USER MANUAL

Elo Touch Solutions

KIT, xx23L MONITOR EDGE CONNECT POS KEYPAD

UM-0058075 Version: B

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Chapter 1: Introduction

Product Description

The Elo POS Keypad kit for monitor xx23L series is an optional attachment for Elo 1523L and 1723L monitors. The device is USB based, and it can suit most retail scenario. It also has an extended edge connector and can work most easily with Elo MSR kit.

Precautions

Follow all warnings, precautions and maintenance as recommended in this user manual to maximize the life of your unit and prevent risks to user safety. See Section 7 for more information on safety.

This manual contains information that is important for the Elo keypad. Before setting up and powering on your keypad, read through this manual, especially the Installation, configuration, and Operation chapters.

Features

Compatibility	Touchscreen Monitors - 1523L, 1723L Note: Need to use the different metal bracket.
Product Dimensions	187.3mmx85mmx24.8mm7.37” x 3.35” x 0.98”
Interface Type	Wire USB
Power Source	USB Power
Compliant	USB2.0 Full-Speed
OS Support	Android 10/12/14, Windows 10/11, Linux 22.04 or above

Chapter 2: Unpacking

Unpacking the Keypad

Verify that the box contains:

- Keypad with integration USB wire
- Bracket for ET1523L
- Bracket for ET1723L
- QIG
- Screws(TBD)
- Key cap/tip removing tool

Remove all protective material from the device.

Inspect the device for damage.

Report immediately if the keypad is damaged and with missing items as listed above.

Chapter 3: Installation

Attaching the Keypad

Please refer to the paper QIG shipped with the keypad.

Install the Software Drivers

For use with Windows Systems:

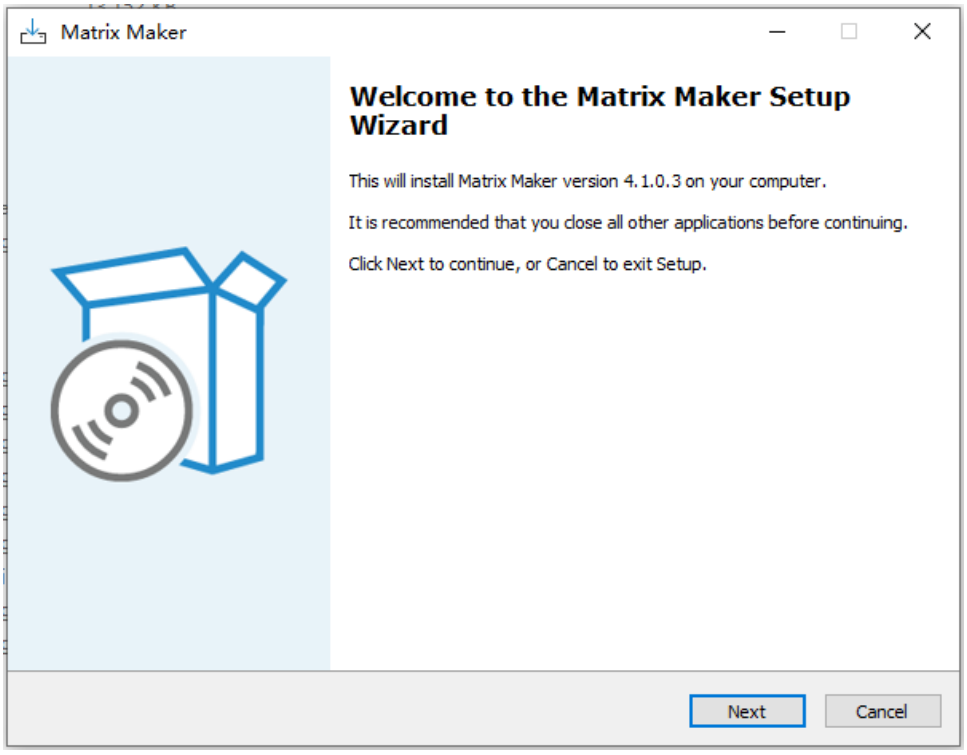
- Keypad is HID mode in default and can be used directly. If you need the OPOS/JPOS driver and keypad configuration tool, please visit Elo website with the link below: https://elosupport.elotouch.com/hc/en-us/p/Developer-Portal

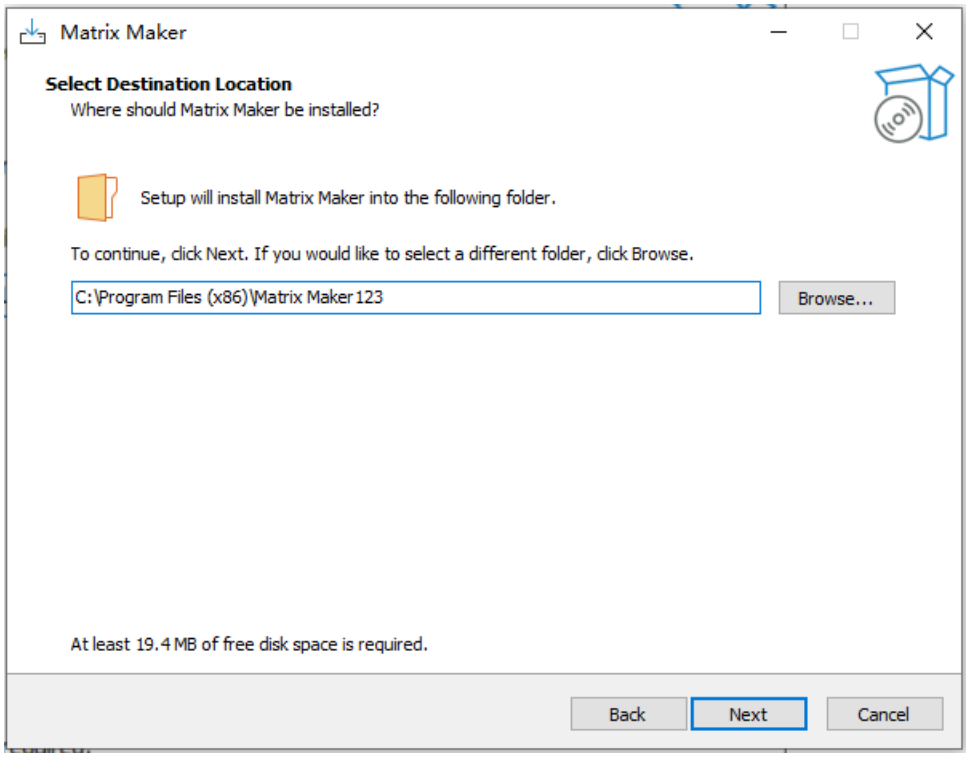
Chapter 4: Keyboard Programming

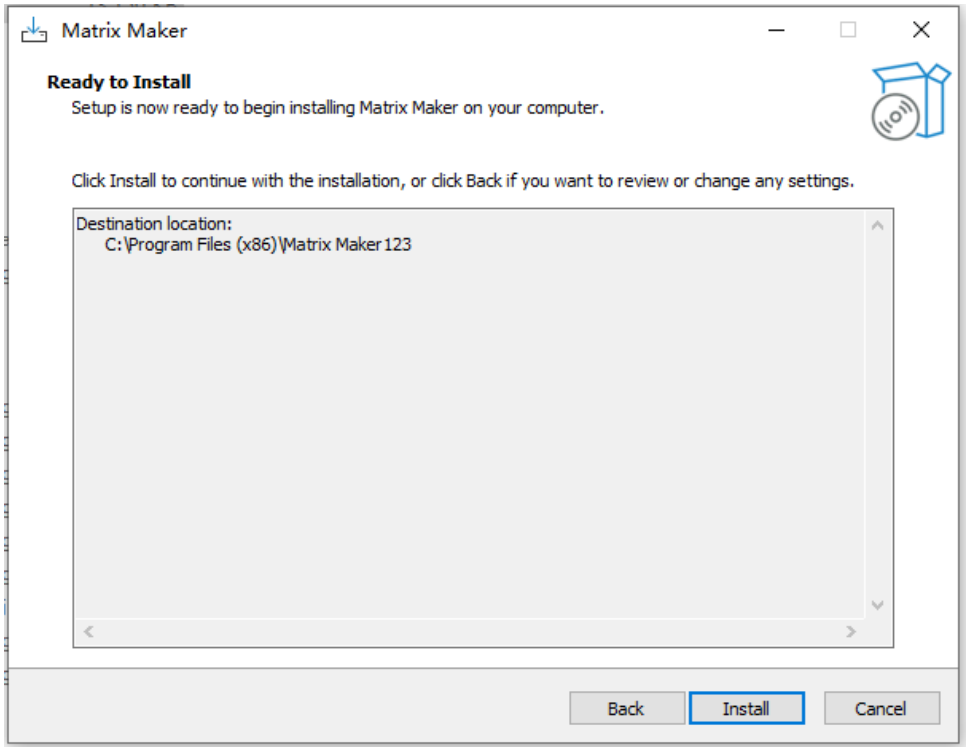
Windows Matrix Maker

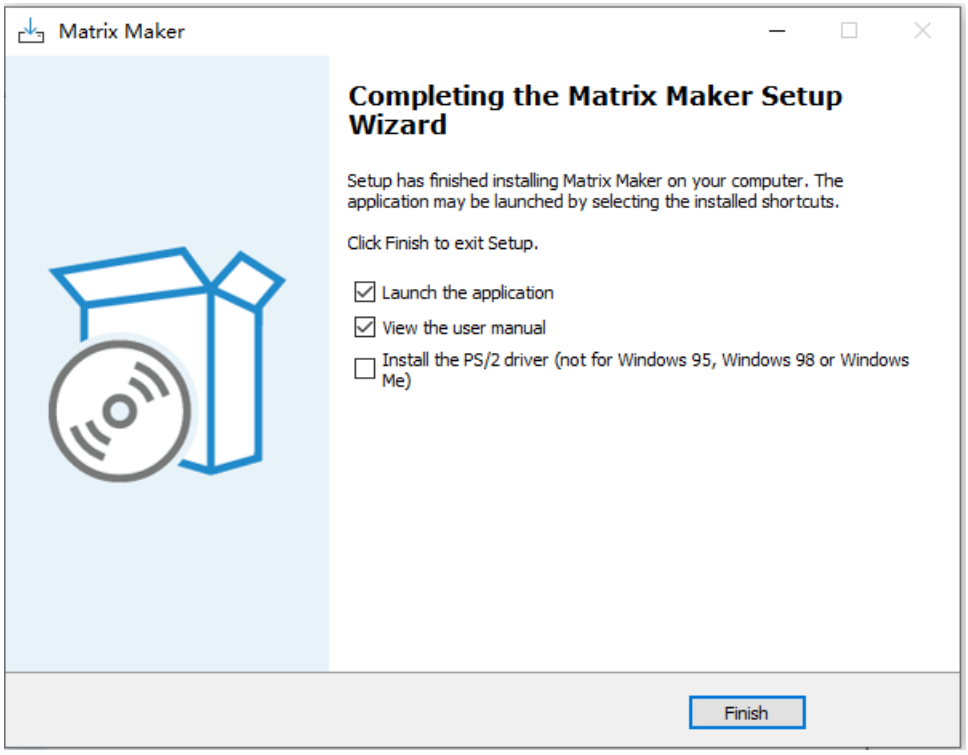
1. Program Installation

To install the program, run the setup file. The default folder for installation is “C:\Program Files\Matrix Maker\Programmable Keyboard”.






Matrix Maker
Ready to Install
Setup is now ready to begin installing Matrix Maker on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination location:
C:\Program Files (x86)\Matrix Maker 123
Back
Install
Cancel


Matrix Maker
Completing the Matrix Maker Setup Wizard
Setup has finished installing Matrix Maker on your computer. The application may be launched by selecting the installed shortcuts.
Click Finish to exit Setup.
Launch the application
View the user manual
Install the PS/2 driver (not for Windows 95, Windows 98 or Windows Me)
Finish

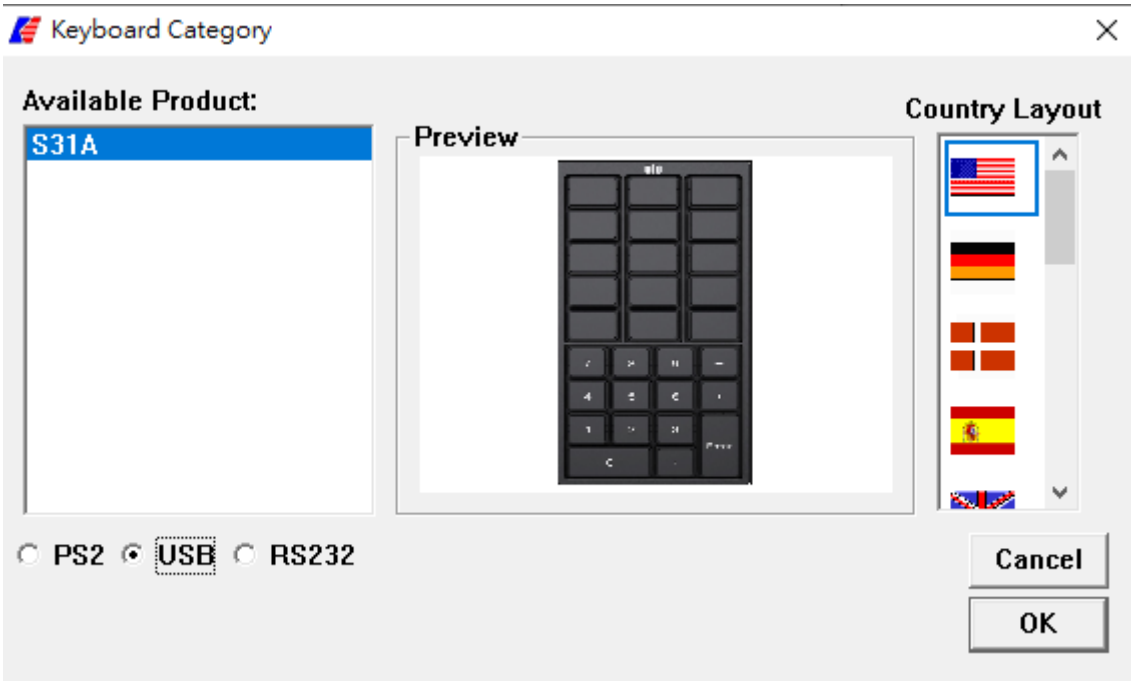
2. Keyboard Programming Software

The default location of the executable file is

"C:\Program Files\Matrix Maker\Programmable Keyboard\MatrixMaker.exe"

2.1 Select a keyboard

When the program runs, the Keyboard Category dialogue will appear.



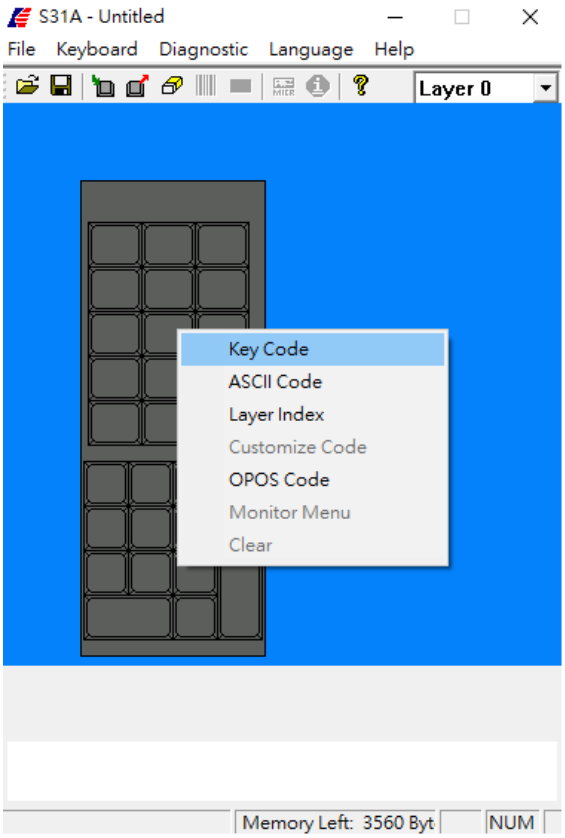
To program with a keyboard, you should follow the following instructions.

1. Select the connection interface (PS/2, USB or RS232) of your keyboard.
2. Choose the correct model of your keyboard for the "Available Product" list. You should see the image of your keyboard in the "Preview" frame.
3. Select the country layout you want to program, and then press the "OK" button.

The following instructions are based on one of our models - S31A, it can also be applied for other models.

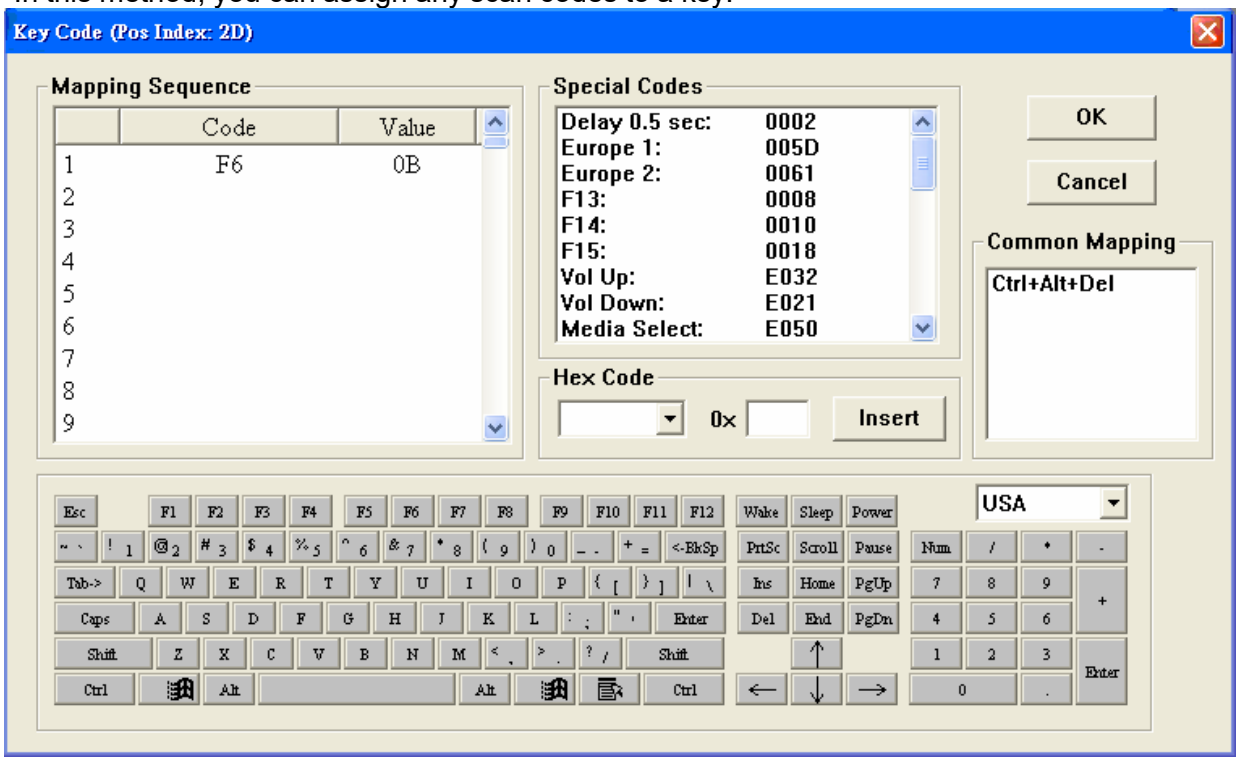
2.2 Edit Key Map

After selecting a model, you will be displayed with the default key layout which has no data for the programmable keys. Notice that if you roll your mouse over certain keys on the layout image they will change to a light grey color. This indicates that the keys are programmable. Clicking the left mouse button on that programmable key will display a popup menu with options of assigning functions to that key. There are six methods to assign a function to the programmable key which will be explained in greater detail in the following sections.



2.2.1 Key Code

In this method, you can assign any scan codes to a key.



In the above dialogue window, the most popular key codes (scan codes) are shown in the “virtual keyboard” area, plus a few special codes which are listed in the “Special Codes” area. Selecting a key from the “keyboard” area or double clicking an item in “Special Codes” area will add that key’s code to the “Mapping Sequence” list. (**Note : Some special codes only support in the specific OS).** You may also type code directly from a connected keyboard. Up to 256 codes can be mapped to a single key position. Selecting a combination from the “Common Mapping” list will add the corresponding key codes into the “Mapping Sequence”.

Any key codes (scan codes) that are not selectable in this screen can be mapped by directly entering the hexadecimal code for that key into the box next to “0x” and pressing “Insert”.
For the definition of scan codes, please download Scan Code Translation Table from https://download.microsoft.com/download/1/6/1/161ba512-40e2-4cc9-843a-923143f3456c/translate.pdf

Example

If you press “Shift”, “H”, “E”, “Shift”, “L”, “L”, and “O” buttons in the “virtual keyboard”, the “Mapping Sequence” list will be shown as in the above dialogue window. After programming this key code sequence and sending the updated mapping to the keyboard (covered in a later section), if you type this button in Notepad, it will display “HEllo” if the Caps Lock is off. However, it will display “heLLO” if the Caps Lock is on.

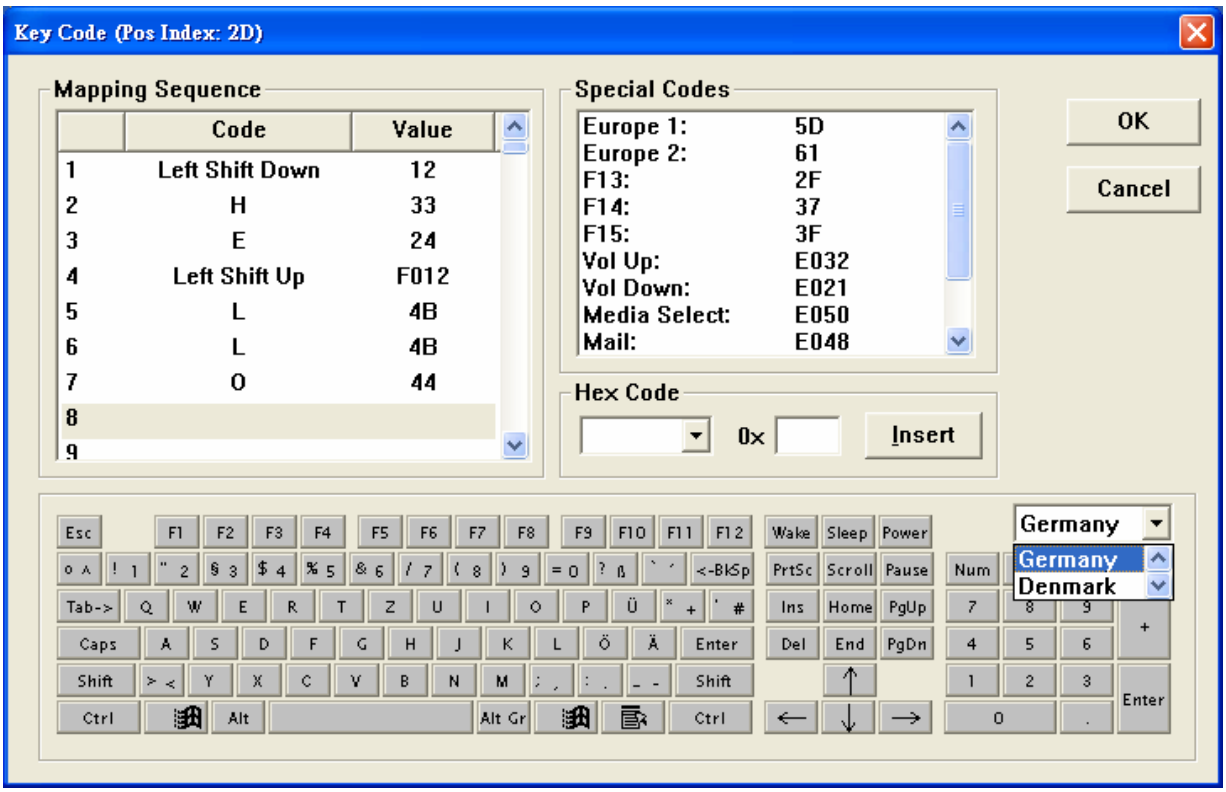
If you want to delete “O” in the above “Mapping Sequence” list, you can right click the “O” item. A popup menu with two options will appear. Selecting the “Delete” option will delete the “O” item. Selecting the “Clear All” will remove all the items in the “Mapping Sequence” list.
If you want to add “S” before “H” in the above “Mapping Sequence” list, click the “H” item in the list first, then press “S” in the “virtual keyboard” picture. If you want to append the codes at the end of the list, please make sure to select an empty mapping position in the list.

Caution:

1. Please pay special attention when using the Shift, Alt, and Ctrl keys as they have two states: down and up. For example, if you press the left Shift key once in the “virtual keyboard” area, you will only get a down code which will keep the key in a down state. If you were to keep this programming and press that key in an application, it would behave as if the left Shift key was down continuously. Again please pay special attention to the function of these keys and their respective up/down codes to get the functions you desire.
2. For USB interface, the following codes cannot be assigned with other codes:

<Wake>, <Sleep>, <Power>, <Vol Up>, <Vol Down>, <Media Select>, <Mail>, <Calculator>, <My Computer>, <WWW Search>. On the other hand, if other code is assigned, the above codes cannot be appended.

Depending on the version of the software, you can change the virtual keyboard layout by selecting the country you like as shown below.

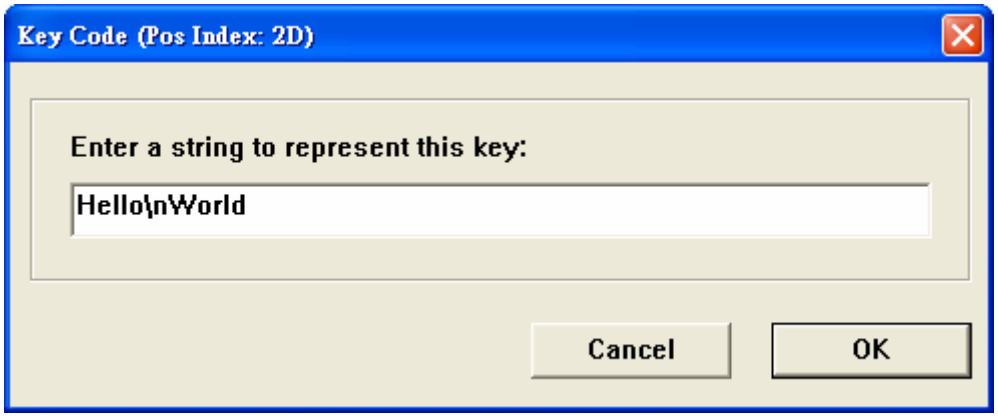


2.2.2 ASCII Code

Using the ASCII method, you can assign any printable ASCII Codes, i.e. A-Z, a-z, 0-9, +, - ,* , / , and punctuation symbols. Up to 255 ASCII codes can be assigned. Five special symbols can also be assigned by using the following representations:

Symbol	**Representation**
Enter Character	\n or \N
Esc Character	\e or \E
Tab Character	\t or \T
\ Character	\\
Delay 0.5 second	\d or \D
ASCII Code	\xHH where HH must be a two-digit hexadecimal integer

For example, if you program a key with “Hello\nWorld”, as shown in the following diagram,



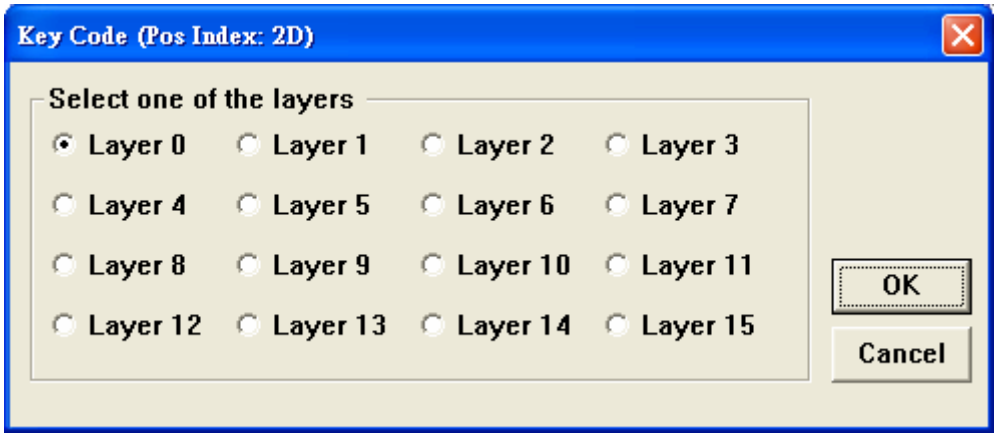
After programming this button, if you type this button in Notepad, it will display, Hello World

Note:

1. Caps Lock will not modify the output of keys using this method. The key codes will always be output in the same way they are programmed .
2. The output of the character string follows the Country Code setting in the Keyboard Setting dialogue (Refer to Section 3). For example, if you enter “How are you?” from the keyboard connected to your PC with a German OS, but you choose USA for the Country Code in the Keyboard Setting dialogue, the output will become “How are you?”.

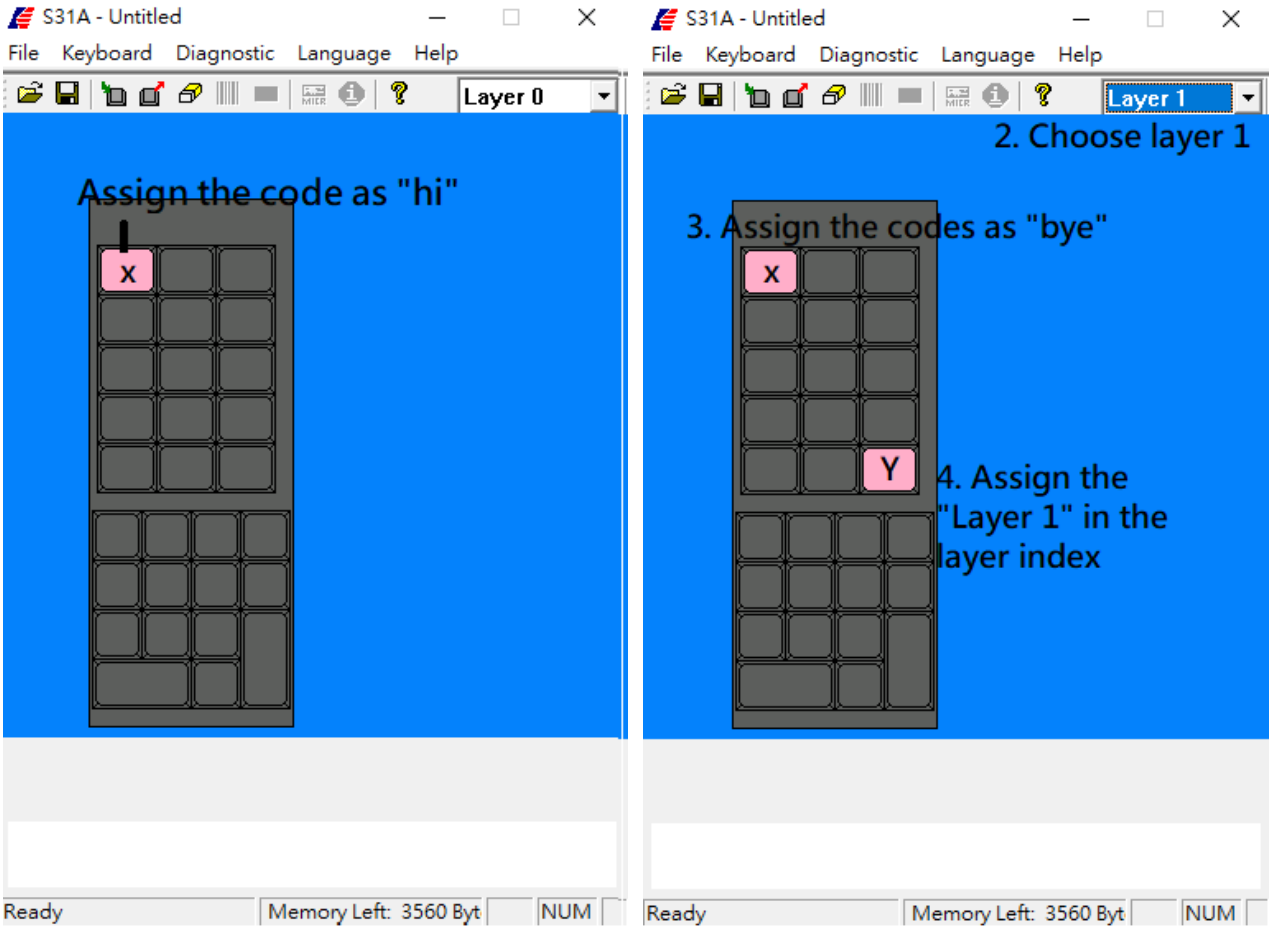
2.2.3 Layer Index

Layers are useful in programming different codes to the same key. The output of the codes will be determined by the layer index which can be selected by another key programmed with the appropriate layer index code. There are at most 16 different programmable layers depending on the category of the keyboard. You can assign a layer index to any programmable key you like. Below is a screenshot of the Layer Index popup dialogue. After programming a layer index to a key, this key will be reserved on all layers.



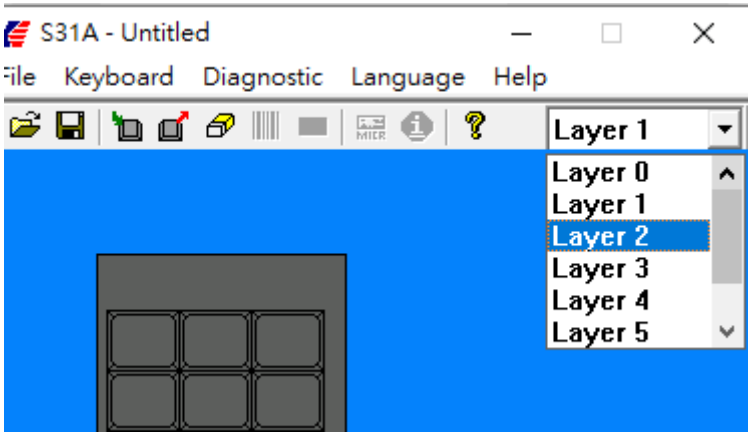
Layer index keys can be regarded as performing a function much like the Shift key: when pressed and held down, it will output a different code than the base layer would normally send.

For example, if a key is programmed to output “hi” on layer 0 and “bye” on layer 1, it will output “hi” when pressed normally and “bye” when pressed while holding the key assigned to perform the “Layer 1 index” function (please see the following screenshots for further explanation).



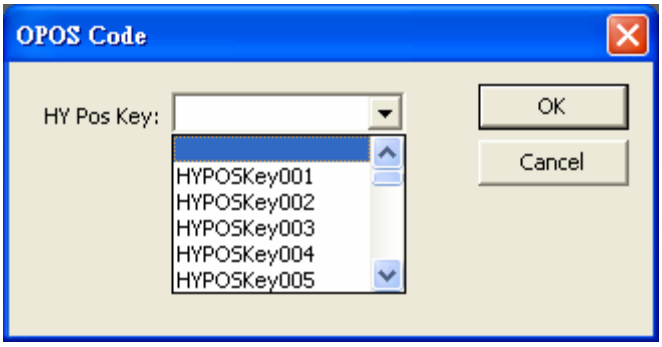
After programming this key map, if you press the x button in the keyboard, it will display “hi”. If you press the Y button without releasing, it will display “bye” if you press the X button.

To program key codes on alternate layers, please select each layer from the drop-down menu located on the toolbar (shown in the screenshot below) and program key codes as explained in the previous sections. Please keep in mind that you must assign a corresponding layer index key to output layer-based codes. You may also assign layer indexes to the key lock if available (optional).



2.2.4 OPOS code

Any keys can be assigned to an OPOS key which is handled by our OPOS driver.



Our OPOS driver is designed to support up to 160 OPOS Keys and 6 OPOS Keylocks.

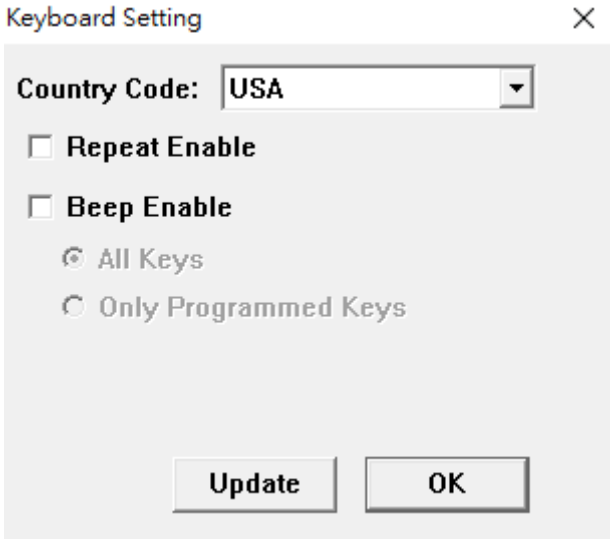
The detailed information is shown on section “The OPOS usage”.

Note:

1. Our OPOS driver must be installed first.
2. The programmable keys assigned as these codes are effective only when the keyboard is connected to the PC which is powered on.

3. Keyboard Setting

On the menu bar, click ‘Keyboard’ and then ‘Keyboard Setting’, the following dialogue window will appear.



To make the keyboard beep upon pressing a key, please check the ‘Beep Enable’ box. You may then select if you would like all keys to beep or only programmed keys to beep when pressed down.

If you would like the key codes to be output repeatedly when pressing the button continuously, click ‘Repeat Enable’ option. If this is not selected the code associated with each key will only be output once even while holding down a key.

After editing the settings, you may press ‘Update’ button to send them directly to the keyboard and then the dialogue window will be automatically closed or you my press ‘OK’ button to save the settings in the program memory (settings will not be transferred to the keyboard until you click the ‘Update Whole Keyboard’ button – see section 6 for more information).

4. Diagnostic

4.1 Enter Test Mode

Pressing a key will show that key’s position. (For testing the keyboard only.) If your keyboard has key lock feature and the repeat feature is turned on, the keyboard will continuously send the key lock position. To stop this, you can press any other key.

4.2 Exit Test Mode

Pressing a key will show the code programmed to that key.

4.3 Load Factory Setting

Reload the default factory setting to the device. This function can be used when the QUERTY section of the keymap is lost. For the USB keyboard, please re-plug the keyboard and close the software after executing this function successfully.

4.4 Reset

Reset the keyboard only. (For testing the keyboard only.)

4.5 Firmware Version

Get the current version of the firmware.

4.6 Update Key Mappings

To send only the key mapping data to the keyboard device, click Keyboard > Update Key Mappings on the menu bar or on the toolbar, click  icon.

During updating, please do not press any keys on the keyboard or click the mouse or touch the touch panel for better performance.

4.7 Update Whole Keyboard

To send the settings for the entire keyboard device (including MSR settings, Keyboard Settings and key mapping data), click Keyboard > Update Whole Keyboard on the menu bar.
During updating, please do not press any keys on the keyboard or click the mouse or touch the touch panel for better performance.

4.8 Retrieve Keyboard

To retrieve the data currently programmed to a keyboard device (including MSR settings, Keyboard Settings, key mapping data, Barcode Settings, MICR Settings and iButton.

Settings), click Keyboard > Retrieve Keyboard on the menu bar or click  icon on the toolbar.
During retrieving, please do not press any keys on the keyboard or click the mouse or touch the touch panel for better performance.

4.9 Clear All

To clear the data in the Matrix Maker program memory (including MSR settings, Keyboard Settings, and key mapping data), click Keyboard > Clear All on the menu bar

or click  icon on the toolbar. This action only clears the Matrix Maker program memory - it does not clear the settings in the actual keyboard.

4.10 Save

To save all current settings in the Matrix Maker program memory to a file, click File >Save on the menu bar or click  icon on the toolbar.

4.11 Open

To open a saved Matrix Maker settings file, click File > Open on the menu or click  icon on the toolbar. An error may occur if you choose a setting file of a newer version on the Matrix Maker software with an older version.

4.12 Default Keymap

You can set the default key mappings for each model in the Matrix Maker by clicking File
> Set Default on the menu bar. Once a key mapping is set as default, it will be automatically lo aded the next time this model is selected.

5. Batch Update

You can update the keymap or the firmware automatically by creating a batch file. After updating, the program will be closed automatically.

5.1 Keymap Update

The format of the batch file for updating keymap for a USB device, "***Location_of_Executable_File***" -1"***Location_of_Keymap_File***" -t"***Category***" For example,
"C:\Program Files\Matrix Maker\Programmable Keyboard\MatrixMaker.exe"
-1"C:\temp\s78a.dat" -t"S31A-ELO"

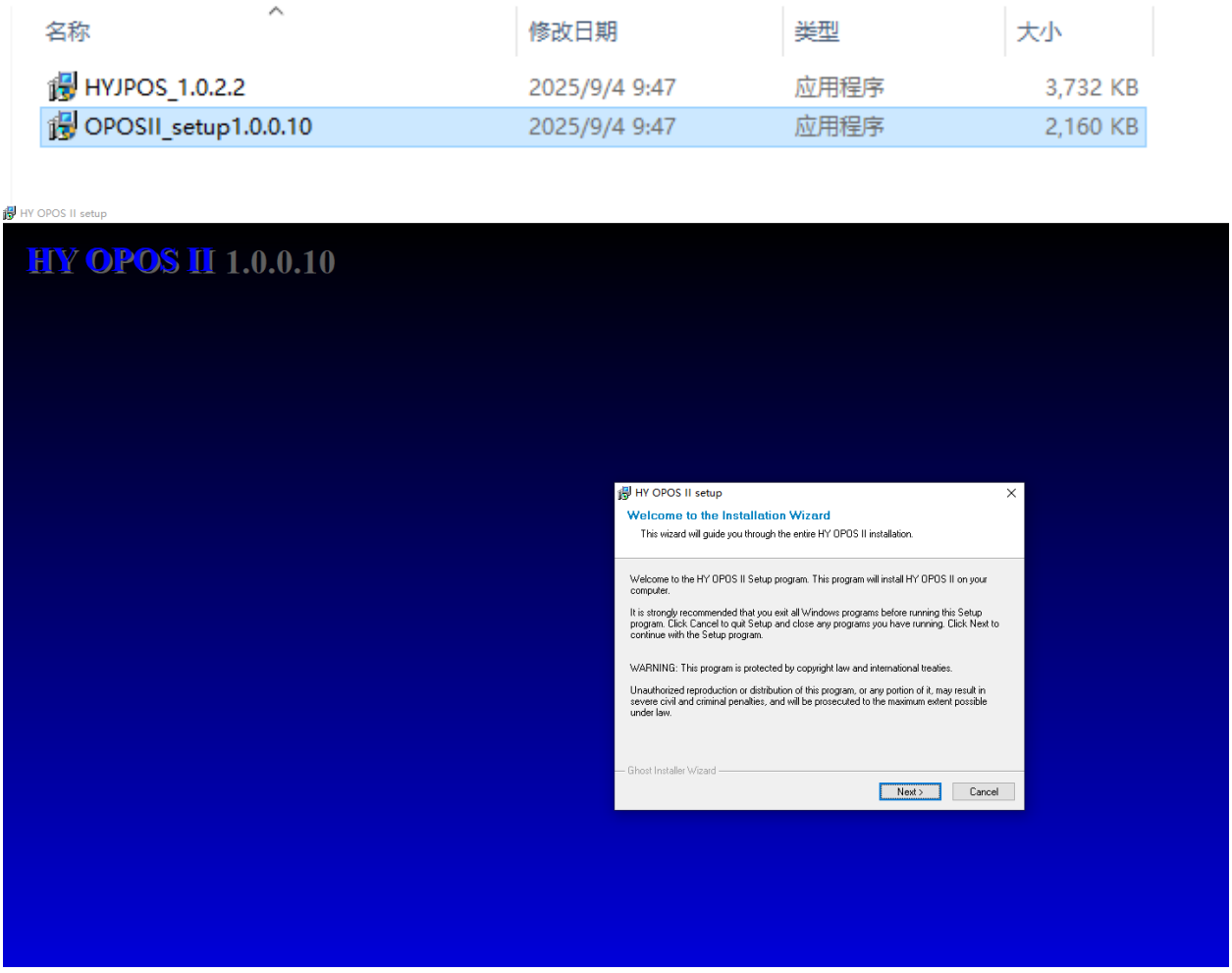
Note:

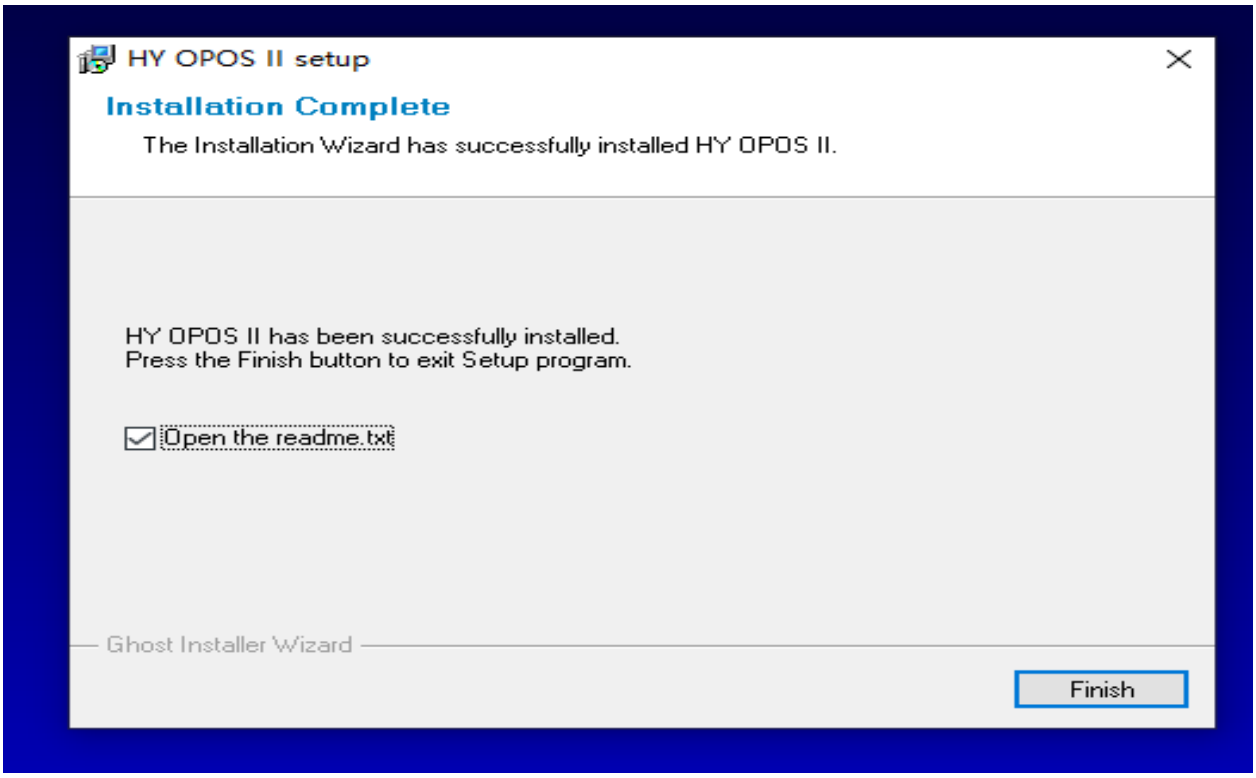
1. There is a space before -1, -2, -t, and -s but no space after -1, -2, -t and -s.
2. The double quotation mark is required.

6. The OPOS Usage

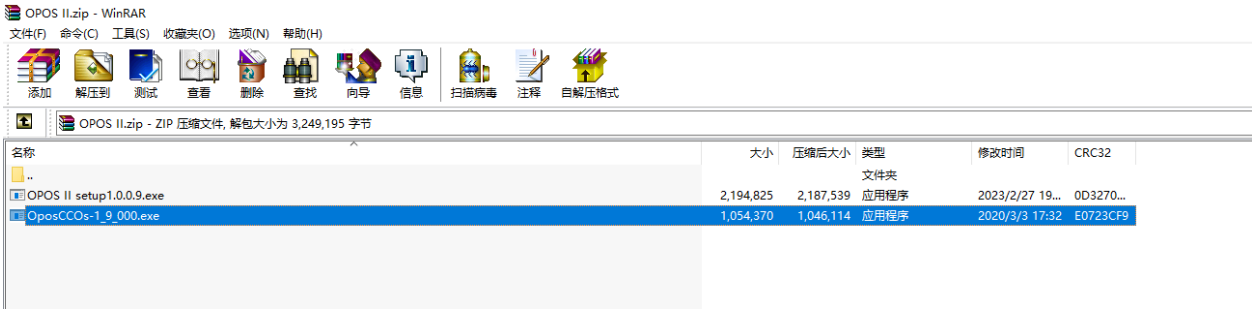
6.1 OPOS Driver

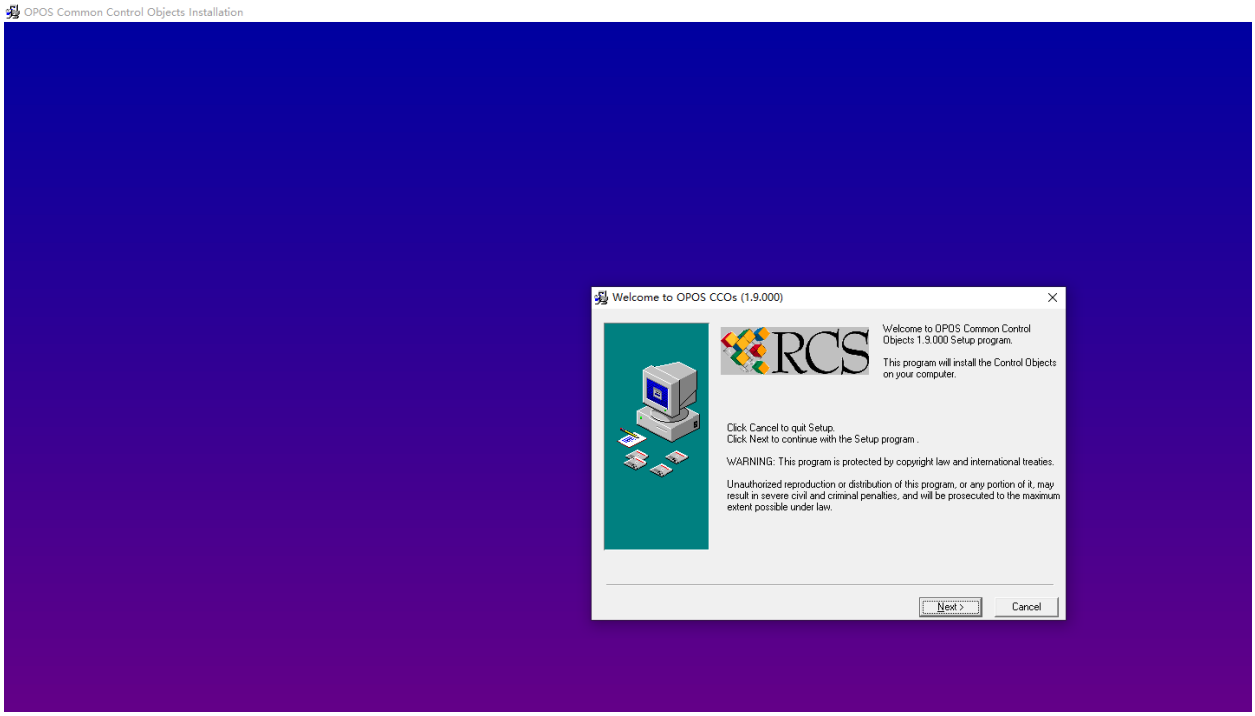
Install both the OPOS drivers.

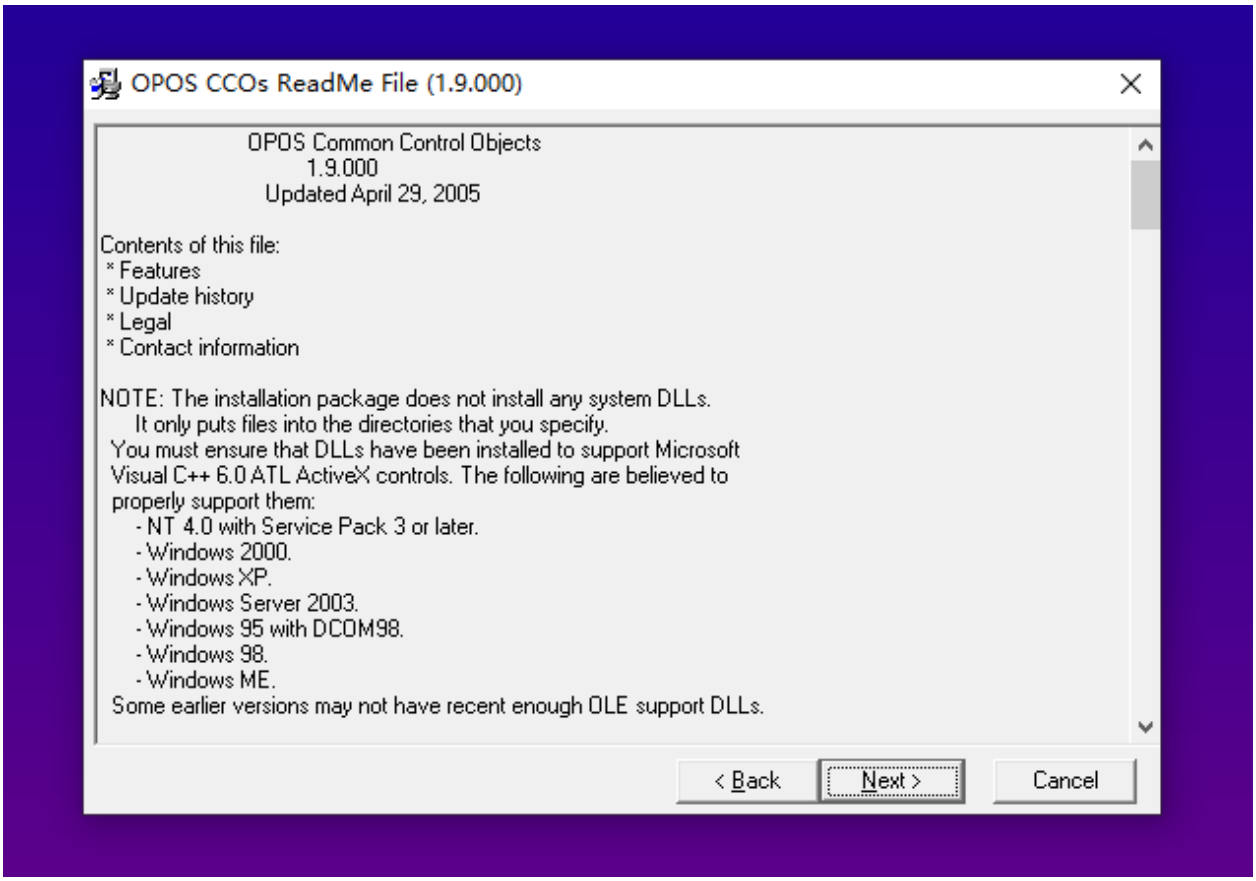


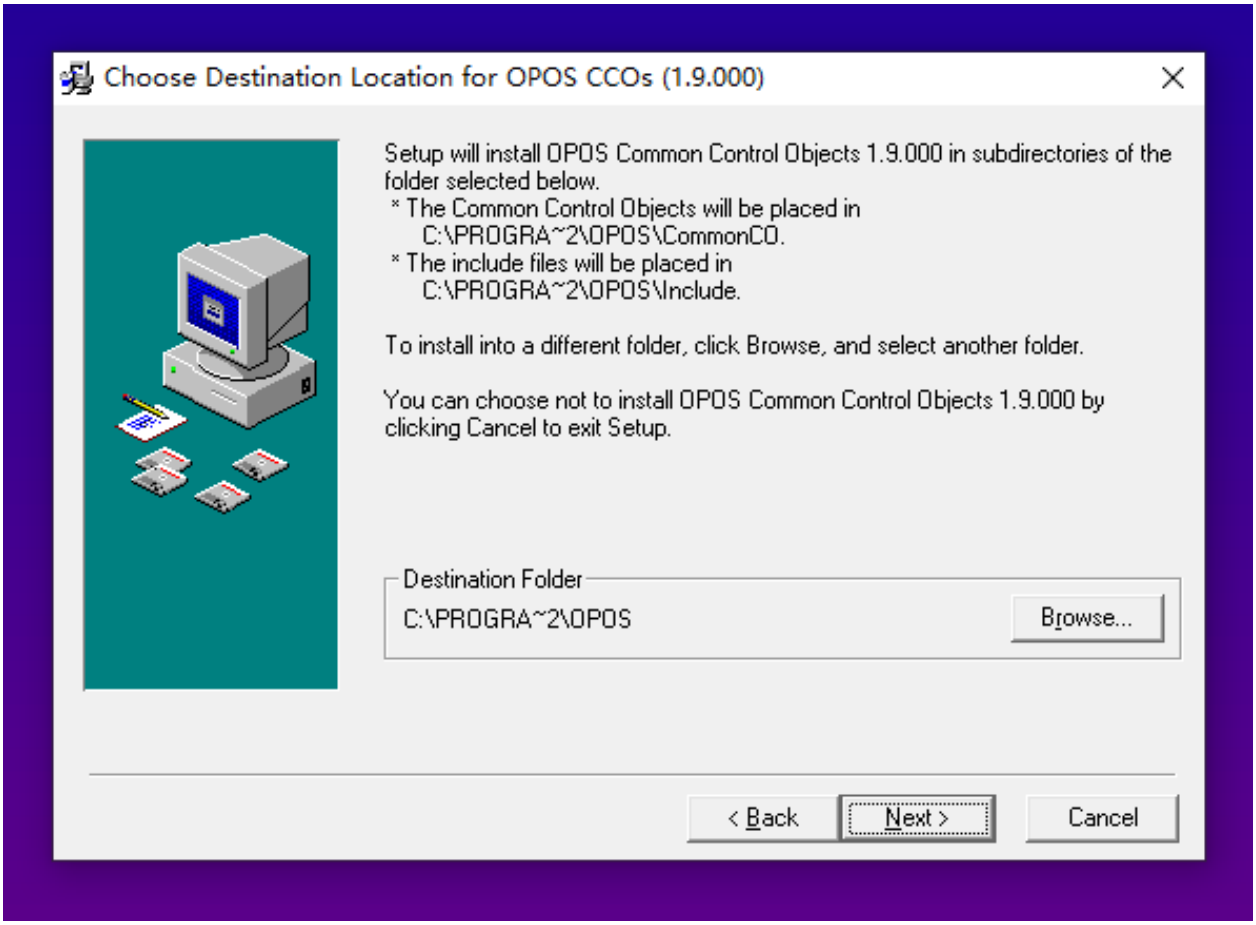


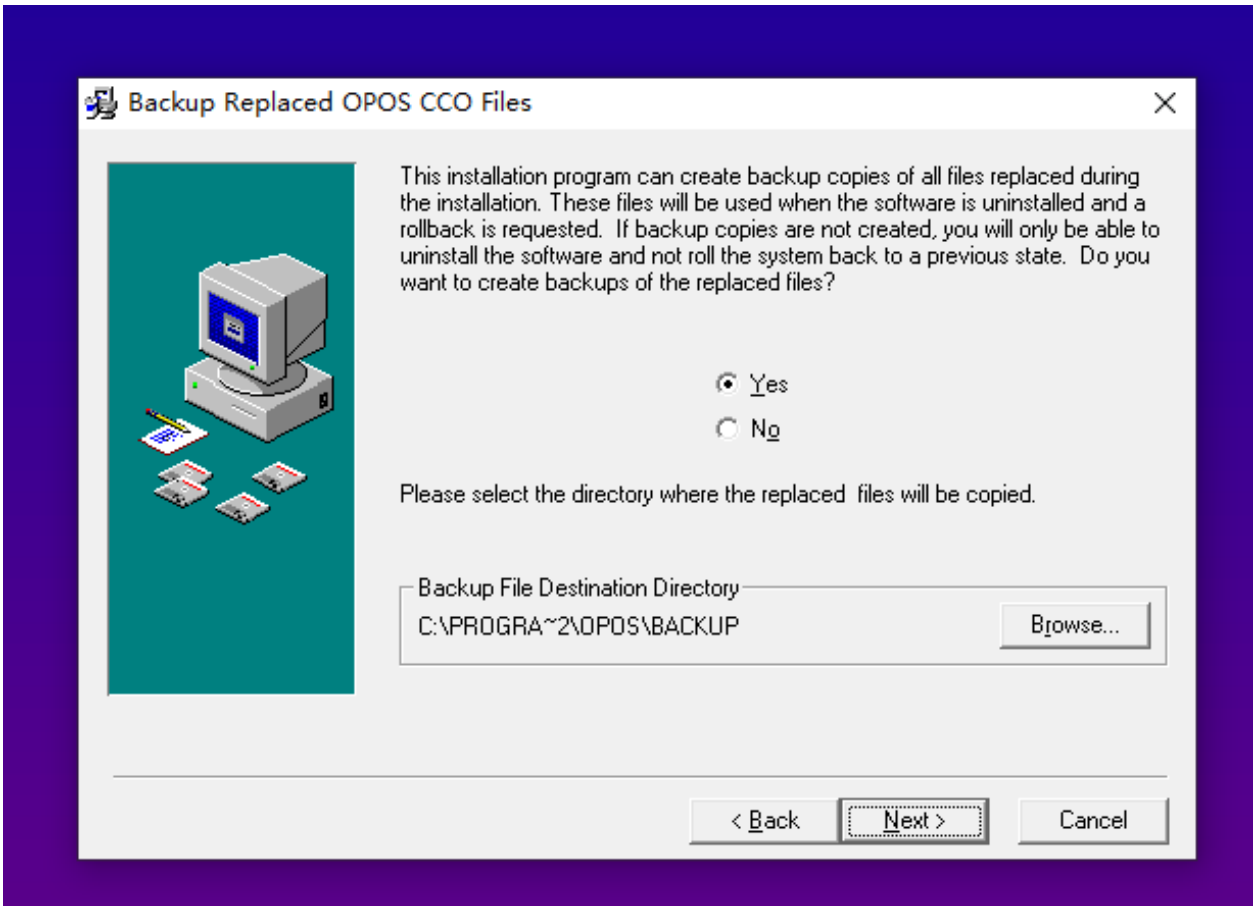
For the introduction of CCOs, you can refer to the link below.
http://www.monroecs.com/index.htm

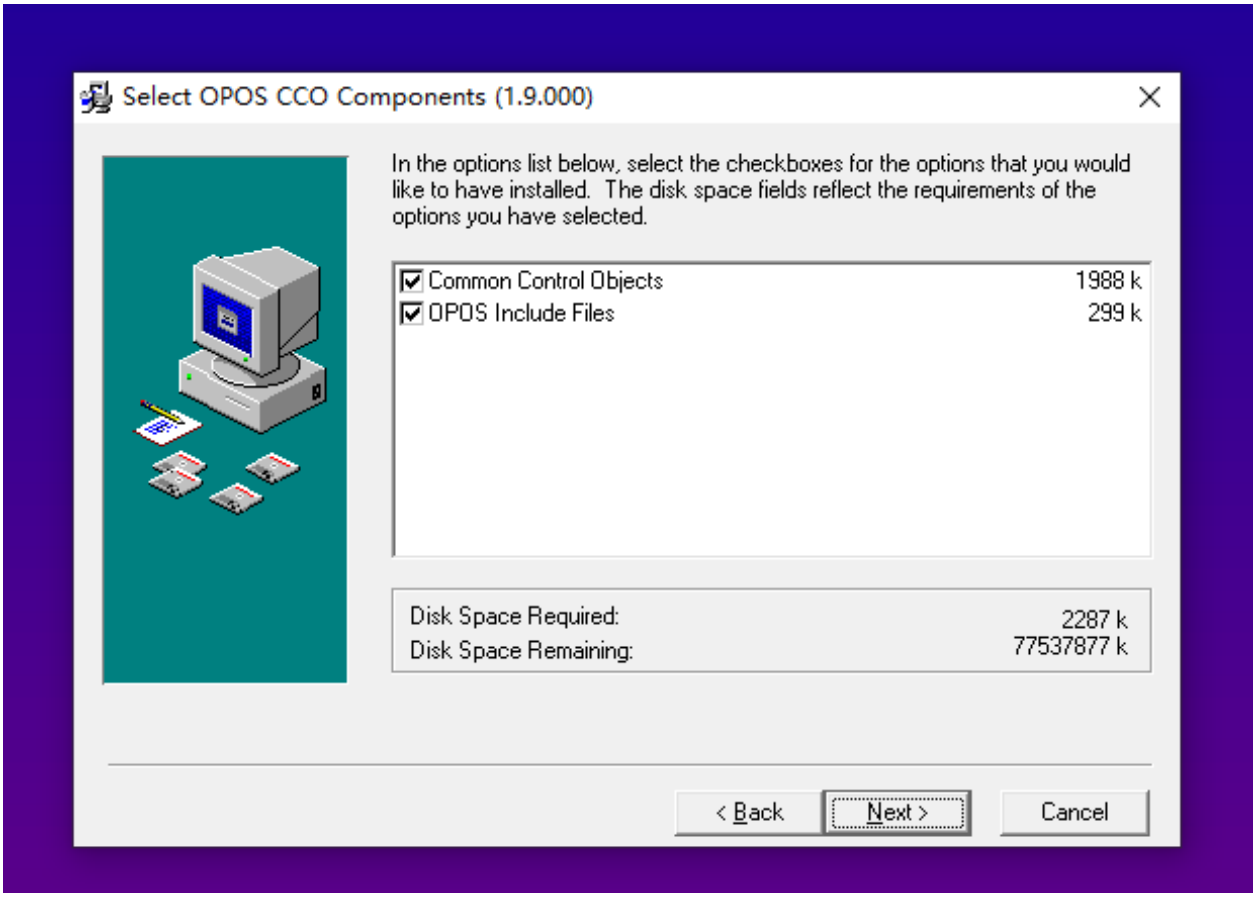


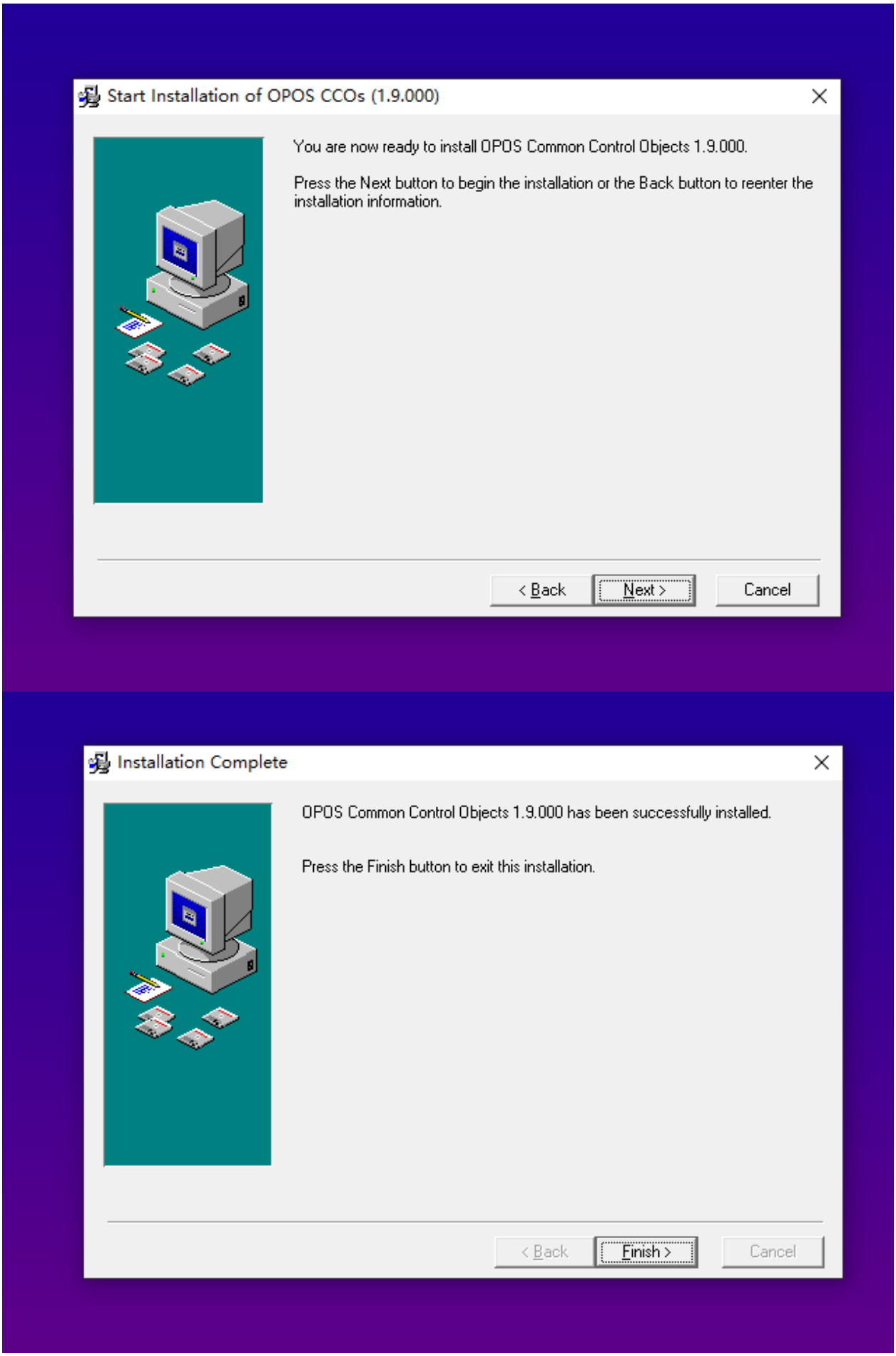



OPOS CCOs ReadMe File (1.9.000)
OPOS Common Control Objects
1.9.000
Updated April 29, 2005
Contents of this file:
* Features
* Update history
* Legal
* Contact information
NOTE: The installation package does not install any system DLLs.
It only puts files into the directories that you specify.
You must ensure that DLLs have been installed to support Microsoft
Visual C++ 6.0 ATL ActiveX controls. The following are believed to
properly support them:
- NT 4.0 with Service Pack 3 or later.
- Windows 2000.
- Windows XP.
- Windows Server 2003.
- Windows 95 with DCOM98.
- Windows 98.
- Windows ME.
Some earlier versions may not have recent enough OLE support DLLs.
< Back
Next >
Cancel


Choose Destination Location for OPOS CCOs (1.9.000)
Setup will install OPOS Common Control Objects 1.9.000 in subdirectories of the folder selected below.
* The Common Control Objects will be placed in
C:\PROGRA~2\OPOS\CommonCO.
* The include files will be placed in
C:\PROGRA~2\OPOS\Include.
To install into a different folder, click Browse, and select another folder.
You can choose not to install OPOS Common Control Objects 1.9.000 by clicking Cancel to exit Setup.
Destination Folder
C:\PROGRA~2\OPOS
Browse...
< Back
Next >
Cancel

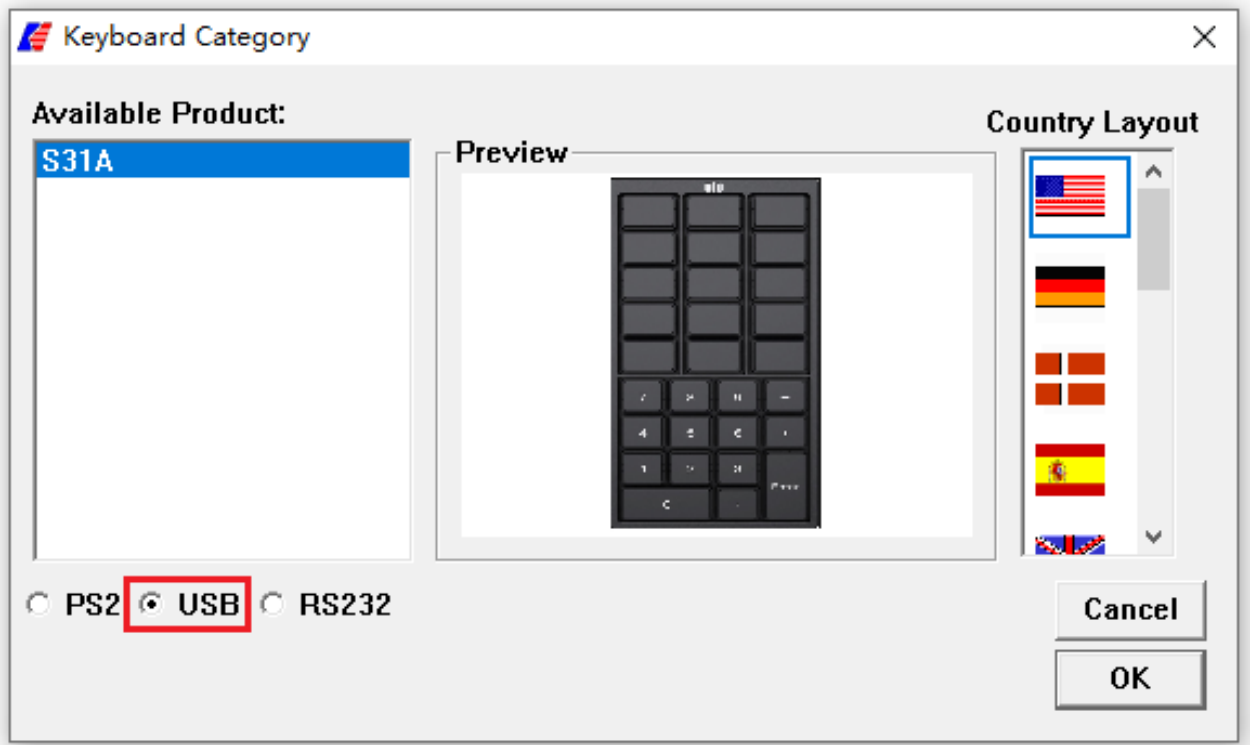

Backup Replaced OPOS CCO Files
This installation program can create backup copies of all files replaced during the installation. These files will be used when the software is uninstalled and a rollback is requested. If backup copies are not created, you will only be able to uninstall the software and not roll the system back to a previous state. Do you want to create backups of the replaced files?
Yes
No
Please select the directory where the replaced files will be copied.
Backup File Destination Directory
C:\PROGRA~2\OPOS\BACKUP
Browse...
< Back
Next >
Cancel


Select OPOS CCO Components (1.9.000)
In the options list below, select the checkboxes for the options that you would like to have installed. The disk space fields reflect the requirements of the options you have selected.
Common Control Objects 1988 k
OPOS Include Files 299 k
Disk Space Required: 2287 k
Disk Space Remaining: 77537877 k
< Back
Next >
Cancel

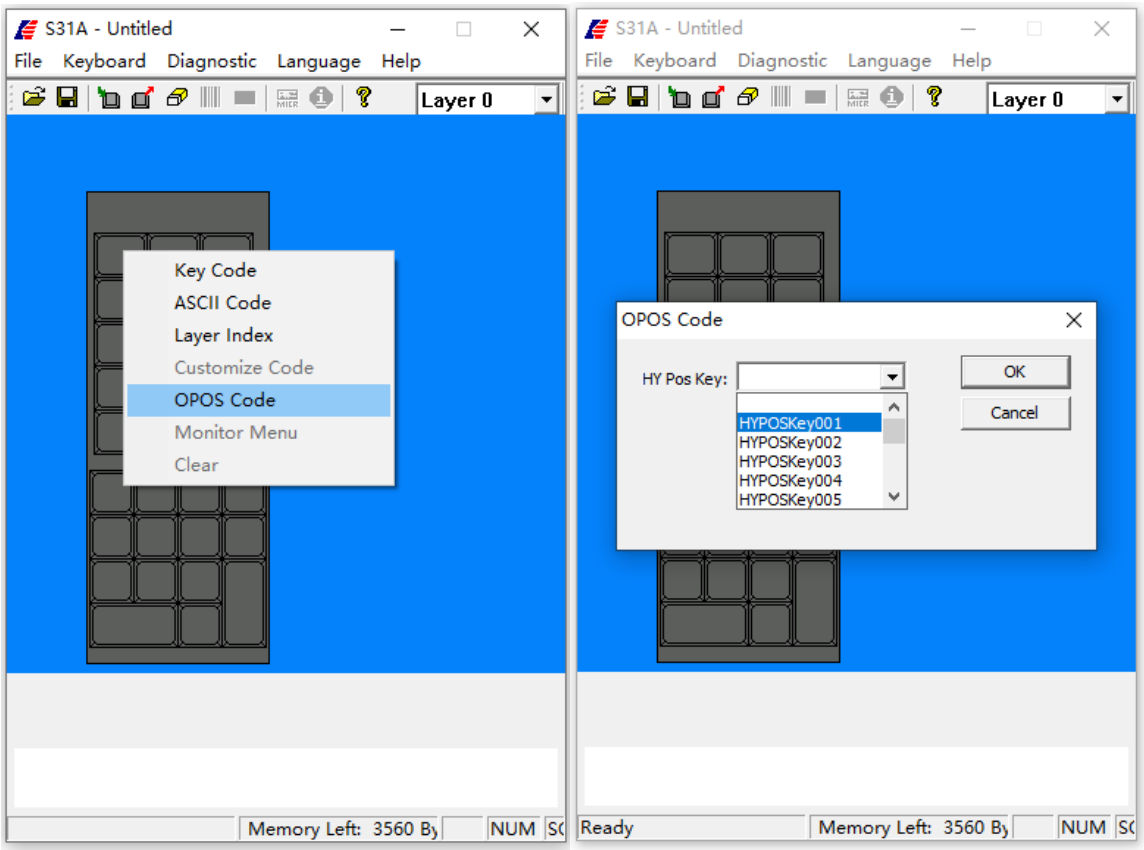


6.2 Matrix Maker Setting

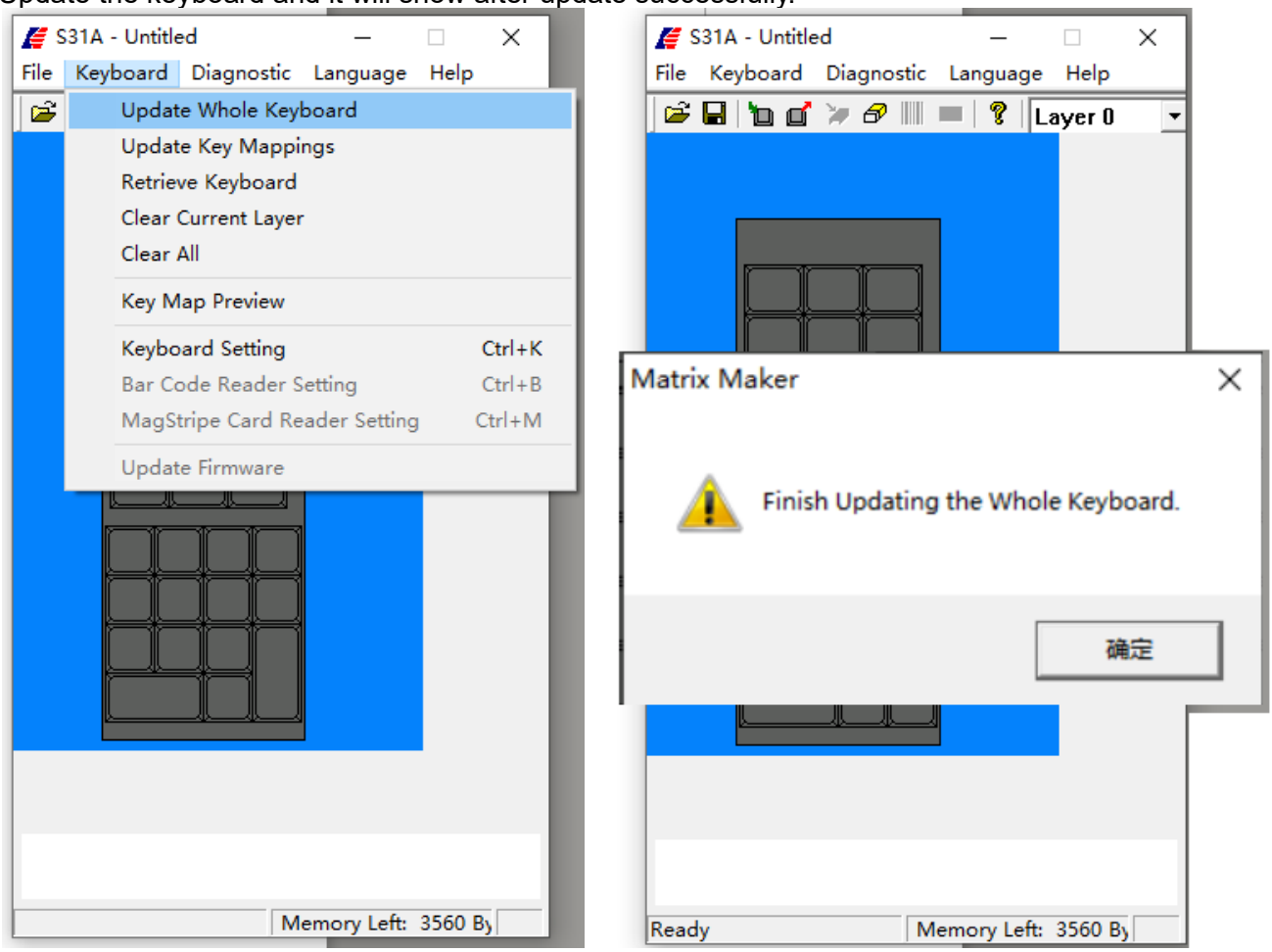
Open the programming utility Matrix Maker and select the USB interface.



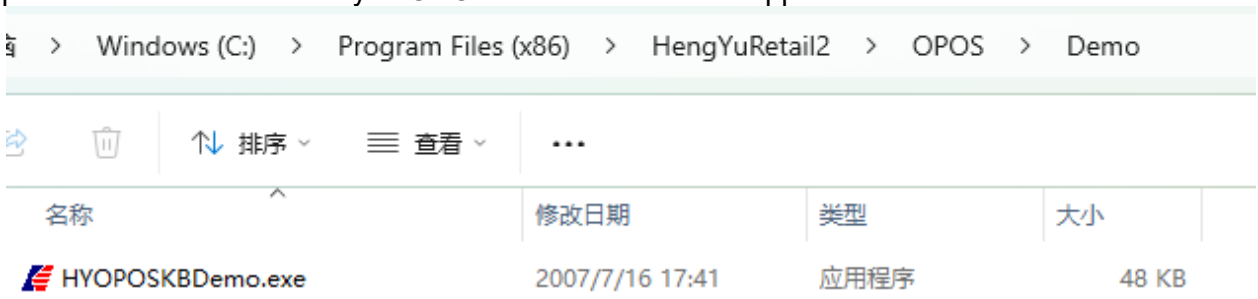
Select the key and click the mouse left button, then choose the OPOS Code.
Select one of HYPOSKey index and click OK. Typically, the keys of a keyboard start from HYPOSKey1 for usage. If it is a 31-key keyboard, HYPOSKey1 to HYPOSKey31 will be used to represent each key respectively. The index cannot be set as HYPOSKeyLock, otherwise, the program will not receive the key codes sent by the keyboard.



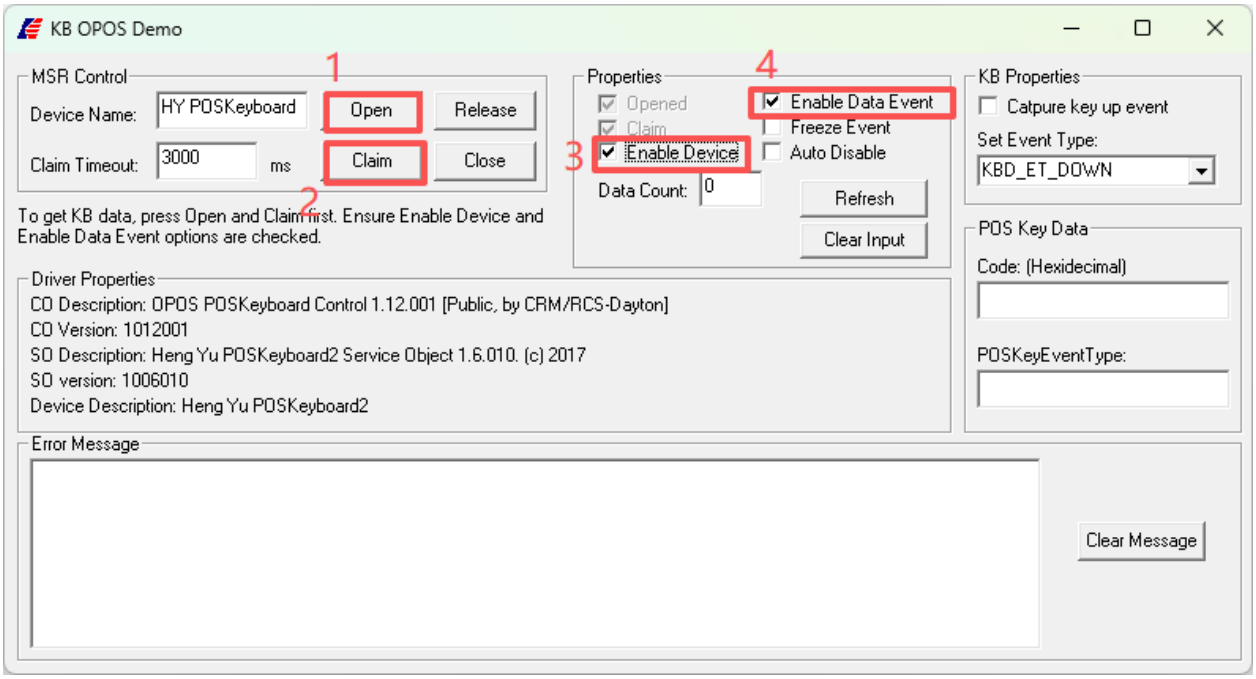
Update the keyboard and it will show after update successfully.



Open the installation directory of OPOS and find the Demo application.



Open the HYOPOSKBDemo.exe demo application and follow the sequence to click Open button, Claim button, select the Enable Device and then Enable Data Event. Then the something is shown in the "POS Key Data" area.

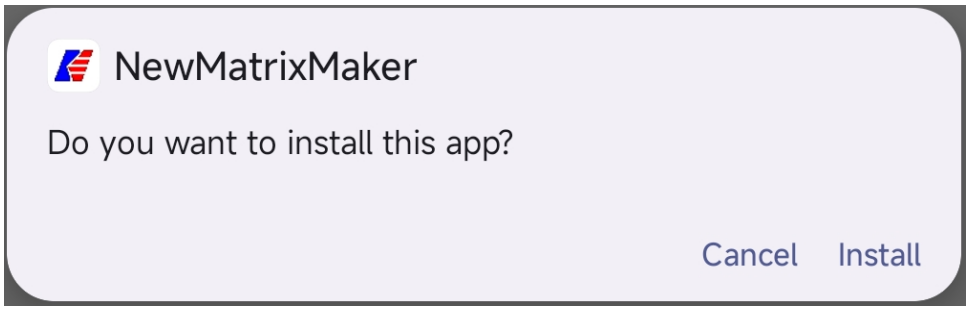


The "Data event" will be automatically unchecked every time a key is pressed. You need to check it again to receive and display the new key code.

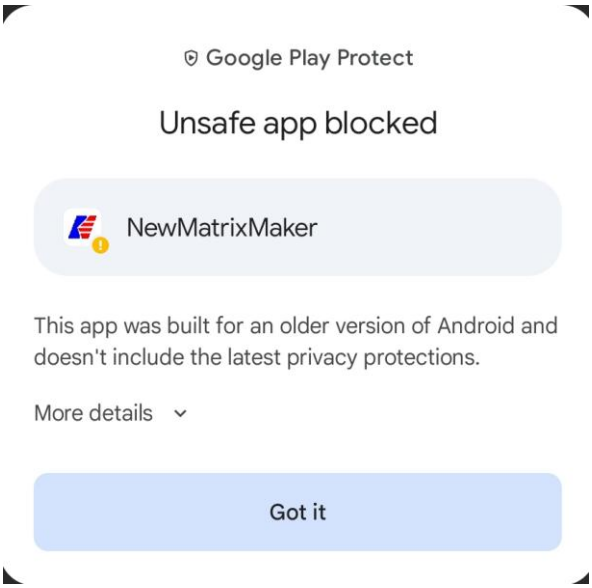
Android Matrix Maker

1. Program Installation

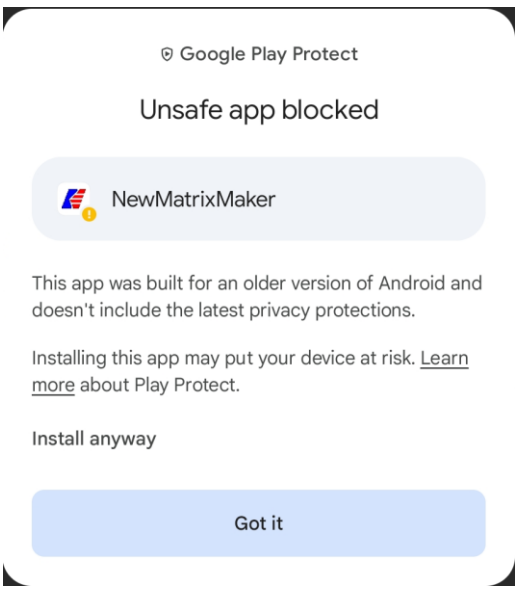
1. Put the com.hy.S31A.MM.apk to the Android device and click it to install
2. Choose Install



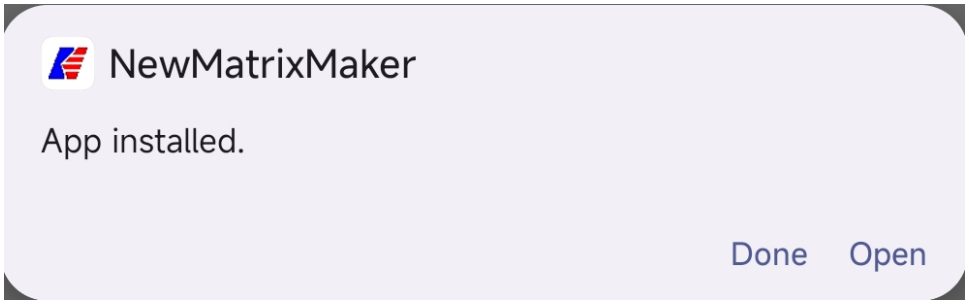
3. Choose “More details”



4. Choose “Install anyway”



5. Application will be installed

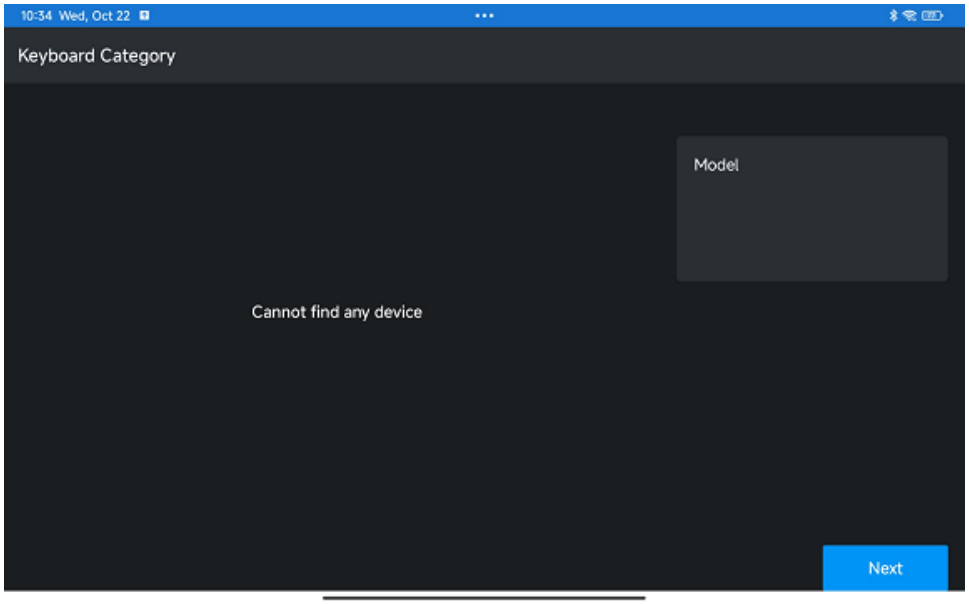

NewMatrixMaker
App installed.
Done
Open

2. Keyboard Programming Software

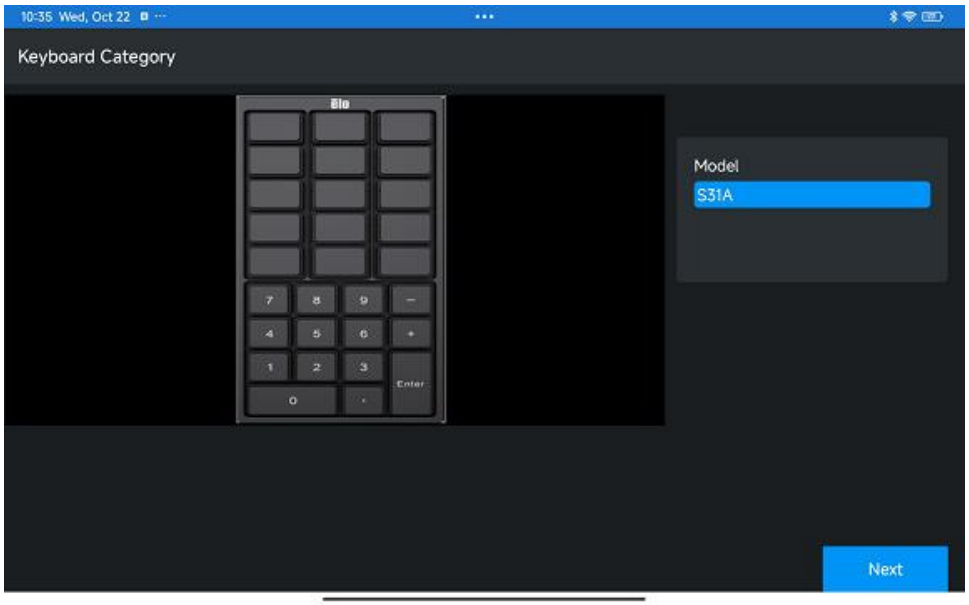
Find the Matrix Maker application icon and click it to run.

2.1 Select a keyboard

When the program runs, the Keyboard Category dialogue will appear. If the keyboard is not connected. The display will be shown below.



If the S31A is connected. The display will be shown as below



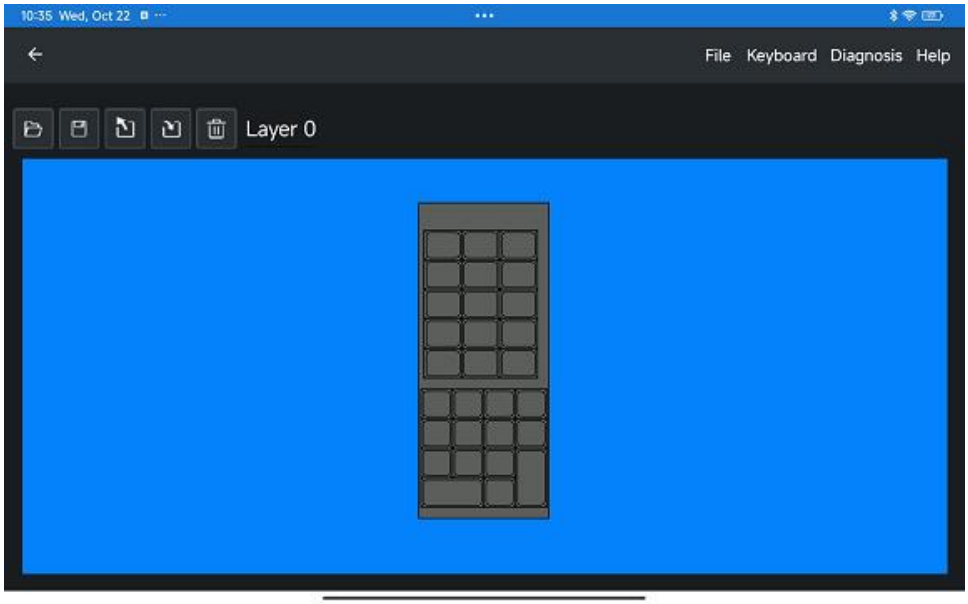
To program with a keyboard, you should follow the following instructions.

1. Choose the correct model of the keyboard in the "Available Product" list. You should see the image of the keyboard in the "Preview" frame.
2. Click next to program the keyboard

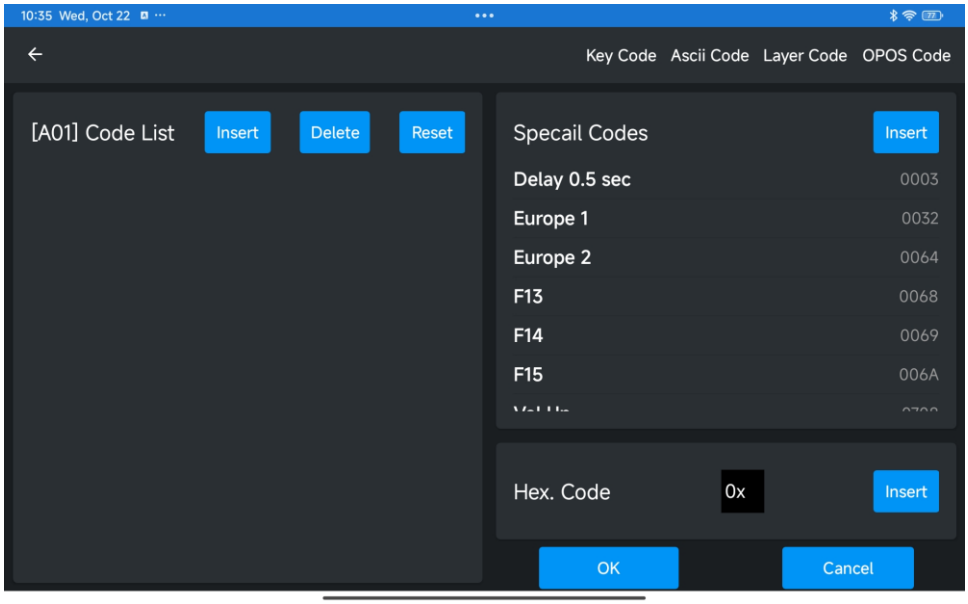
The following instructions are based on one of our models - S31A, it can also be applied for other models.

2.2 Edit Key Map

After selecting a model, you will be displayed with the default key layout which has no data for the programmable keys.

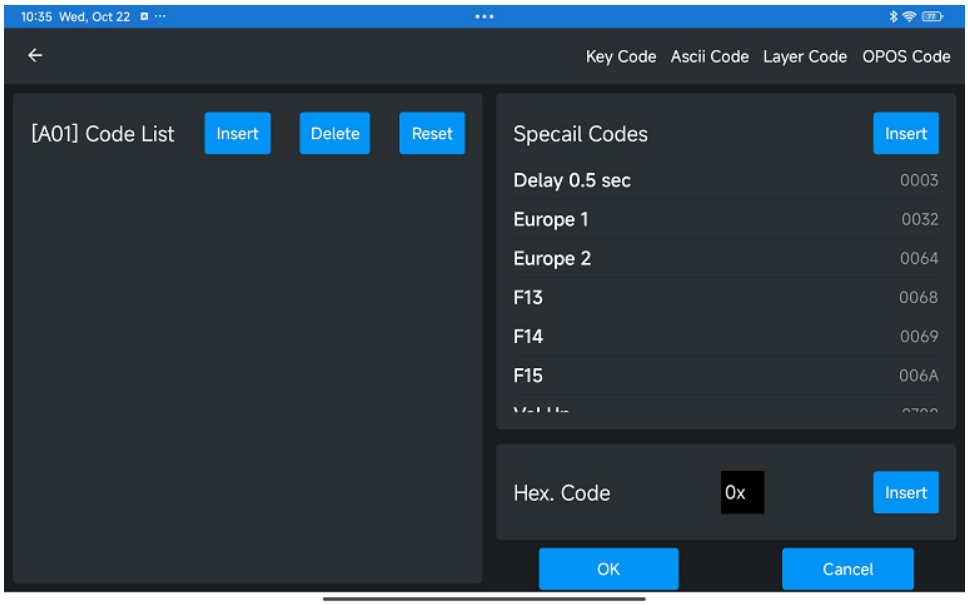


Clicking on that programmable key will display the options of assigning functions to that key. There are four methods to assign a function to the programmable key which will be explained in greater detail in the following sections. The four methods are Key Code, Ascii Code, Layer Code and OPOS code. The Key Code will be chosen by default.



2.2.1 Key Code

In this method, you can assign any scan codes to a key.



In the above dialogue window, the most popular key codes (scan codes) are shown in the “virtual keyboard” area, plus a few special codes which are listed in the “Special Codes” area. Selecting a key from the “keyboard” area or double clicking an item in “Special Codes” area will add that key’s code to the “Mapping Sequence” list. (Note : Some special codes only support in the specific OS). You may also type code directly from a connected keyboard. Up to 256 codes can be mapped to a single key position. Selecting a combination from the “Common Mapping” list will add the corresponding key codes into the “Mapping Sequence”.

Any key codes (scan codes) that are not selectable in this screen can be mapped by directly entering the hexadecimal code for that key into the box next to “0x” and pressing “Insert”.

For the definition of scan codes, please download Scan Code Translation Table from https://download.microsoft.com/download/1/6/1/161ba512-40e2-4cc9-843a-923143f3456c/translate.pdf

Example

If you press “Shift”, “H”, “E”, “Shift”, “L”, “L”, and “O” buttons in the “virtual keyboard”, the “Mapping Sequence” list will be shown as in the above dialogue window. After programming this key code sequence and sending the updated mapping to the keyboard (covered in a later section), if you type this button in Notepad, it will display “HEllo” if the Caps Lock is off. However, it will display “heLLO” if the Caps Lock is on.

If you want to delete “O” in the above “Mapping Sequence” list, you can right click the “O” item. A popup menu with two options will appear. Selecting the “Delete” option will delete the “O” item. Selecting the “Clear All” will remove all the items in the “Mapping Sequence” list.

If you want to add “S” before “H” in the above “Mapping Sequence” list, click the “H” item in the list first, then press “S” in the “virtual keyboard” picture. If you want to append the codes at the end of the list, please make sure to select an empty mapping position in the list.

Caution:

1. Please pay special attention when using the Shift, Alt, and Ctrl keys as they have two states: down and up. For example, if you press the left Shift key once in the “virtual keyboard” area, you will only get a down code which will keep the key in a down state. If you were to keep this programming and press that key in an application, it would behave as if the left Shift key was down continuously. Again, please pay special attention to the function

of these keys and their respective up/down codes to get the functions you desire.

2. following codes cannot be assigned with other codes:

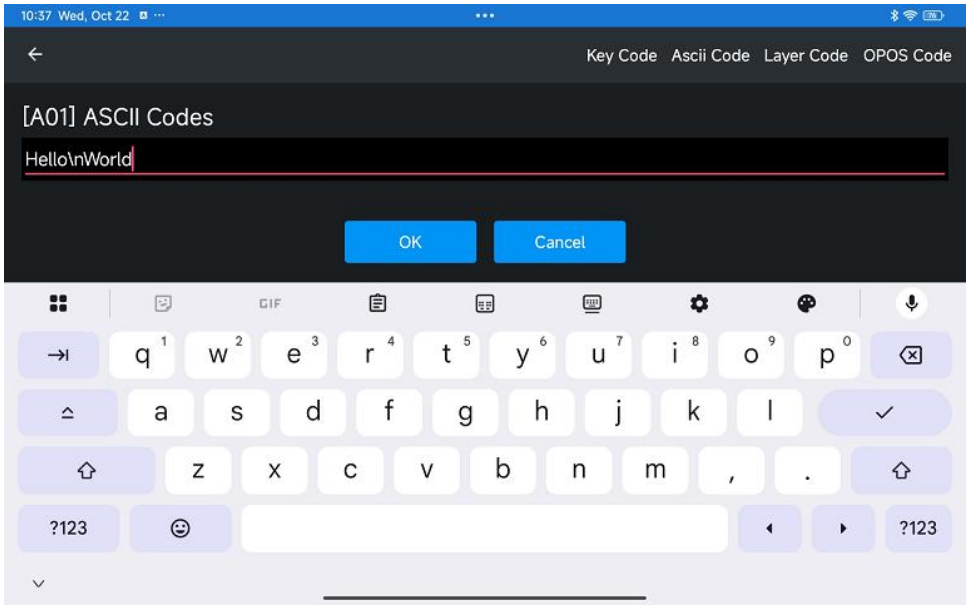
<Vol Up>, <Vol Down>, <Media Select>, <Mail>, <Calculator>, <My Computer>, <WWW Search>. On the other hand, if other code is assigned, the above codes cannot be appended.

2.2.2 ASCII Code

Using the ASCII method, you can assign any printable ASCII Codes, i.e. A-Z, a-z, 0-9, +, - ,* , / , and punctuation symbols. Up to 255 ASCII codes can be assigned. Five special symbols can also be assigned by using the following representations:

Symbol	Representation
Enter Character	\n or \N
Esc Character	\e or \E
Tab Character	\t or \T
\ Character	\\
Delay 0.5 second	\d or \D
ASCII Code	\xHH where HH must be a two-digit hexadecimal integer

For example, if you program a key with “Hello\nWorld”, as shown in the following diagram,



After programming this button, if you type this button in Notepad, it will display, Hello World.

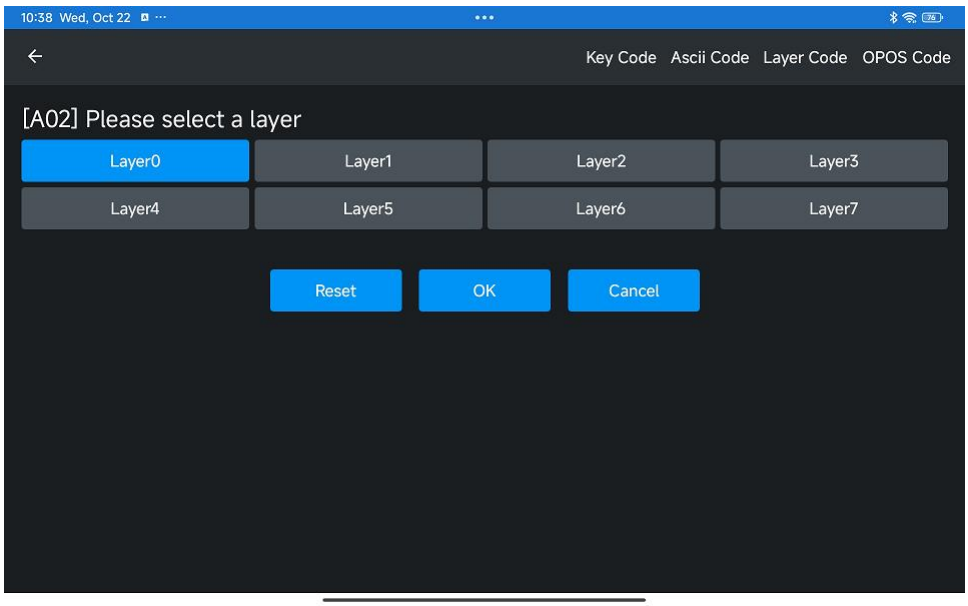
Note:

1. Caps Lock will not modify the output of keys using this method. The key codes will always be output in the same way they are programmed .
2. The output of the character string follows the Country Code setting in the Keyboard Setting dialogue (Refer to Section 3). For example, if you enter “How are you?” from the keyboard connected to your PC with a German OS, but you choose USA for the Country Code in the Keyboard Setting dialogue, the output will become “How are you?”.

2.2.3 Layer Index

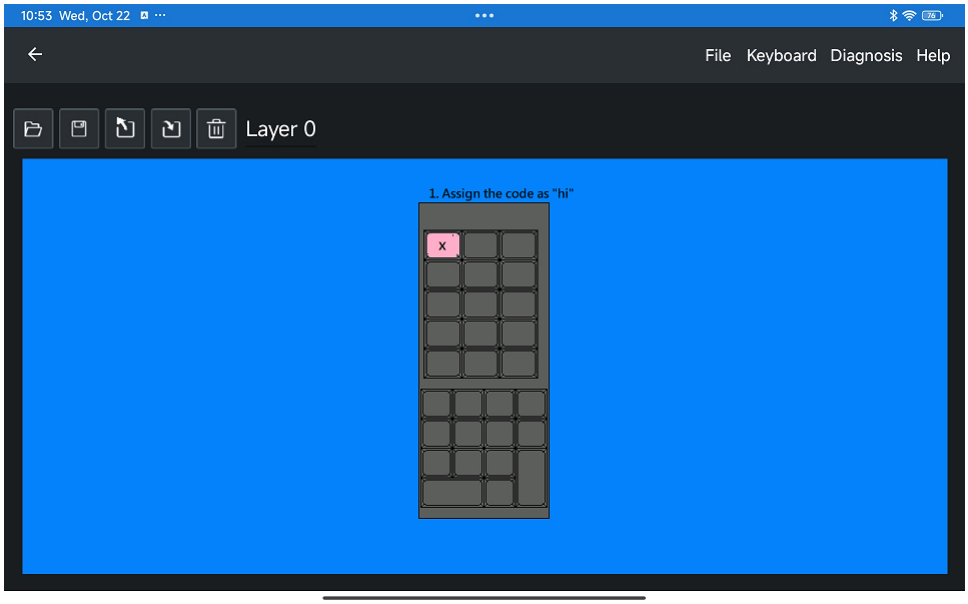
Layers are useful in programming different codes to the same key. The output of the codes will be determined by the layer index which can be selected by another key programmed with the appropriate

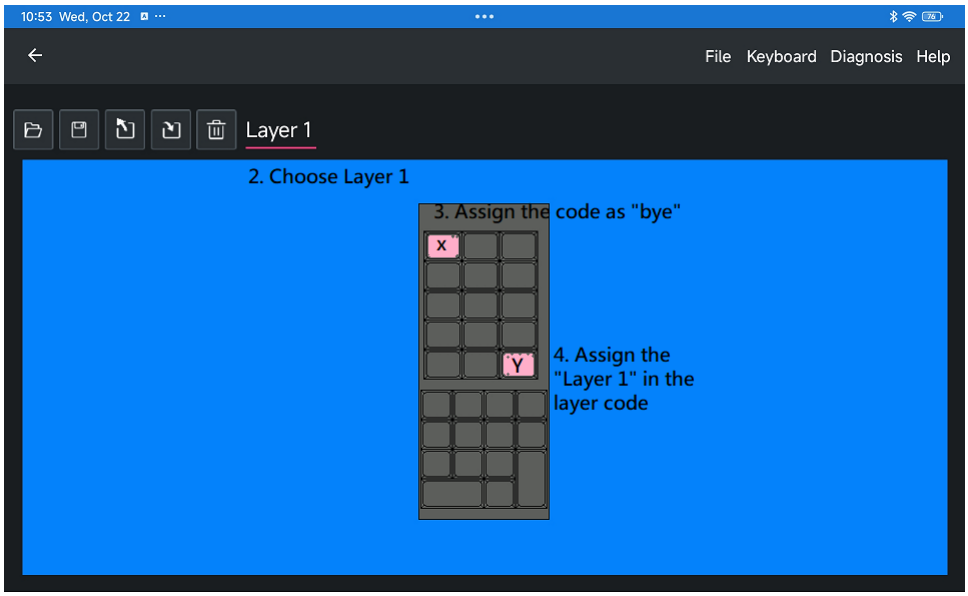
layer index code. There are at most 16 different programmable layers depending on the category of the keyboard. You can assign a layer index to any programmable key you like. Below is a screenshot of the Layer Index popup dialogue. After programming a layer index to a key, this key will be reserved on all layers.



Layer index keys can be regarded as performing a function much like the Shift key: when pressed and held down, it will output a different code than the base layer would normally send.

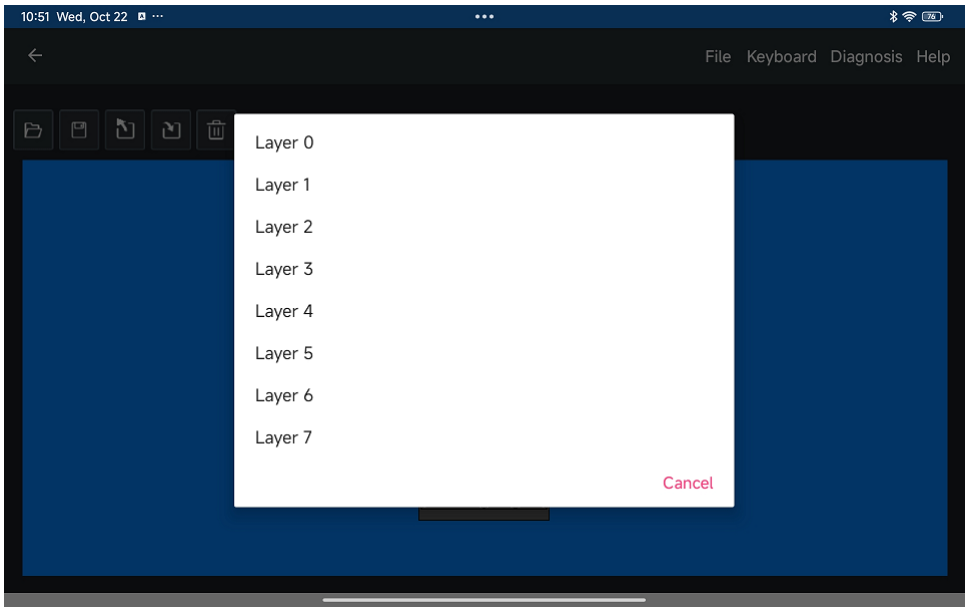
For example, if a key is programmed to output “hi” on layer 0 and “bye” on layer 1, it will output “hi” when pressed normally and “bye” when pressed while holding the key assigned to perform the “Layer 1 index” function (please see the following screenshots for further explanation).





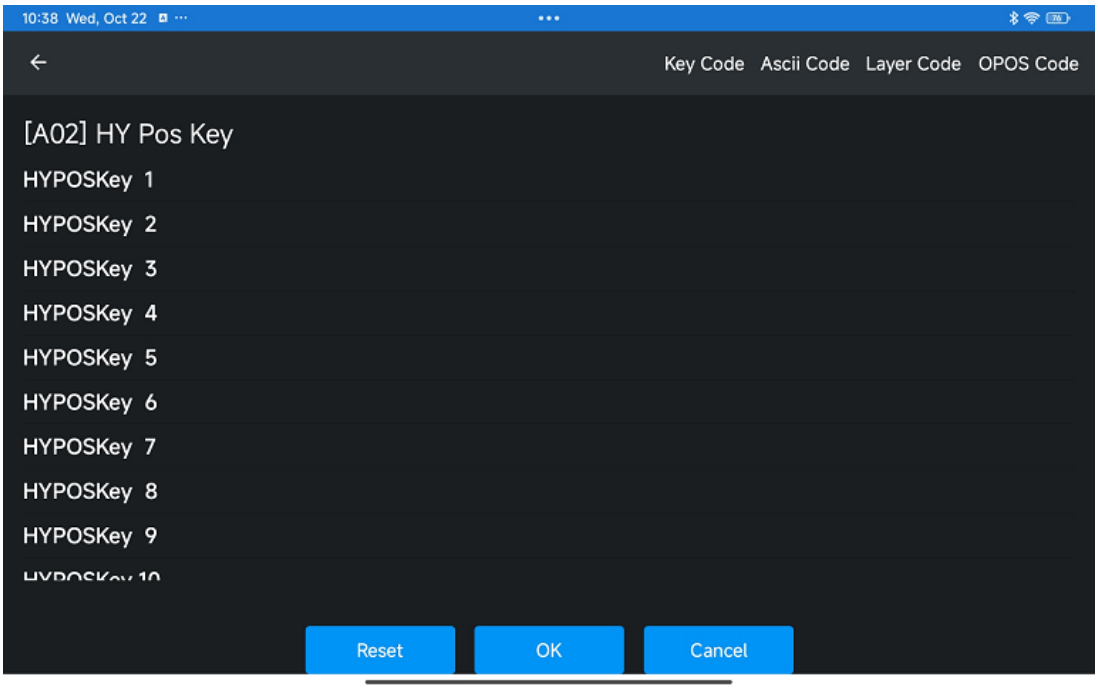
After programming this key map, if you press the x button in the keyboard, it will display “hi”. If you press the Y button without releasing, it will display “bye” if you press the x button.

To program key codes on alternate layers, please select each layer from the drop-down menu located on the toolbar (shown in the screenshot below) and program key codes as explained in the previous sections. Please keep in mind that you must assign a corresponding layer index key to output layer-based codes. You may also assign layer indexes to the key lock if available (optional).



2.2.4 OPOS code

Any keys can be assigned to an OPOS key which is handled by our OPOS driver.



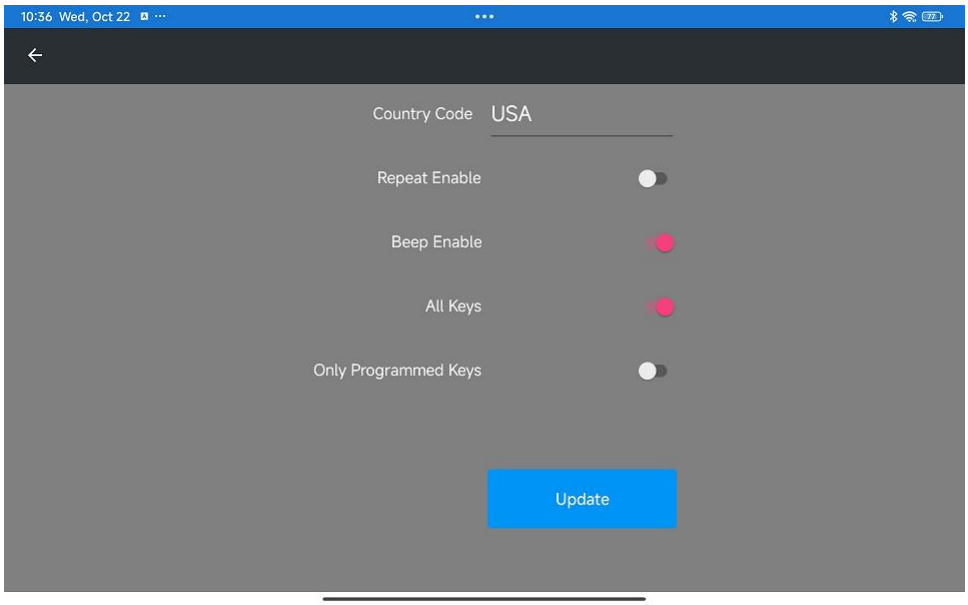
Our OPOS driver is designed to support up to 160 OPOS Keys and 6 KeyLocks.

Note:

1. Our OPOS driver must be installed first.
2. The programmable keys assigned as these codes are effective only when the keyboard is connected to the PC which is powered on.

3. Keyboard Setting

On the menu bar, click ‘Keyboard’ and then ‘Keyboard Setting’, the following dialogue window will appear,



To make the keyboard beep upon pressing a key, please check the ‘Beep Enable’ box. You may then select if you would like all keys to beep or only programmed keys to beep when pressed down.

If you would like the key codes to be output repeatedly when pressing the button continuously, click ‘Repeat Enable’ option. If this is not selected the code associated with each key will only be output once even while holding down a key.

After editing the settings, you may press ‘Update’ button to send them directly to the keyboard and then the dialogue window will be automatically closed or you my press ‘OK’ button to save the settings in the program memory (settings will not be transferred to the keyboard until you click the ‘Update Whole Keyboard’ button – see section 6 for more information).

4. Diagnostic

4.1 Enter Test Mode

Pressing a key will show that key’s position. (For testing the keyboard only.) If your keyboard has key lock feature and the repeat feature is turned on, the keyboard will continuously send the key lock position. To stop this, you can press any other key.

4.2 Exit Test Mode

Pressing a key will show the code programmed to that key.

4.3 Load Factory Setting

Reload the default factory setting to the device. This function can be used when the QUERTY section of the keymap is lost. For the USB keyboard, please re-plug the keyboard and close the software after executing this function successfully.

4.4 Reset

Reset the keyboard

4.5 Firmware Version

Get the current version of the firmware.

4.6 Update Key Mappings

To send only the key mapping data to the keyboard device, click Keyboard > Update Key Mappings on the menu bar or on the toolbar, click  icon.

During updating, please do not press any keys on the keyboard or click the mouse or touch the touch panel for better performance.

4.7 Update Whole Keyboard

To send the settings for the entire keyboard device (including Keyboard Settings and key mapping data), click Keyboard > Update Whole Keyboard on the menu bar.

During updating, please do not press any keys on the keyboard or click the mouse or touch the touch panel for better performance.

4.8 Retrieve Keyboard

To retrieve the data currently programmed to a keyboard device (including MSR settings, Keyboard

Settings and key mapping data), click Keyboard > Retrieve Keyboard on the menu bar or click  icon on the toolbar.

During retrieving, please do not press any keys on the keyboard or click the mouse or touch the touch panel for better performance.

4.9 Clear All

To clear the data in the Matrix Maker program memory (including Keyboard Settings, and key mapping data), click Keyboard > Clear All on the menu bar or click  icon on the toolbar. This action only clears the Matrix Maker program memory - it does not clear the settings in the actual keyboard.

4.10 Save

To save all current settings in the Matrix Maker program memory to a file, click File >Save on the menu bar or click icon  on the toolbar.

4.11 Open

To open a saved Matrix Maker settings file, click File > Open on the menu or click  icon on the toolbar. An error may occur if you choose a setting file of a newer version on the Matrix Maker software with an older version.

Linux Matrix Maker

1. Program Installation

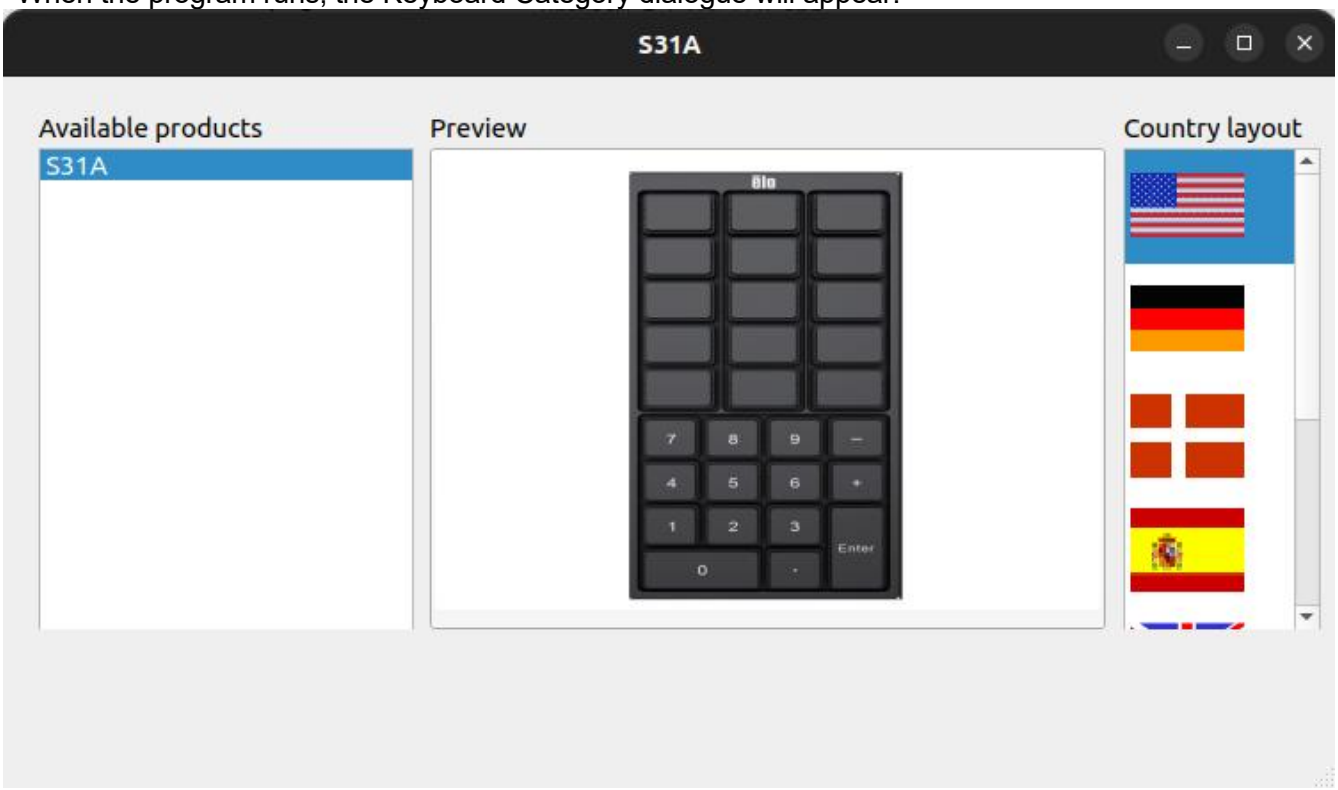
Make a folder and put the MatrixMaker-x86_64.AppImage-S31A to this folder

2. Keyboard Programming Software

In terminal, go to the folder, type sudo ./MatrixMaker-x86_64.AppImage-S31A to run the software

2.1 Select a keyboard

When the program runs, the Keyboard Category dialogue will appear.



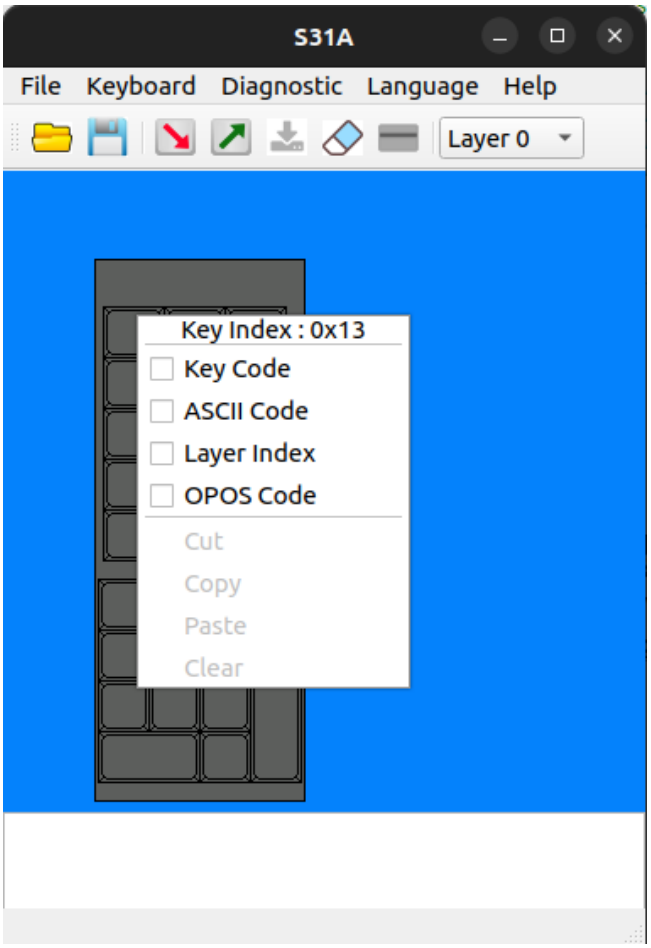
To program with a keyboard, you should follow the following instructions.

1. Choose the correct model of your keyboard for the "Available Product" list. You should see the image of your keyboard in the "Preview" frame.
2. Select the country layout you want to program, and then press the Preview image to enter the program

The following instructions are based on one of our models - S31A, it can also be applied for other models.

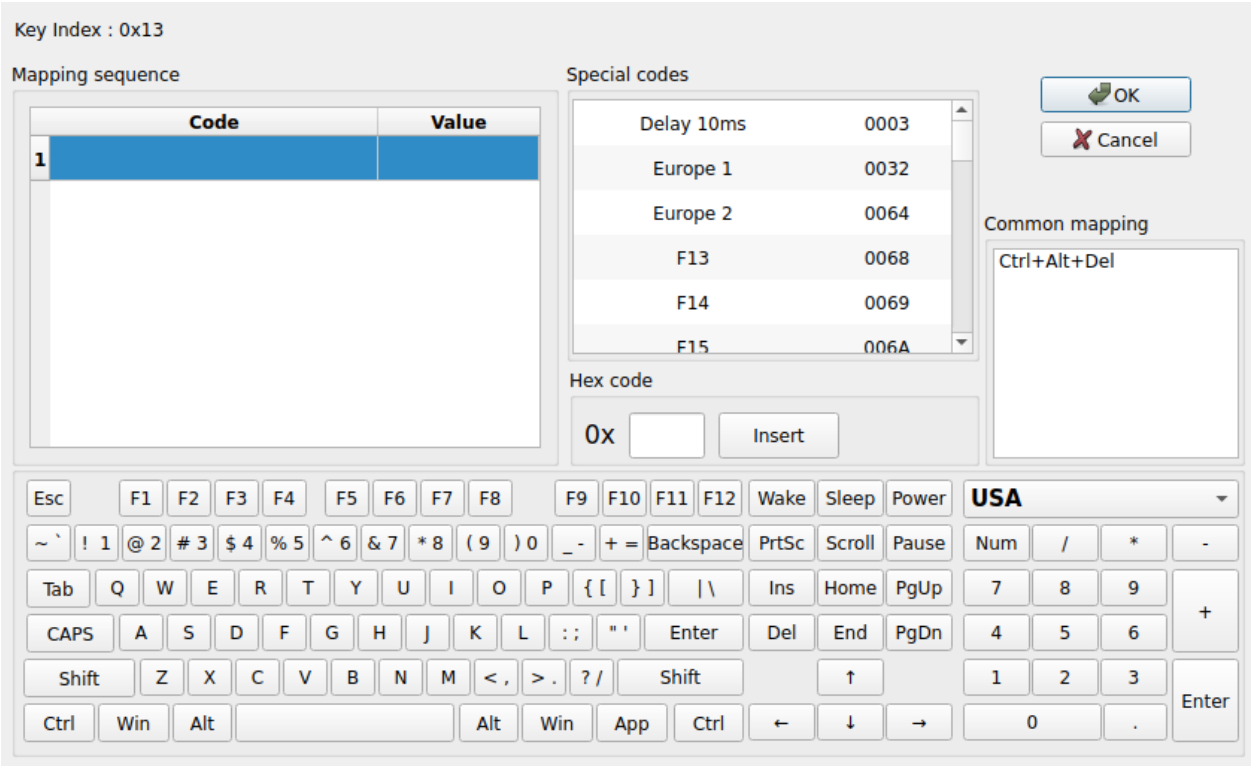
2.2 Edit Key Map

After selecting a model, you will be displayed with the default key layout which has no data for the programmable keys. Notice that if you roll your mouse over certain keys on the layout image they will change to a light grey color. This indicates that the keys are programmable. Clicking the left mouse button on that programmable key will display a popup menu with options of assigning functions to that key. There are four methods to assign a function to the programmable key which will be explained in greater detail in the following sections.



2.2.1 Key Code

In this method, you can assign any scan codes to a key.



In the above dialogue window, the most popular key codes (scan codes) are shown in the “virtual keyboard” area, plus a few special codes which are listed in the “Special Codes” area. Selecting a key from

the “keyboard” area or double clicking an item in “Special Codes” area will add that key’s code to the “Mapping Sequence” list. (**Note : Some special codes only support in the specific OS)**. You may also type code directly from a connected keyboard. Up to 256 codes can be mapped to a single key position. Selecting a combination from the “Common Mapping” list will add the corresponding key codes into the “Mapping Sequence”.
Any key codes (scan codes) that are not selectable in this screen can be mapped by directly entering the hexadecimal code for that key into the box next to “0x” and pressing “Insert”.
For the definition of scan codes, please download Scan Code Translation Table from
https://download.microsoft.com/download/1/6/1/161ba512-40e2-4cc9-843a-923143f3456c/translate.pdf

Example

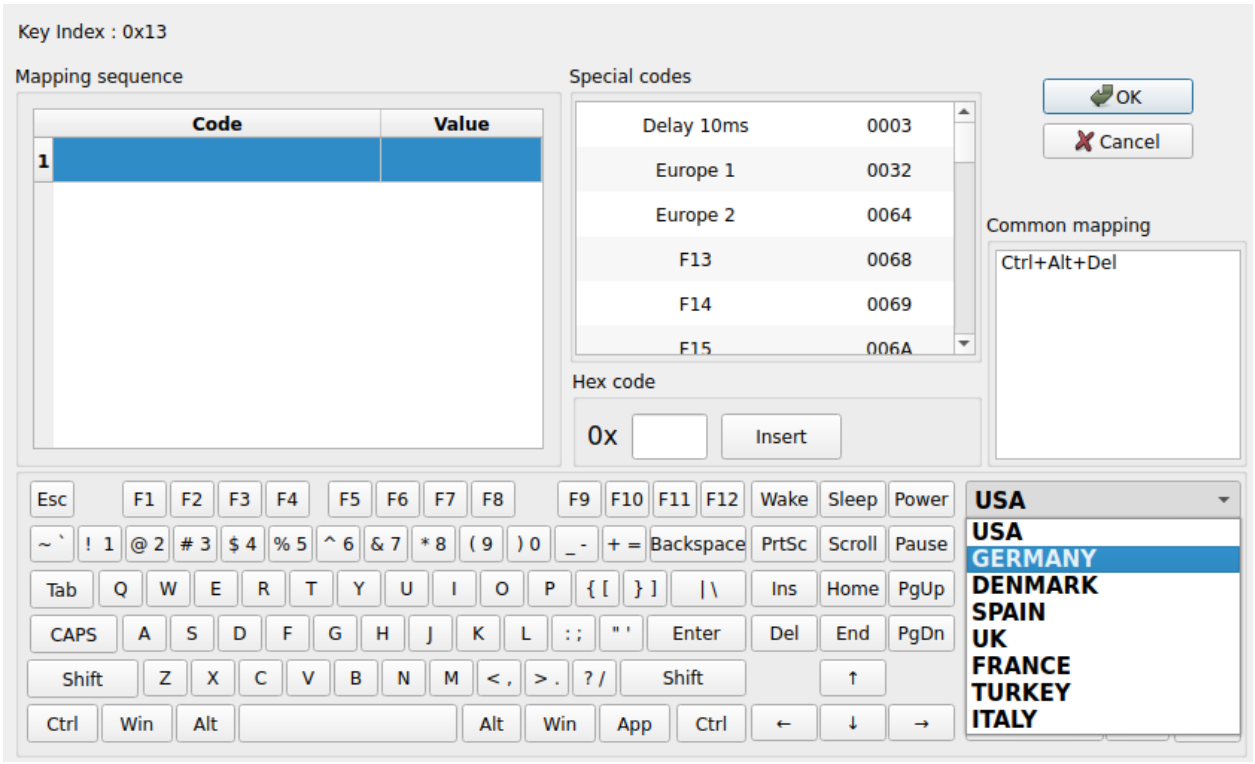
If you press “Shift”, “H”, “E”, “Shift”, “L”, “L”, and “O” buttons in the “virtual keyboard”, the “Mapping Sequence” list will be shown as in the above dialogue window. After programming this key code sequence and sending the updated mapping to the keyboard (covered in a later section), if you type this button in Notepad, it will display “HEllo” if the Caps Lock is off. However, it will display “heLLO” if the Caps Lock is on.

If you want to delete “O” in the above “Mapping Sequence” list, you can right click the “O” item. A popup menu with two options will appear. Selecting the “Delete” option will delete the “O” item. Selecting the “Clear All” will remove all the items in the “Mapping Sequence” list.
If you want to add “S” before “H” in the above “Mapping Sequence” list, click the “H” item in the list first, then press “S” in the “virtual keyboard” picture. If you want to append the codes at the end of the list, please make sure to select an empty mapping position in the list.

Caution:

1. Please pay special attention when using the Shift, Alt, and Ctrl keys as they have two states: down and up. For example, if you press the left Shift key once in the “virtual keyboard” area, you will only get a down code which will keep the key in a down state. If you were to keep this programming and press that key in an application, it would behave as if the left Shift key was down continuously. Again, please pay special attention to the function of these keys and their respective up/down codes to get the functions you desire.
2. For USB interface, the following codes cannot be assigned with other codes:
   <Wake>, <Sleep>, <Power>, <Vol Up>, <Vol Down>, <Media Select>, <Mail>, <Calculator>, <My Computer>, <WWW Search>. On the other hand, if other code is assigned, the above codes cannot be appended.

Depending on the version of the software, you can change the virtual keyboard layout by selecting the country you like as shown below.

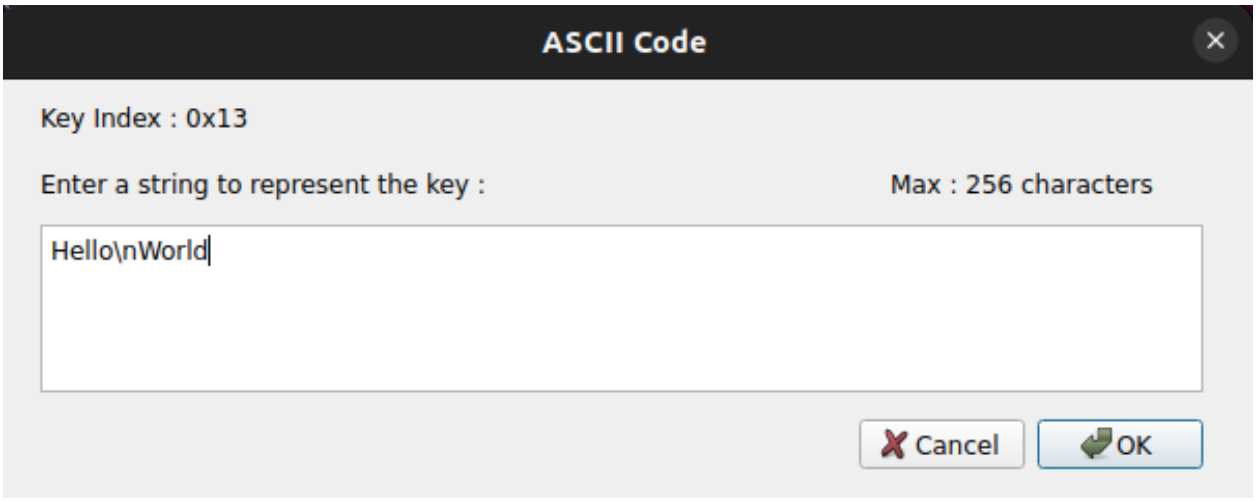


2.2.2 ASCII Code

Using the ASCII method, you can assign any printable ASCII Codes, i.e. A-Z, a-z, 0-9, +, - ,* , / , and punctuation symbols. Up to 255 ASCII codes can be assigned. Five special symbols can also be assigned by using the following representations:

Symbol	**Representation**
Enter Character	\n or \N
Esc Character	\e or \E
Tab Character	\t or \T
\ Character	\\
Delay 0.5 second	\d or \D
ASCII Code	\xHH where HH must be a two-digit hexadecimal integer

For example, if you program a key with “Hello\nWorld”, as shown in the following diagram,



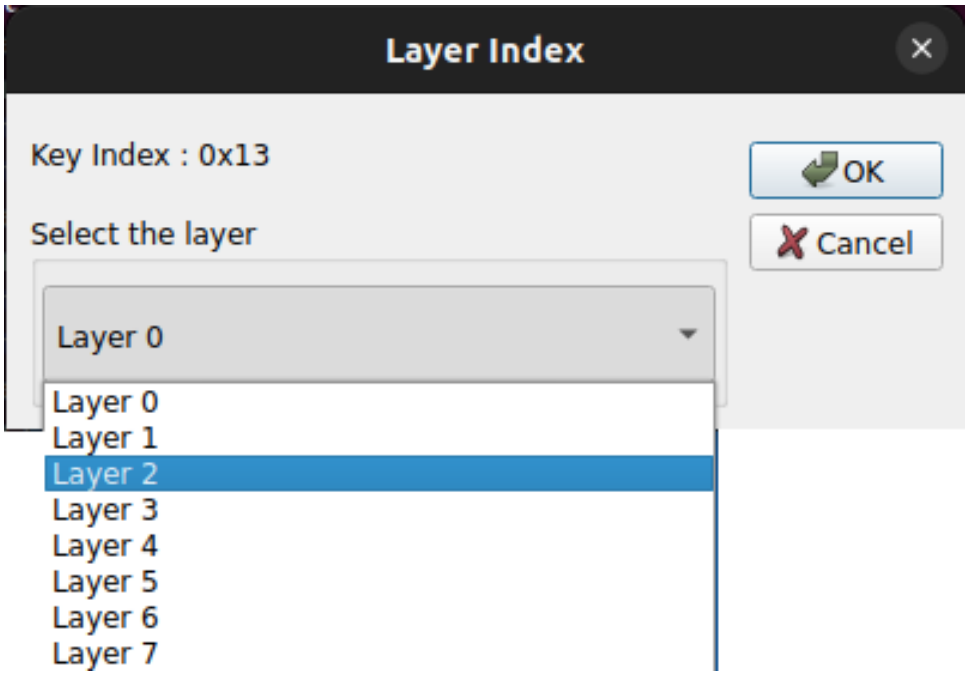
After programming this button, if you type this button in Notepad, it will display Hello World.

Note:

1. Caps Lock will not modify the output of keys using this method. The key codes will always be output in the same way they are programmed .
2. The output of the character string follows the Country Code setting in the Keyboard Setting dialogue (Refer to Section 3). For example, if you enter “How are you?” from the keyboard connected to your PC with a German OS, but you choose USA for the Country Code in the Keyboard Setting dialogue, the output will become “How are you?”.

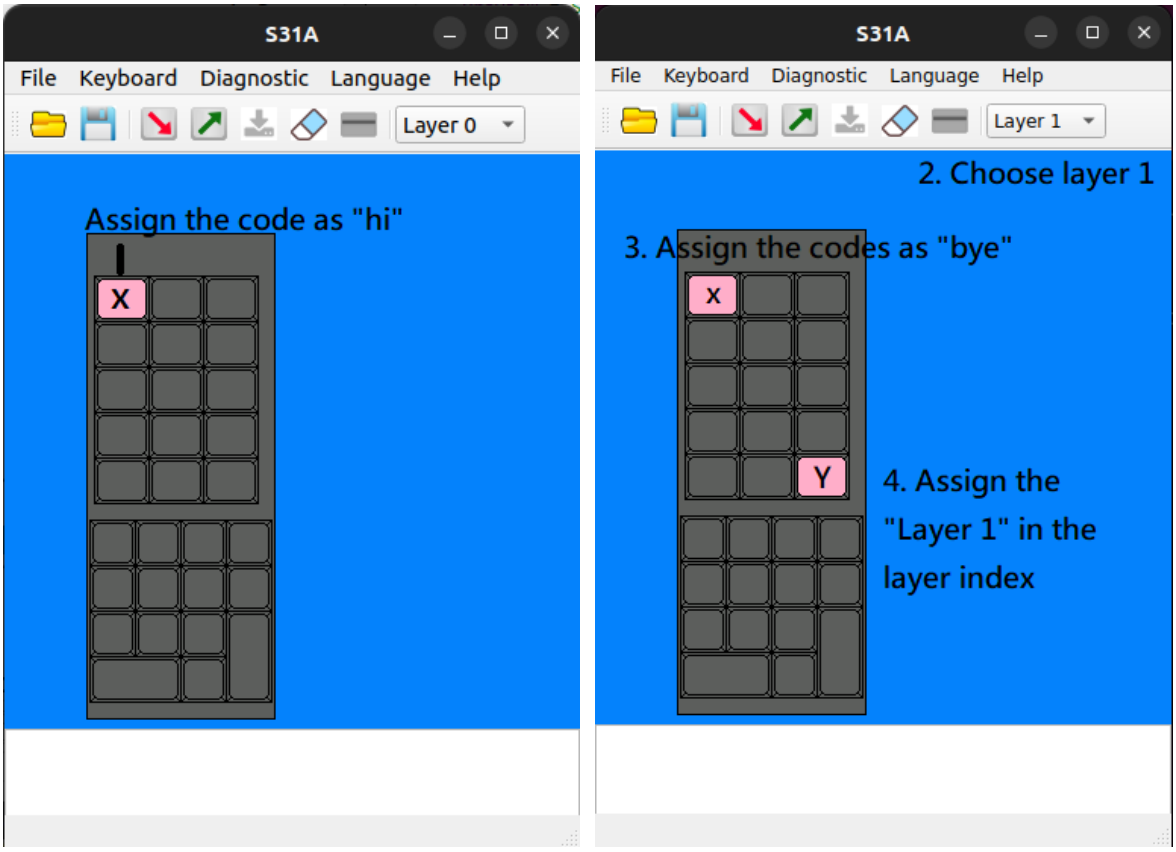
2.2.3 Layer Index

Layers are useful in programming different codes to the same key. The output of the codes will be determined by the layer index which can be selected by another key programmed with the appropriate layer index code. There are at most 16 different programmable layers depending on the category of the keyboard. You can assign a layer index to any programmable key you like. Below is a screenshot of the Layer Index popup dialogue. After programming a layer index to a key, this key will be reserved on all layers.

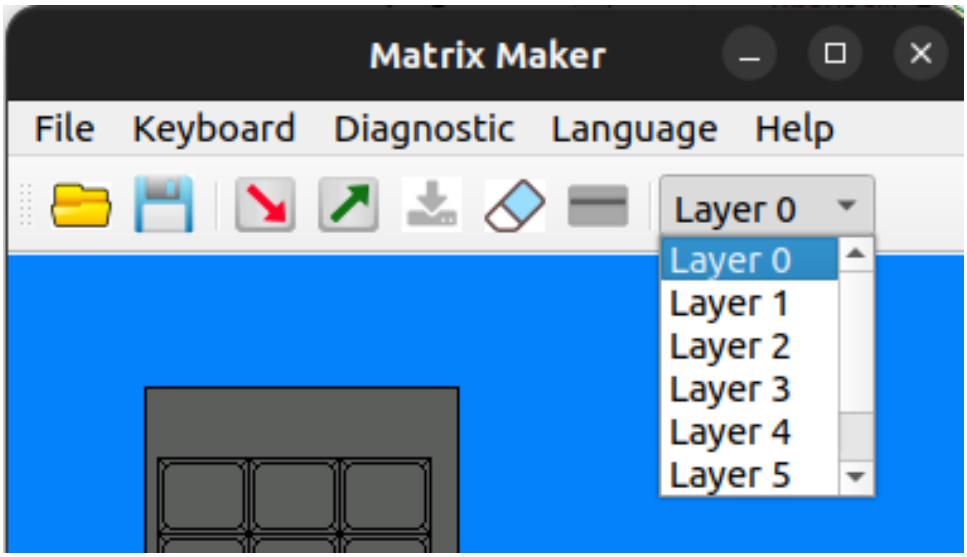


Layer index keys can be regarded as performing a function much like the Shift key: when pressed and held down, it will output a different code than the base layer would normally send.

For example, if a key is programmed to output “hi” on layer 0 and “bye” on layer 1, it will output “hi” when pressed normally and “bye” when pressed while holding the key assigned to perform the “Layer 1 index” function (please see the following screenshots for further explanation).

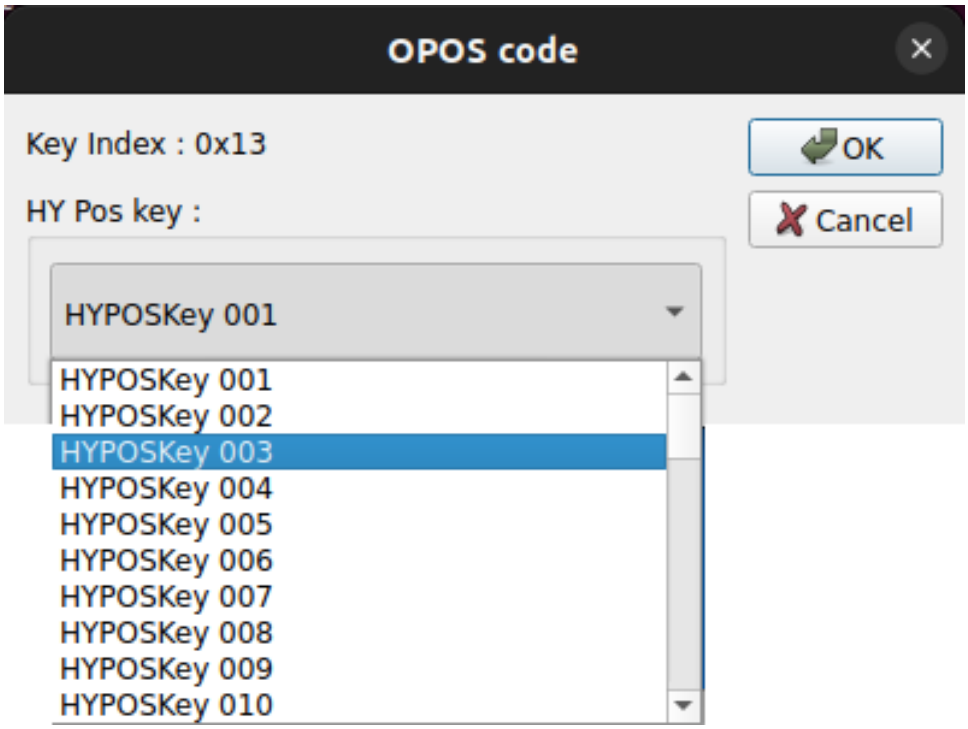


After programming this key map, if you press the x button in the keyboard, it will display “hi”. If you press the Y button without releasing, it will display “bye” if you press the X button.
To program key codes on alternate layers, please select each layer from the drop-down menu located on the toolbar (shown in the screenshot below) and program key codes as explained in the previous sections. Please keep in mind that you must assign a corresponding layer index key to output layer-based codes. You may also assign layer indexes to the key lock if available (optional).



2.2.4 OPOS code

Any keys can be assigned to an OPOS key which is handled by our OPOS driver.



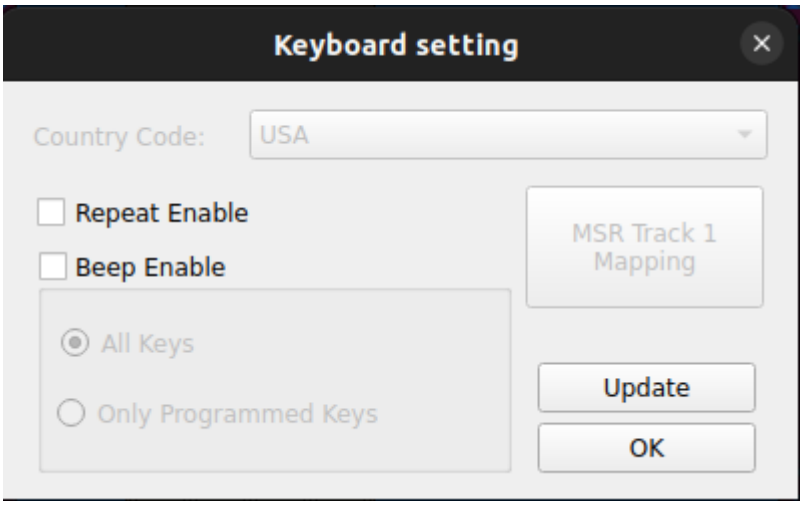
Our OPOS driver is designed to support up to 160 OPOS Keys and 6 OPOS KeyLocks.

Note:

1. Our OPOS driver must be installed first.
2. The programmable keys assigned as these codes are effective only when the keyboard is connected to the PC which is powered on.

3. Keyboard Setting

On the menu bar, click ‘Keyboard’ and then ‘Keyboard Setting’, the following dialogue window will appear.



To make the keyboard beep upon pressing a key, please check the ‘Beep Enable’ box. You may then select if you would like all keys to beep or only programmed keys to beep when pressed down.

If you would like the key codes to be output repeatedly when pressing the button continuously, click ‘Repeat Enable’ option. If this is not selected the code associated with each key will only be output once even while holding down a key.

After editing the settings, you may press ‘Update’ button to send them directly to the keyboard and then the dialogue window will be automatically closed or you my press ‘OK’ button to save the settings in the program memory (settings will not be transferred to the keyboard until you click the ‘Update Whole Keyboard’ button – see section 6 for more information).

4. Diagnostic

4.1 Enter Test Mode

Pressing a key will show that key’s position. (For testing the keyboard only.) If your keyboard has key lock feature and the repeat feature is turned on, the keyboard will continuously send the key lock position. To stop this, you can press any other key.

4.2 Exit Test Mode

Pressing a key will show the code programmed to that key.

4.3 Load Factory Setting

Reload the default factory setting to the device. This function can be used when the QUERTY section of the keymap is lost. For the USB keyboard, please re-plug the keyboard and close the software after executing this function successfully.

4.4 Reset

Reset the keyboard only. (For testing the keyboard only.)

4.5 Firmware Version

Get the current version of the firmware.

4.6 Update Key Mappings

To send only the key mapping data to the keyboard device, click Keyboard > Update Key Mappings on the menu bar or on the toolbar, click  icon.

During updating, please do not press any keys on the keyboard or click the mouse or touch the touch panel for better performance.

4.7 Update Whole Keyboard

To send the settings for the entire keyboard device (including MSR settings, Keyboard Settings, key mapping data, Barcode Settings, MICR Settings and iButton Settings), click Keyboard > Update Whole Keyboard on the menu bar.

During updating, please do not press any keys on the keyboard or click the mouse or touch the touch panel for better performance.

4.8 Retrieve Keyboard

To retrieve the data currently programmed to a keyboard device (including MSR settings, Keyboard Settings and key mapping data), click Keyboard > Retrieve Keyboard on the menu bar or click  icon on the toolbar.

During retrieving, please do not press any keys on the keyboard or click the mouse or touch the touch panel for better performance.

4.9 Clear All

To clear the data in the Matrix Maker program memory (including MSR settings, Keyboard Settings, and key mapping data), click Keyboard > Clear All on the menu bar or click  icon on the toolbar. This action only clears the Matrix Maker program memory - it does not clear the settings in the actual keyboard.

4.10 Save

To save all current settings in the Matrix Maker program memory to a file, click File >Save on the menu bar or click  icon on the toolbar.

4.11 Open

To open a saved Matrix Maker settings file, click File > Open on the menu or click  icon on the toolbar. An error may occur if you choose a setting file of a newer version on the Matrix Maker software with an older version.

Chapter 5: Technical Support

Solutions to common problems

Problems	Recommended trouble-shooting methods
The Key doesn’t work/response	Check whether the key lock function is enabled. If not, please check in the host manger and confirm whether the keypad was disconnected.

Technical Assistance

Technical Specifications
Please visit www.elotouch.com/products
To obtain the technical specification of the device

Technical support
Please visit https://www.elotouch.com/support
Obtain the technical support

Refer to the last page on the manual for worldwide technical support phone numbers.

Chapter 6: Safety and Regulatory Information

Electrical Safety Information

The voltage, frequency and current requirements indicated by the manufacturer's label must be met. If these restrictions are not adhered to, connecting to a non-specified power supply can result in abnormal operation, equipment damage, or fire.
There are no serviceable parts for the operator inside the equipment. The hazardous voltage generated by the equipment is a safety hazard. Repairs can only be carried out by qualified service technicians.
If you have questions about the installation, contact a qualified electrician or manufacturer before powering the device on.

Emissions and Immunity Information

U.S. Users Note: This device has been tested and meets the limits of Class A digital devices under Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installations. This equipment generates, uses and radiates radio frequency energy, which, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

Canadian Users Note: This equipment complies with the Class A radio noise emission limits for digital equipment set out in the Canadian Industrial Radio Interference Regulations.

NOTES:
Use only the power cords and interconnect cables supplied with the device. Replacement of wires and cables provided may endanger electrical safety or CE mark certified emissions or exemptions as required by the following standards:

This Information Technology Equipment (ITE) requires a CE mark on the manufacturer's label, which means that the device has been tested for the following instructions and standards: This device has met the European standard EN 55032 Class A EMC Directive 2014/30/EU and European standard EN 60950-1 Low Voltage Directive 2014/35/EU CE marking requirements.

General information for all users: The device generates, uses, and radiates radio frequency energy. If not installed and used in accordance with this manual, the equipment may interfere with radio and television communications. However, there is no guarantee that interference will not occur due to site-specific factors in any installation.

1. To meet emission and immunization requirements, users must comply with the following regulations:
    a. Connect the digital device to any computer using only the I/O cable provided.
    b. To ensure compliance, use only the manufacturer-approved power cord provided.
    c. Remind the user that changes or modifications to the device that are not expressly approved by the compliance responsible party may invalidate the user's authority to operate the device.

2. If the device appears to be interfering with radio or television reception or any other device.

Confirm as an emission source by turning the device off and on. If you determine that the device is causing the interference, try one or more of the following measures to correct the interference:

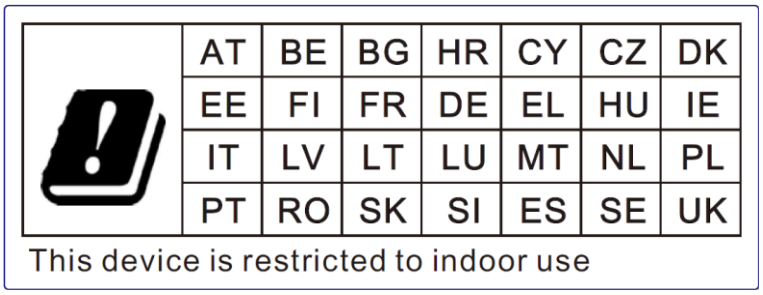
a. Move the digital device away from the affected receiver.
b. Reposition (rotate) the digital device relative to the affected receiver.
c. Relocate the affected receiver antenna.
d. Plug digital devices into different AC sockets so that digital devices and receivers are on different branch circuits.
e. Disconnect and remove any I/O cables that the device does not use. (Untired I/O cables are a potential source of high RF emission levels.)
f. Plug the digital device into the ground socket. Do not use the AC power adapter plug. (Removing or cutting the
g. power cord to ground may increase the RF emission level and may pose a deadly risk of electric shock to the user.)

If you need additional help, consult your dealer, manufacturer, or experienced radio or television technician.

Radio Equipment Instructions

Elo hereby declares that the type of radio device complies with the 2014/53/EU Directive. EU Declaration of Conformity is available at:www.elotouch.com

This equipment is for indoor use only.



Obtained Certification

This peripheral has been certified and marked as follows:

- CE
- FCC/IC

Explain the mark

In accordance with the requirements of SJ/T11364, electrical and electronic products should be marked with the following pollution control signs.
This product has an environmentally friendly life of 10 years. This product will not leak or mutate under the following operating conditions, and the use of this electronic product will not cause serious environmental pollution, personal injury or property damage.

Encourage and recommend that product packaging be recycled and reused in accordance with local laws.

Waste Electrical & Electronic Equipment Directive (WEEE)

Do not dispose of this product as household waste after it is scrapped. It should be recycled into the recycling plant.
Elo already has recycling bins in some parts of the world. For information on these activities, visit:www.elotouch.com/e-waste-recycling-program/

Chapter 7: Warranty Information

For warranty information, please visit http://support.elotouch.com/warranty/

www.elotouch.com

Visit our website for the latest
Product information
The instructions
Event preview
Press releases
Software-driven

For more information on the product range of Elo Touch solutions, visit our website www.elotouch.com or call your nearest office.

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