

Han Korean Kit Demo v.1.1

(HKK)

on

Macintosh

by

H ηS ft

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1. Introduction

Han Korean Kit allows the user to use Hangul (Korean Language) on virtually almost every Macintosh applications with System7.0 or above. For the incompatibility issue, refer to the last section of this manual.

It has been more than a decade since the Macintosh computer was first introduced in 1984. However, not much effort was made to implement appropriate Hangul on the Macintosh. Currently, the widely used Hangul in South Korea is based on two-byte Wansung code scheme which regards all Hangul syllables as ideographic characters because of Hanja, the Korean name for Chinese ideographic characters. The natural result of this is the incapability of representing all the possible combinations of Hangul characters.

Rather than evolving piecemeal like most writing systems, Hangul is the result of deliberate, linguistically informed planning. It has been called "... probably the most remarkable writing system ever invented"(F. Coulmas, *The Writing Systems of the World*, Oxford: Basil Blackwell, 1989:118). Linguistically, it can also represent most sounds in the world.

The advantage of this software is that the user can produce any possible Hangul syllables he or she wants on the Macintosh computer because it uses the character encoding scheme rather than the syllable encoding scheme. So far, with Wansung code, people worked around the problem by using just different phrases when a non-existent syllable in Wansung code should be used. But that's not what King Sejong expected when he and a group of scholars created Hangul in 1443.

Thus, Han Korean Kit was finally developed. The idea is that every possible syllable should be represented on the computer by using Hangul the same way as English alphabets. Han Korean Kit can represent all possible 11,172 syllables whereas Wansung can implement only 2350 syllables on the Macintosh computer. For more detailed information about different Hangul code schemes, refer to the Toctac Help file in Toctac application.

By using just one-byte for Hangul implementation, there is a lot of important benefit. First of all, in almost every software, Hangul can be used without cumbersome localization problem. For example, Han Korean Kit works with QuickDraw GX, which is a major advancement in System7.5. Currently, as of the release date of this software, no two-byte language kits including Wansung Hangul(HangulTalk), Japanese Language Kit, or Chinese Language Kit work correctly with QuickDraw GX. Han Korean Kit can also work with Super ATM, or Multiple Master Fonts, if available. A document using Han fonts for Hangul is printed the same speed as an English document saving a lot of time for the user. Another advantage is the cost: A two-byte Wansung Hangul PostScript font costs a few hundred dollars as of the release date of Han Korean Kit.

The only shortcoming of Han Korean Kit is that Han fonts show irrectangular type Hangul. This drawback could be overcome by using WorldScript™ I on the Macintosh computer. Further development of Hansoft will be made to implement WorldScript™ I. Mostly, the irrectangular type Hangul syllables are widely used for titles. The good news is that the use of irrectangular type Hangul is increasing due to the fact that the more beautiful fonts are available.

This demo does everything the full program does, but it shows Demo dialog at startup. To use Han Korean Kit, you should at least have System/Finder versions 7.0 or later.

The full version of Han Korean Kit contains :

Toctac1.3, Toctac1.3 Help(in Korean): A Hangul code converter and its Help file.
Hantorie™ 1.1: A control panel which enables inline input.
Han fonts: Seven Han fonts including bitmapped, TrueType, and PostScript fonts.
Keyboard files: Four keyboard files: KongHan(3-set), KSHan(2-set), and their Drorak versions, KongHanDvorak, KSHanDvorak.
Sample Han Fonts: A sample file of Han Fonts (Color).
Sample Han Fonts (B & W): A sample file of Han Fonts (Black and White).

Pricing information is given in 'Ordering Form & Prices' and you can purchase them from Hansoft in the States, Jang-Han Information System in South Korea. You are encouraged to duplicate and spread copies of this Demo HKK. Naturally we hope you will decide to buy Han Korean Kit if it's of use to you, but beyond your financial support, we would also like to get your feedback and suggestions. On our part, we will continue to make improvements.

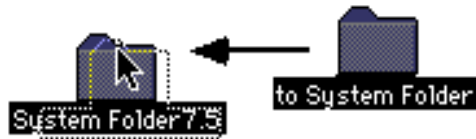
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2. How to Install HKK

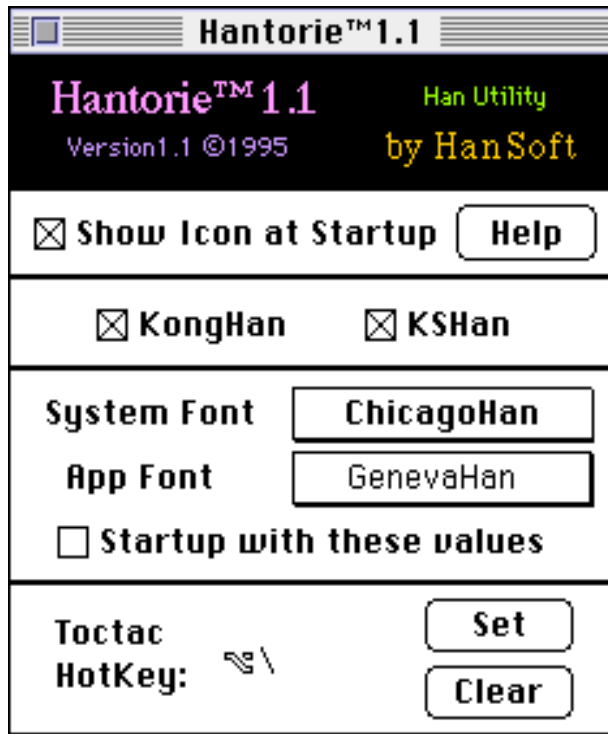


1. Quit all your programs if there are any programs running.
2. Make sure that the System Folder is closed, then drag Hantorie™ 1.1 Demo, your favorite keyboard file, and ChicagoHan, GenevaHan, and TerminalHan fonts respectively from 'to System Folder', or the whole 'to System Folder' onto the System Folder icon. Don't drag into the System Folder window, but instead onto the icon when the system folder was not open. Click OK to agree with all the questions asked in the dialogs. If you want to make sure everything is OK, Hantorie™ 1.1 Demo should have been copied to Control Panels Folder, the keyboard file to system file, four bitmapped fonts to Fonts Folder. For more detailed information of font installation in System7.0 and 7.0.1, refer to the font section of this manual.
3. Restart your Macintosh. If you do not want to load Hantorie™ 1.1, hold down shift key right before Hantorie™ 1.1 icon shows up during the restart.

3. How to Use HKK

Configurations

After Hantorie™ 1.1 has been successfully installed, open it to adjust the configurations. Hantorie™ 1.1 window contains four check-boxes and two PopUp button.



Checkboxes:

- | | |
|------------------------------|---|
| 1. Show Icon at Startup | When checked, Hantorie™ icon will be shown. |
| 2. KongHan | This checkbox is for a three-set keyboard. This function is not needed if the user uses a complex character in the KongHan keyboard. However, if the user prefers to combine simple consonants or vowels to represent a single complex consonant or vowel, this checkbox needs to be checked. |
| 3. KSHan | This is for a two-set KS (Korean Standards) keyboard. displayed for your selection. |
| 4. Startup with these values | The values of two popup buttons are saved and used at startup when this box is checked. Change will take effect after restart. |

PopUp buttons:

- | | |
|---------------------|--|
| 1. System Font | The default value should be set to ChicagoHan. Change it to Seoul before using a Wansung application. |
| 2. Application Font | The default value should be set to GenevaHan. Change it to AppleMyoungjo before using a Wansung application. |

These features are very useful when the user needs to switch Hangul applications with different codes back and forth. The application font selection changes both the default application font and the current application font. If the user had set Application Font to GenevaHan, whenever the user opens an application which uses the default font like SimpleText, the initial font setting would be GenevaHan. The change of System Font is not recommendable when it's not necessary.

- For HangulTalk and QuickDraw GX in System7.5 users only: Usually, the change of fonts in the popup buttons will take effect after the user restarts the Mac.

Entering Hangul Characters on a Document

First select the keyboard you installed to use Han fonts. The current active keyboard

has a mark beside the icon as following. The user can assign a default value in the Keyboard control panel. The change will take effect after restart. The picture shown below has WorldScript™ II software installed.



Once the keyboard has been selected, the user can open an application and begin typing. Before you start typing, make sure you have the correct Han fonts such as ChicagoHan, GenevaHan selected. All Han fonts has a suffix 'Han' in their font names.

Using Han Fonts on Desktop

The display font on desktop is supposed to be assigned by a control panel, Views. In Views, the user can assign the application font, GenevaHan in HKK to use Hangul on desktop.

Using Toctac Hot Key

Toctac Hangul converter is partially implemented in the Hantorie™ 1.1 control panel. Toctac hot key converts only Han-to-Wansung, and Wansung-to-Han interchangeably. The two code schemes are automatically recognized. Toctac can also convert Wansung Hanja to Han code when Capslock key is down with hot key. Unlike Toctac1.3 though, Toctac Hot Key does not use KSC5601 fill code representaton.

To assign a hot key definition for conversion, click on the 'Set' button, a dialog will come up and ask for the assignment. To deassign a hot key, simply click on the 'Clear' button. Keys not in the main part of the keyboard will be represented within big brackets([]).

The use of the hot key requires two steps. First, the user selects the text in the application, and press the hot key combination assigned. Then move to the position where the converted text should be pasted. Press the hot key combination once more to paste. The pasted text may be in a wrong font format, so change of fonts according to the code scheme used may be needed. In some software such as Nisus, or QuarkXPress, font change corresponding to the converted code scheme is needed before paste because two-byte or one-byte font script should be set prior to the use of the font.

When the selected text is converted to Wansung, the use should change the changed part to Wansung; When the selected text to Han, the user should change it to Han font in order to make it appear as proper Hangul.

4. Keyboard

Which Keyboard Should I Use?

Four keyboard files are provided with HKK. For those who are perplexed by the provided number of keyboards, the following description might be helpful to choose one. The statistics shown here was obtained by analyzing Korean High School and Middle School Korean textbooks.

\ Keyboard	KongHan	KSHan
Number of Hangul Keys	58	33
Use of Shift Key (%)	0.892	2.027
Use of Second and Third Row in the Keyboard (%)	76.290	86.995
Total Moving Distance of Fingers (meter)	12280	9738
Use of Left Hand (%)	56.044	56.98
Use of Right Hand (%)	43.956	43.02
Percentage of Continuous Double Strokes of Each Finger (%)	0.2	2.3

First of all, as far as the number of Hangul keys is concerned, KSHan is a better keyboard than KongHan. The user can quickly learn how to type Hangul characters because of the low number of character keys. The number of Hangul keys naturally results in the advantage on total moving distance of fingers. However, KSHan keyboard has several critical limitations. Because it must use a computer program to distinguish between a syllable-initial and a syllable-final, the user should see the characters stray back and forth between syllables. It also can not be used with Old Hangul. This is also due to the fact that it does not distinguish between syllable-finals and syllable-initials. Because it uses only two-sets, consonant and vowel groups, it produces more continuous double strokes for each finger than KongHan keyboard does so that the user is more likely to feel tired of typing.

Compared with two-set KSHan, KongHan keyboard has advantages on the number of continuous double strokes and use of shift key. However, it is hard to learn because it assigns all possible double consonants and several double vowels on the keyboard. It also uses the error-prone uppermost row in the keyboard. KongHan keyboard has been developed by Dr. Kong, Byung Woo and used for more than 40 years for mechanical and electronic typewriters. Actually, the original keyboard by Dr. Kong is called Kong keyboard, and KongHan is the adaptation of the Kong keyboard for HKK. The word 'han' has the meaning of 'big' or 'right' as can be seen in 'Han river', or 'Hangul'.

KongHan keyboard is a three-set keyboard distinguishing syllable-initials, syllable-finals. This enables the use of Old Hangul. Any three-set keyboards can be readily extended to incorporate Old Hangul characters, if needed. Another advantage of a three-set keyboard is that it can produce syllable-finals without kludge. In a two-set keyboard, like KSHan, the user must use a pre-defined key to input the single use of a syllable-final(shift-i in Hantorie™ 1.1).

Another salient advantage of a three-set keyboard is the easiness of syllable-input method. Syllable-input method is a multiple character input method. For example, the user hits all syllable-initial, syllable-peak, syllable-final characters simultaneously so that the computer may implement a corresponding syllable out of

the user input. Hantorie™ 1.1 currently does not support this function, but in the future version it will provide such a feature. By using syllable-input method which is possible maybe only in Hangul, the speed of typing can be increased two or threes times faster than character-input method without much effort.

To summarize, each keyboard has pros and cons, and selecting one specific keyboard is at the user's own discretion. KSHan is good for most people. Because it's Korean Standards(KSC5715, 1985), the user has little trouble of compatibility between different platforms even though it has inherent several problems.

For those who prefer to use Dvorak keyboard, KongHanDvorak and KSHanDvorak with Drorak English keyboard layout are also provided.

Unlike HangulTalk or WorldScript™ II, HKK can use a customized keyboard layout file. The user can modify the KSHan, KongHan keyboard files using 'ResEdit' software provided by Apple computer. For more information about keyboard customization, refer to 'ResEdit Reference' published by Addison Wesley.

The user can get help from Key Caps in Apple Menu for each keyboard with Font set to ChicagoHanKey or GenevaHanKey.

KongHan Keyboard



A complex syllable-initial can be typed by simply double strokes, or by pressing option-single syllable-initials. Complex consonants and complex vowels can be produced by combining single consonants and single vowels when KongHan checkbox in Hantorie™ 1.1 is marked, or by directly typing a complex consonant or a complex vowel from the keyboard. But the combinational method is not recommended because this method can not be used in a mechanical or electronic typewriter.

English characters are typed when capslock is pressed. This eliminates the need of changing scripts by pressing command-space, or command-option-space.

KSHan Keyboard





To type single syllable-finals alone, press shift-i and then type the consonant. To type complex syllable-finals alone for most complex syllable-finals, press the corresponding key with option-shift combination.

English characters are typed when capslock is pressed. This eliminates the need of changing scripts by pressing command-space, or command-option-space.

5. Font

In the full version of Han Korean Kit, six fonts, ChicagoHan, GenevaHan, MyungHan, NamSeoulHan, NobleHan, and RoundGothicHan are provided. Each font has bitmapped, TrueType, and type 1 PostScript fonts. TerminalHan bitmapped font is also provided for telecommunication.

Installation

For all System7.0 or above, when the user drag font files on the System Folder icon, the Finder takes care of the font installation. In system version 7.0 and 7.0.1, bitmapped and TrueType fonts belong in the System file, just as in System 6. PostScript fonts go into the Extensions Folder. For System7.1, bitmapped and TrueType fonts should be installed in the Fonts Folder and PostScript fonts in the Extension Folder. For System7.5, all kinds of fonts go into the Fonts Folder; however, the user can still install fonts the same way as System7.0 or System7.0.1. For the installation on a PostScript printer with a Hard drive, or an imagesetter, the use of LaserWriter utility is needed. For more information, refer to the Macintosh User Guide by Apple, or ATM User Guide. It is recommended that the user should install either the TrueType version of a certain font or the ATM/PostScript version, but not both.

Bitmapped, TrueType, and PostScript Fonts

A bitmapped font is usually used for screen display with 72 dpi resolution. Each dot on the screen produces a corresponding dot on the page, thus the printout is WYSIWYG. In terms of fonts, though, what the user sees is not what the user wants. Text at 72 dpi may have looked okay on the computer screen, but not on the printout. The advantage of a bitmapped font is that the printing and screen display speed is faster than that of other fonts. A bitmapped screen font on the screen generally looks better than its TrueType equivalent.

Both TrueType and PostScript fonts are scalable fonts. A TrueType font can be used to represent usually big font sizes for which a bitmapped version does not exist. It is recommended to use a TrueType font with a bitmapped font for clear look on the screen.

A PostScript font should be installed with a bitmapped font. It is not necessary to install a PostScript font when the user does not use ATM, PostScript Printers, or imagesetters. When the user checks on 'Fractional Font Width', which is available for some software, the printing quality gets better sacrificing the quality of the screen

display.

Serif and Sans Serif

In Han Font Package, MyungHan is the only serif font. Serif type is more readable and best for text; conversely, sans serif type is more legible and best for the use of headlines. Serifs are those little ditties at the ends of the strokes of the character, and sans serif means 'without serif'. Therefore, MyungHan is recommended for text; ChicagoHan and GenevaHan for desktop. The use of sans serif fonts such as ChicagoHan and GenevaHan increases legibility on the desktop which has low resolution of characters. The use of serif font, AppleMyungjo, on desktop, which is the case of WorldScript™ II and HangulTalk, is not desirable.

Han Fonts Compared with Two-byte Fonts

Two-byte PostScript fonts currently used in South Korea are made primarily for professional use only, namely for imagesetters. The result is that the printing quality in normal laser printers is not good because of the complex design of the font and the lack of appropriate hinting. Moreover, a single two-byte outline font takes a few megabyte disk space and the printing speed of a two-byte TrueType font is tremendously slow.

Han fonts in HKK were targeted on normal laser printers with the consideration of hinting and simplified font design; thus the user can get a good quality of printout regardless of the kinds of printers. Hinting is some special programming instructions for each font, telling the computer how to fill in some of dots. On the 300 dpi of the laser printers, hinting assists with legibility at very small point sizes; On the other hand, imagesetters have such a high resolution that hinting doesn't make any difference to the printout.

Han fonts work in the same way as English fonts; thus the printing speed of a TrueType font is much faster than that of two-byte TrueType fonts. When it comes to disk space, a single Han font takes only a few tens of kilobytes.

Font Samples

For Han font samples, take a look at the 'Sample Han Fonts' file.

6. HKK, WorldScript™ II, and HangulTalk

Prior to HKK, WorldScript™ II and HangulTalk had been used to represent Hangul on the Macintosh computer. WorldScript™ II was developed by Apple computer to cover all two-byte languages such as Chinese, Japanese, or Korean. Korean language can be categorized into a two-byte language as long as Hanja is counted; however, the use of Hanja in North Korea is so rare, and the use in South Korea is also decreasing. Without taking into account of Hanja, Hangul can be considered only as a one-byte language. WorldScript™ II consists of two extension files (WorldScript™ II and InputBackSupport), a script file, and several fonts and auxiliary files. HangulTalk is the Korean localized system software provided by Elex computer in South Korea which essentially includes WorldScript™ II contents. It has several goodies such as Inline Input extension (ChamYpRyok), several fonts in addition to the WorldScript™ II contents.

Both WorldScript™ II and HangulTalk are about the same in terms of Hangul capabilities. But the major difference is that HangulTalk is localized version of the System so that everything on the desktop screen is in Korean whereas with WorldScript™ II everything is in English. Tactac1.3 has the capability of converting

Wansung application in HangulTalk to Han application for the use in HKK. Another primary difference is the price. WorldScript™ II is almost free of charge(it's not yet officially free of charge), but HangulTalk costs about \$700 even with a hardware lock.

If Hanja can be excluded from Korean, only Hangul is the matter of implementation. HKK was developed based on this idea so that it treats Hangul characters like English alphabets. Because of its simplicity, HKK has a lot of advantages over WorldScript™ II and HangulTalk. For those who need Hanja capability, the use of WorldScript™ II or HangulTalk is recommended.

7. Use of HKK in Telecommunication

Two fonts, TerminalHan and TerminalHan-KS are provided for the purpose of telecommunication. Both of these two fonts are necessary for the proper display of Wansung KS code. TerminalHan is a normal Han font, which can be used for printing; TerminalHan-KS is just for display Wansung code on the monitor. Therefore the user should convert any Wansung text displayed with TerminalHan-KS for printing. Both fonts should be installed before launching any telecommunication software.

Hantorie™ 1.1 enables Hangul display only for software which can handle two byte Wansung Hangul. Nowadays, most telecommunication programs supports two byte languages.

For example, in Netscape1.1, set font preference to Latin1, TerminalHan-KS, TerminalHan-KS, and MacRoman in turn. In Netscape1.0, both fonts should be set to TerminalHan-KS. Try to test by connecting with <http://www.joongang.co.kr>. You can read Joongang daily there. For more web sites in Korea, refer to <http://flower.comeng.chungnam.ac.kr/sharon/www-server-in-korea.html>.

In the future version, the input method for Wansung will be added for the proper telecommunication.

Han Korean Kit list server is now operated with the help from Dr. Lee, Byungtae. If the user wants to further receive any information about HKK, she or he can send mail to: listserv@mis163.bpa.arizona.edu with the subject line "sub HKK yourname". After subscription, the user can send or broadcast email by writing to HKK@mis163.bpa.arizona.edu.

8. Troubleshooting

Hantorie™ seems not working even though the corresponding checkboxes had been correctly marked.

This problem sometimes occurs when the user loaded several programs. Try to quit all the program and launch again the program you want to use. Usually, this solves the problem. When HangulTalk was installed, change the System font to a English or Han font.

Toctac hot key can not be assigned in ChamYpRyok.

There are some incompatibilities with ChamYpRyok, a Korean Input Method Extension provided with HangulTalk. Toctac hot key can not be assigned or used in ChamYpRyok, or Korean keyboard state. Change ChamYpRyok to another keyboard state to assign a hot key, or to use.

9. Incompatibilities with some applications

These days, there are so many Extensions (little programs that are placed in the System Folder which start up automatically when you switch on the machine) out there that it is increasingly difficult to avoid incompatibilities. So far it was found that Hantorie™ 1.1 will partially work with ChamYpRyok Init included in HangulTalk. If you have problems getting Hantorie™ 1.1 to work, try dragging all the extensions except Apple supplied ones from the Extension Folder inside the System folder on to the desktop, and restarting the computer. Then put them back in one at a time, restart and test Hantorie™ 1.1 until the problems resurface to identify the incompatible culprit. Renaming the extension so that they load in a different (alphabetical) order can also sometimes solve the problem.

Currently, Hantorie™ 1.1 has the following compatibility problems. There might be some other applications which are not compatible with Hantorie™ 1.1. For KongHan keyboard, the table below shows only for cases using Hantorie™ 1.1. If KongHan keyboard is used with Hantorie™ 1.1, that is, the checkbox in Hantorie™ 1.1 control panel is marked, the same problems as KSHan will be experienced.

Program Name	Compatibility
BBEdit	Not Working
Korean Localized Version of ClarisWorks	Partially Working with HangulTalk
Nisus	Not Working (working with version 2.1)
PageMaker	Not Working
PhotoShop	Not Working when a Wansung Hangul font was assigned as the System font
Micarosoft Word	Not Working with HangulTalk
Word Solution	Not Working

The incompatibility problems are due to the different implementation techniques of the keyboard input character for different applications on the Macintosh. In the future version of Han Korean Kit, the incompatibility problems above will be reduced.

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