braces with a single space, { } (not {}) in between the “press” and “release” actions.

Example 1. Press produces F1 function key and release produces F2 function key:

```
{W}>{F1}{ }{F2}
```

Example 2. Pressing tab acts just like pressing and holding ctrl-alt-4, and releasing is just like releasing ctrl-alt-4:

```
{tab}>{ctrl}{alt}{4}{ }{4}{ctrl}{alt}
```

Individual playback speed settings for macros

In Chapter 7.1 setting the Global Macro Playback Speed is discussed in detail. However, with direct editing of a macro, the Advantage2 allows individual macros to have a playback speed different than the global speed, and the speed can be changed within the body of the macro as well. To modify a macro’s playback speed, simply input the desired speed in braces before the characters/actions whose speed you wish to modify. Multiple speed modifiers can be included in a single macro.

Example 1. This left pedal macro below plays back the phrase “fast slow” where the word “fast” is typed at speed5 and the word “slow” is typed at the speed9.

```
{pedal}>{speed5}{f}{a}{s}{t}{space}{speed9}{s}{l}{o}{w}
```

Adding delays to macros

Macros can have one or more internal delays. Delays are most commonly used to support a double click action but you may find other applications for them. The Advantage2 supports two different delays: 125ms and 500ms (milliseconds). These delays can be used separately or

Fig 26. Macro playback speeds

Speed1	4.2 Characters per Second	~50 Words per Minute
Speed2	8.4 CPS	~100 WPM
Speed3 (Default)	12.5 CPS	~150 WPM
Speed4	22.7 CPS	~270 WPM
Speed5	34.2 CPS	~400 WPM
Speed6	62.5 CPS	~750 WPM
Speed7	84 CPS	~1,000 WPM
Speed8	125 CPS	~1,500 WPM
Speed9	250 CPS	~3,000 WPM

in combination to create a delay of any length in increments of 125ms. To insert a delay, use braces around the delay time and a “d” in front of the chosen increment: “{d125}” or “{d500}”. Attempting to insert a delay other than 125ms or 500ms will cause an error.

Example 1. The Q key plays “a” then delays 500 ms, then plays “b”:

```
{Q}>{a}{d500}{b}
```

Example 2. The Hyphen key plays “F1” then delays one second (1000 ms = 500ms +500ms), then plays “F2”:

```
{hyphen}>{F1}{d500}{d500}{F2}
```

Incorrect syntax or language

If incorrect syntax or language is used in a layout configuration file, the keyboard will usually resort to a default key action. However, in some cases pressing a key that has invalid programming may not produce any key action at all. If problems arise, remaps and macros can be erased manually by direct editing the problematic lines of “code” in the layout configuration file or by reversing any custom programming using the appropriate onboard programming shortcuts, examples below.

To restore a key to its original action, press Program then F12 to enter Program Remap Mode, and tap the corrupted key twice— once to set it as the Source and once more to set it as the Destination.

To erase an existing macro, press Program then F11 to enter Program Macro Mode, then tap the trigger key followed by the Program Key to record an “empty” macro”.

If the above methods don’t fix the problem a Hard Reset (covered in Chapter 7.2) may be necessary.

Note: While it may be possible to store notes and other “non-programming” text/language within a layout configuration file, Kinesis does not recommend doing this as it may have unintended consequences.

“Commenting Out” language in a layout file

If you wish to temporarily disable a specific macro or remap in a given layout, it is possible to simply add an asterisk (*) in front of the appropriate line of code in the .txt file. The asterisk will cause that macro or remap to be bypassed by the keyboard. To reactivate that macro or remap simply remove the asterisk.

Saving Changes

Changes made to a layout configuration file will not take effect until the .txt file is saved to the Active folder and the Kinesis KB drive is closed/unmounted. The drive can be unmounted either by using the shortcut Program+F2 or by re-plugging the keyboard. Make sure to save any changes to the .txt file before unmounting the drive.

Note: if you wish to implement changes without closing the v-drive, after saving the layout file you can switch thumb key modes (prog + F5, F6, or F7) or layout (prog+ F4 if you are using QWERTY). Then switch back to your previous configuration/layout. This process reads the latest saved files.

8.0 Firmware Update, “PUM” (prog + shift + U)

Your Advantage2 keyboard comes from the factory with the most up to date version of the firmware as of its build date. Kinesis may at times release new versions of firmware to add features or fix bugs. If you purchased your Advantage2 from one of Kinesis’s Authorized Resellers (as opposed to from the Kinesis store), it is possible that your keyboard has an older version of firmware. The SmartSet technology on your Advantage2 allows you to update the keyboard’s firmware yourself so you can stay up to date with the latest releases from Kinesis and ensure compatibility with the newest operating systems.

Before performing a firmware update, run a Status Report to confirm the version of firmware your keyboard is currently running. Then check for available updates at <http://www.kinesis.com/advantage2-resources/>.

Note: If you are uncertain of the process or the benefits of a firmware update, Kinesis recommends that you consult with our tech support team before attempting to perform an update.

To update the firmware, perform the following steps:

1. Obtain the appropriate version of Advantage2 firmware update (a “.upd” file) from Kinesis tech support or the web link above.
2. Activate Power User Mode (prog + shift + esc).
3. Open the V-drive (prog + F1).
4. Open the Firmware folder.
5. Copy and paste the new firmware file to the Firmware folder.
6. Make a second copy of the “upd” file in the Firmware folder.
7. Rename the second copy of the new firmware file “update.upd” - after a successful update, this file will disappear.
8. Initiate Firmware Update (program + shift + U).

If you have a valid firmware file named “update.upd” saved to the Firmware Folder, the LED’s will flash four times and the keyboard will become unresponsive for a moment. After 10-12 seconds the keyboard will re-enumerate with the new firmware installed. Run a Status Report to confirm the update was successful.

9.0 Keyboard Care & Maintenance

9.1 Formatting and “conditioning” the v-drive

Because the Advantage2 keyboard was designed to operate in a multi-platform environment, users may occasionally experience a drive error or corrupt configuration file that necessitates reformatting the v-drive. Please be assured that if this becomes necessary, the default configuration files will be regenerated automatically when the keyboard is replugged or the system is rebooted after a v-drive reformat. However, it is wise to always backup the contents of your v-drive on your computer’s hard drive.

If you plan to use on-board programming exclusively, no special actions are necessary after reformatting the v-drive. However, if you plan to use direct editing of configuration files such as qwerty.txt or a hot key layout file, you must first “condition” this file before opening and resaving it. Conditioning is as simple as switching between two thumb key modes while the v-drive is closed and your desired layout is active. This “remaps” the layout file while the v-drive is closed, preventing a corrupt file from being created with direct editing.

For example, if you use QWERTY and the Windows Thumb Key Mode, after formatting the v-drive, you should switch to PC Mode and then back to Windows Mode while the v-drive is closed. In a second example, if you create a hot key layout and plan to do direct editing, you must first switch to a different thumb key mode and then back to your desired thumb key mode after creating the hot key layout, before opening the v-drive to perform directing editing and saving of the file.

9.2 Cleaning precautions

To clean your Advantage2 keyboard, use a vacuum or canned air to remove dust from the keywells. Using a water-moistened cloth to wipe the surface will help keep it looking clean. Avoid using solvents such as rubbing alcohol which might remove some ink from the top label.

9.3 Keycap removal and moving precautions

A keycap removal tool is provided with the keyboard to facilitate changing one or more of the top four thumb keys when switching between Thumb Key Modes (Windows, PC, Mac). If you wish to move other keycaps, please be aware that different rows have different keycap styles. Moving a keycap to a row that requires a different keycap row style will create problems in usability and comfort.

10.0 Troubleshooting, Technical Support & Repairs

For troubleshooting tips and to download the latest Advantage2 firmware, visit:

<http://www.kinesis.com/advantage2-resources/>

Contacting Kinesis Technical Support

Kinesis offers free, lifetime technical support from trained agents based in our US headquarters. Kinesis has a commitment to deliver best-in-class customer service and we look forward to helping if you experience any problems with your Advantage2 keyboard or other Kinesis products. Kinesis Technical Support is available Monday through Friday (excluding US Holidays) between the hours of 8:30 — 11:30am and 12:30 — 4:30pm (Pacific), by calling 800-454-6374 (US only) or 425-402-8100. You can also email technical support at tech@kinesis.com. Basic support questions can also be submitted via Twitter at [@KinesisErgo](https://twitter.com/KinesisErgo).

To obtain the fastest possible service when contacting Kinesis Technical Support, please be prepared to document your purchase date, as well as your product model number, and your serial number. Also, please have the brand, model and operating system of your computer system handy.

Return Merchandise Authorizations (“RMAs”)

For any repair, regardless of warranty coverage, you must first contact Kinesis Technical Support to explain the problem and obtain a Return Merchandise Authorization (“RMA”) number to write on your package. Packages sent to Kinesis without an RMA number may be refused. Keyboards will not be repaired without information and instructions from the owner.

Repairs

This product must be repaired by authorized, qualified personnel only. Unauthorized or inexpertly carried-out repairs may seriously jeopardize the safety of the user (such as from fire danger) and may invalidate your warranty.

Packaging and Shipping

In you need to ship a product back to Kinesis, use its original packaging or other suitable packaging that protects the device against impact and shock. You should insure the package with your carrier as Kinesis is not responsible for items until they are received at the Kinesis repair center.

11.0 Accessories & Upgrades

Kinesis offers a number of accessories and upgrades designed to enhance your comfort and productivity, or to allow you to customize your keyboard. Please visit kinesis.com or contact Kinesis Sales (sales@kinesis.com, 800-4564-6374) to learn more.

12.0 Warranty

Kinesis Limited Warranty

Kinesis Corporation (“Kinesis”) warrants to the original retail purchaser that this Kinesis product (“Product”) is free from defects in materials and workmanship and will perform substantially in accordance with the Product documentation for three years from the date of purchase. This Warranty is not transferrable and does not apply to any software which might have been enclosed with the product, which are covered by a Kinesis License Agreement. If Product fails due to accident, abuse, inappropriate use, or normal wear, Kinesis shall have no responsibility under this Limited Warranty.

Purchaser’s Exclusive Remedies

Subject to your retailer’s return policy, during the first THREE (3) years after the date of original purchase, the exclusive remedy for a defect in this Kinesis Product shall be, at Kinesis Corporation’s option, either repair or replacement of the product. If you suspect the Product is not working properly or if you have questions about the performance of the Product, contact Kinesis Technical Support. If you wish to return the Product to Kinesis for any reason, you must obtain from Kinesis or the authorized reseller from whom you purchased, an RMA number and instructions for returning the product. You are responsible for the cost of shipping the product to Kinesis. Within the United States and Canada, Kinesis will ship products repaired or replaced under warranty to you by ground at no charge. Customer will be responsible for all duties and/or taxes on international shipments which must be prepaid. Repair parts and replacement Product will be either reconditioned or new, at Kinesis’ discretion.

Disclaimer of Other Warranties

The warranty and remedies set forth above are exclusive and in lieu of all others, whether oral or written, express or implied. Kinesis specifically disclaims any and all implied warranties, including, without limitation, warranties of merchantability and fitness for a particular purpose. No Kinesis dealer, agent, reseller, or employee is authorized to make any modification, extension, or addition to this warranty. Kinesis does not warrant that the product will meet your requirements, or that operation of the product will be uninterrupted or error-free, or that all errors will be corrected.

Limitation of Liability

Kinesis is not responsible for special, incidental, or consequential damages resulting from any breach of warranty, or under other legal theory, including but not limited to lost profits, downtime, goodwill, damage to or replacement of equipment and/or property nor any costs of recovering, reprogramming, or reproducing any program or data stored in or used with Kinesis products.

13. Appendix

13.1 "DICTIONARY" OF TOKENS FOR AVAILABLE KEYBOARD ACTIONS

Key Description	Token (Top Layer)	Token (Keypad Layer)	Notes
F1	F1	kp-F1	
F2	F2	kp-F2	
F3	F3	kp-F3	
F4	F4	kp-F4	
F5	F5	kp-F5	
F6	F6	kp-F6	
F7	F7	kp-F7	
F8	F8	kp-F8	
F9	F9	kp-F9	
F10	F10	kp-F10	
F11	F11	kp-F11	
F12	F12	kp-F12	
print screen	prtscr	mute	
scroll lock	scroll	vol-	
pause	pause	vol+	
=+	=	kp=-	
1!	1	kp-1	
<u>2</u> @	2	kp-2	
3#	3	kp-3	
4\$	4	kp-4	
5%	5	kp-5	
6^	6	kp-6	
7&	7	kpnumlk	
8*	8	kp=	
9(9	kpdiv	
0)	0	kpmult	
hyphen	hyphen	kpminus	
tab	tab	kp-tab	
Q	Q	kp-Q	
W	W	kp-W	
E	E	kp-E	
R	R	kp-R	
T	T	kp-T	
Y	Y	kp-Y	
U	U	kp7	
I	I	kp8	
O	O	kp9	
P	P	kpmin	
\	\	kp-\	
Capslock	caps	kp-caps	
A	A	kp-A	
S	S	kp-S	
D	D	kp-D	
F	F	kp-F	
G	G	kp-G	
H	H	kp-H	
J	J	kp4	
K	K	kp5	

Continued on next page

Continued, "DICTIONARY" OF TOKENS FOR AVAILABLE KEYBOARD ACTIONS

Key Description	Token (Top Layer)	Token (Keypad Layer)	Notes
L	L	kp6	
; :	;	kpplus	
' "	'	kp-'	
Z	Z	kp-Z	
X	X	kp-X	
C	C	kp-C	
V	V	kp-V	
B	B	kp-B	
N	N	kp-N	
M	M	kp1	
, <	,	kp2	
. >	.	kp3	
/ ?	/	kpenter	
accent/tilde	`	kp-`	
International (near to L Shift)	intl-\	kp-insert	
left arrow	left	kp-left	
right arrow	right	kp-right	
up arrow	up	kp-up	
down arrow	down	kp-down	
open bracket [obrack	kp.	
close bracket]	cbrack	kpenter	
Left Shift	lshift	kp-lshift	
Right Shift	rshift	kp-rshift	
Left Ctrl	lctrl	kp-lctrl	
Right Ctrl	rctrl	kp-rctrl	
Windows menu (application)	menu	kp-menu	
Right Windows	lwin	kp-lwin	
Left Windows	rwin	kp-rwin	
Right Alt	ralt	kp-ralt	
Left Alt	lalt	kp-lalt	
enter	enter	kp-enter	
space	space	kp0	
home	home	kp-home	
end	end	kp-end	
page up	pup	kp-pup	
page down	pdown	kp-pdown	
Delete (Mac fwd delete)	delete	kp-delete	
Backspace (Mac Delete)	bspace	kp-bspace	
Play/Pause	play		
Next Track	next		
Previous Track	prev		
Mute	mute		
Volume Down	vol-		
Volume Up	vol+		
calculator (pc only)		calc	
Mac power (on pc, does shutdown)	macpow	kp-macpow	
Mac keypad =	kp=mac		
"Toggle" Keypad Layer on/off	kptoggle		Map to both top layer and KP layer for two-way switching
"Shift" Keypad Layer on/off	kpshift		Map to both top layer and KP layer for two-way switching

13.2 History of the Kinesis Family Contoured of Keyboards

Development of the first Kinesis Contoured ergonomic keyboard began in 1991, and involved extensive research and collaboration with experts from the fields of medicine, ergonomics, and engineering. The guiding design principal was to provide the most effective design that would co-optimize comfort and productivity, without requiring users to re-learn how to type. And it had to be commercially feasible to manufacture.

Since its commercial debut in 1992 as the first letter-based ergonomic keyboard in the US, the Kinesis Contoured keyboard design has been widely recognized for providing the ultimate in keyboarding comfort and productivity. The Kinesis contoured design has been imitated by others interested in paying lip-service to ergonomics, but no keyboard design is as effective as the Kinesis Contoured to address the major repetitive strain injury ("RSI") risk factors associated with keyboarding, while at the same time enhancing productivity.

Fig 25. Early adjustable working prototype



Fig 26. First prototype used in workplace



Fig 27. Model 100, August 1992



13.3 Ergonomic Guidelines

Adapting tools and environments to reflect human capabilities — the science of ergonomics — is crucial to enhancing comfort and reducing injury. Ergonomics also makes an important contribution by educating people in the safe, healthy use of technology products. As a result, ergonomic issues involve many aspects of the work environment. No single product can be expected to provide a solution for all of the varied ergonomic concerns in the workplace.

Your experiences with a Kinesis keyboard will be affected by a number of non-keyboard factors, including your stress level, the chair you sit in, and the desk and other work surfaces in your office. In fact, hand and arm injuries can result from elements of your workstation other than your keyboard.

To enhance the comfort of your work environment, Kinesis has joined with Herman Miller, Inc. to provide guidance for creating an ergonomically appropriate workspace. The following ergonomic guidelines are reprinted with the permission of Herman Miller, Inc.. These guidelines include references to ANSI (American National Standards Institute) standards. They do not constitute research conducted by Kinesis.

Introduction by Herman Miller, Inc.

The position and location of the furniture and equipment in your office are related to the size and shape of your body. For example, when you adjust the height of your chair so that your feet rest flat on the floor, you may find that your work surface is too high. To work comfortably, you must make a series of adjustments to the components around you.

Start by adjusting your chair. Go on to adjust your work surfaces and finally your computer equipment. Remember, if you experience discomfort while working, consult a health care professional.

Adjusting Your Chair

First adjust your "Seat-height". Seat-height means the distance from the floor to the top of your chair's seat when you are sitting in your chair. First, sit in your chair in a comfortable, upright position. Adjust your seat height up or down so that your feet rest comfortably flat on the floor and your thighs are approximately parallel to the floor. If your feet dangle slightly and the backs of your thighs press hard on the front of the seat, the chair is probably too high. If your knees are elevated and your thighs don't touch the front of the seat, the chair is probably too low.

If you like to lean back when working, try it now. If your heels are lifted off the floor, consider lowering your chair. If your heels rise as you push off with your feet to lean back, consider loosening your chair's tilt tension.

If you like to sit forward, try it now. If you must tuck your feet in or stick them out in front of you, consider raising your chair. If you feel the chair seat gives too much, consider tightening your chair's tilt tension. When you have adjusted your chair, take a look at the standard ranges recommended by ANSI. Compare the position of your chair with the ANSI ranges.

ANSI-Recommended Seating

1. Seat height should range from 16" to 20.5". This refers to how high the chair seat should be with a person's weight pressing on the cushions.
2. Seat depth for chairs with rectangular cushions or chairs made of hard materials should range from 15" to 17". Seat depth refers to the distance from the front edge to the back edge of the seat cushion. Seat depth can be greater if the front edge of the seat is soft or curved.
3. Seat width should be at least 18.2" measured across the middle of the seat. Seat width refers to the side-to-side distance across the seat cushion.
4. Distance between armrests should be at least 18.2" measured between the inner edges of the armrests.
5. The backrest should be at least 12" wide in the lower back area.

Adjusting your work surface

The proper height of the work surface is related to the clearance you have beneath it to accommodate your legs while in a seated position.

1. Pull up to the work surface while seated. With your feet flat on the floor, adjust the height of your work surface so that your knees do not bump the edge of the work surface, pencil drawer, or keyboard support tray (when the tray is in its working position). The tops of your thighs should not touch the underside of the work surface.
2. When pulled up to the work surface, your feet or knees should not bump against the back of the work surface or wall supporting the work surface.
3. Swivel to grasp something within easy reach on your work surface. You need enough clearance beneath your work surface to move freely. Your knees should not bump against storage drawers or support brackets.
4. While sitting in an upright position, your forearms should rest comfortably on the work surface.

If the height of the work surface causes your shoulders to be raised up or hunched, consider lowering your work surface. If you must slump or hunch over your work surface, consider raising it so that you can work in a comfortable, upright position. Check the height of your work surface against the standards recommended by ANSI.

According to ANSI

1. Knee space should measure at least 20" from side to side under the work surface; 24" of knee space is preferred.
2. The underside of the work surface or keyboard tray should be higher than your knees. If you work at a desk with a work surface that cannot be raised or lowered, the clearance under the work surface should be at least 26.2".

There should be at least 12.2" of front-to-back clearance at knee height, measured from underneath the front edge of the work surface back toward the wall supporting the work surface. Taller people will need more clearance. Now adjust your Kinesis keyboard and computer monitor.

Adjusting your Keyboard

Adjust the angle and height of your keyboard so that the front of the keyboard is approximately at the same height as your elbows. Your forearms should be parallel to the floor. Be Careful of the Following:

1. Are you striking the keys on your keyboard too hard? Try to remember to soften your touch.
2. Are your shoulders raised or hunched? Relax and lower them. If the armrests of your chair are forcing your shoulders up, consider asking to have the armrests removed. If your work surface is forcing your shoulders up, consider asking to have it lowered.
3. Do you keep your hands poised above the keyboard? Relax them; don't allow yourself to keep your hands frozen in one position. Remember mini-breaks.
4. Are you leaning against a sharply angled edge? Move back to relieve pressure on your forearms.
5. Are you leaning over to reach things in your workstation that could be placed closer? Do you often reach behind your body or above shoulder height to retrieve something that could be moved forward or down? Try to find an arrangement that keeps materials you frequently use within convenient reach (about 20" away for a heavy object).

Finally, listen to your body. If you think you may be more comfortable adopting a different posture or way of working, experiment! And if you are experiencing persistent discomfort or unusual sensations, see a health care professional for advice.

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