Thumbkeyboard Software User Manual

Software for AE-SMKD Series Keyboard

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Make Your Fingers More Usable

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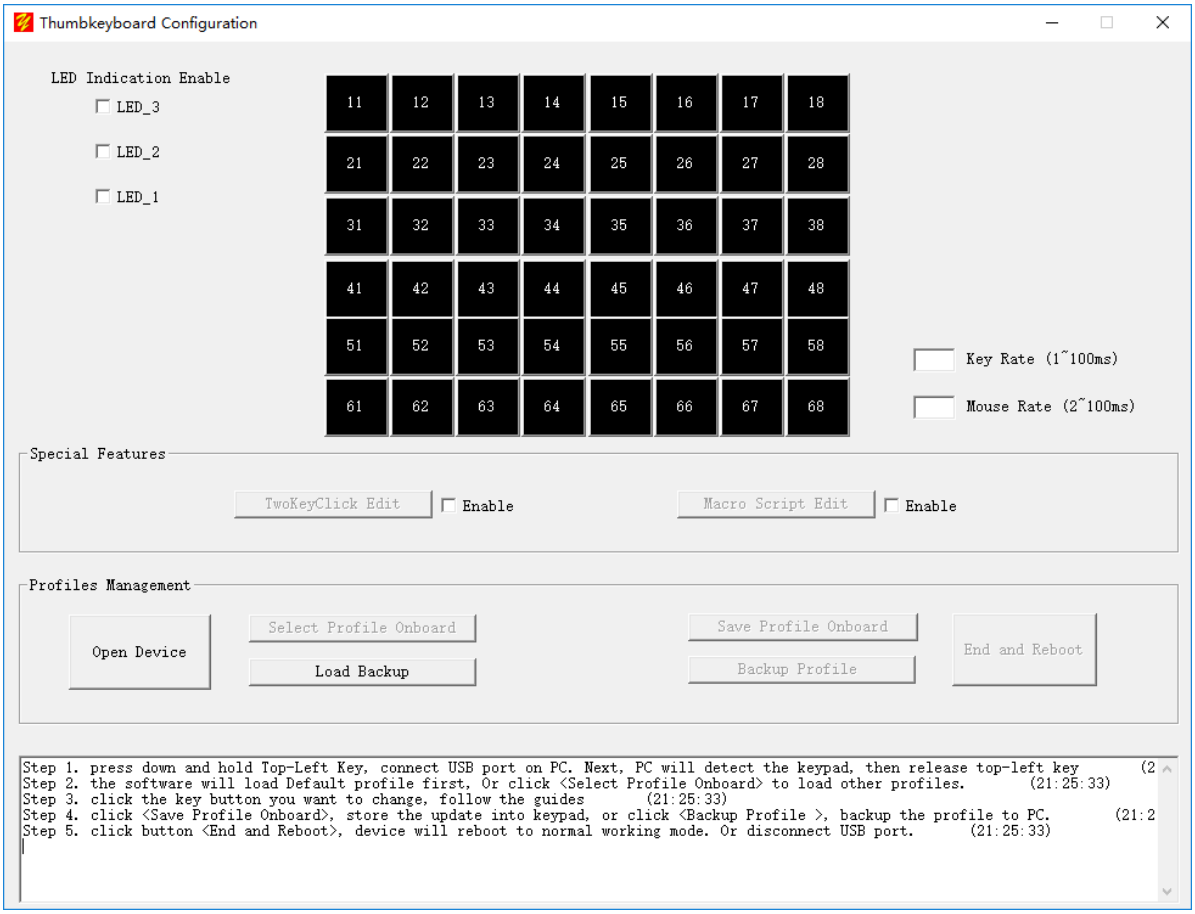
1. Quick start to program keypad

Step 1: visit product website and download latest software packet. unzip the packet and launchthe software. The software automatically scans hardware to find keypad.



Location ID, the first number is row, second number is column.

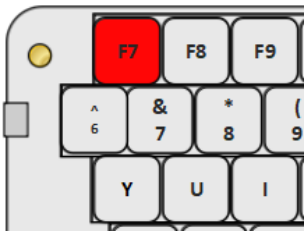
Key12 means the key locate at row 1, col 2.

Key62 means the key locate at row 6, col 2.

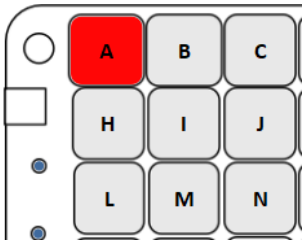
Step 2: Switch keypad to Configuration Mode.

Press and hold **top-left-key**, connect computer and keypad by USB cable. When LED Indication blinked, it means the device work into configuration mode, and user can program keypad.

Top-Left-Key (Left keypad)

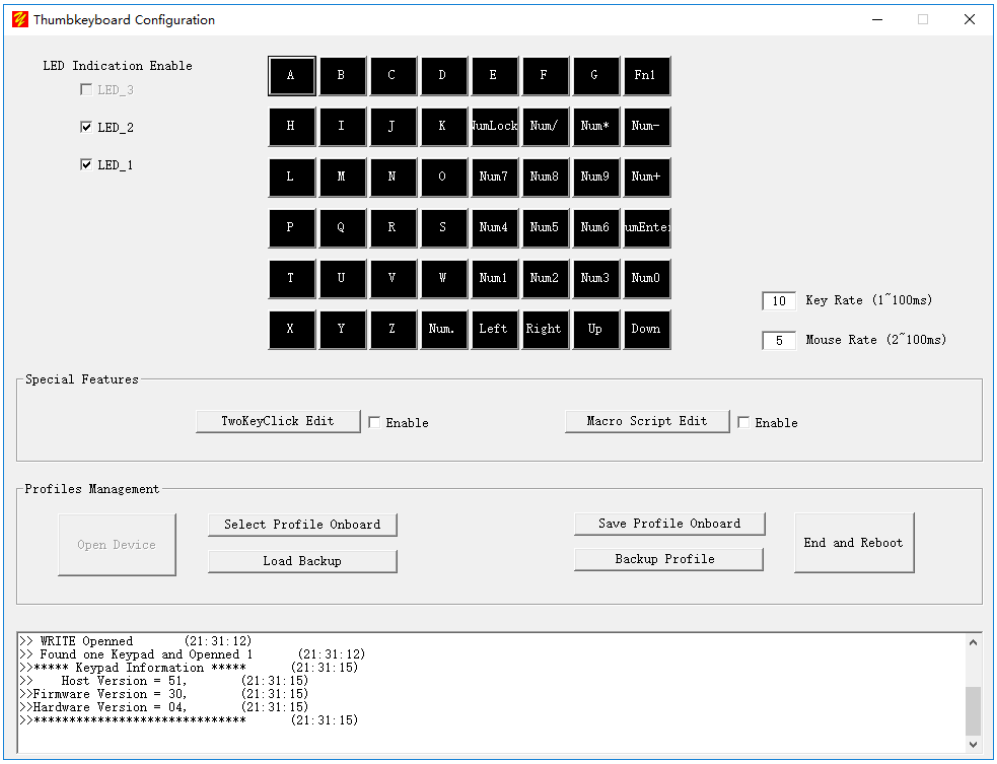


Top-Left-Key (Right keypad)

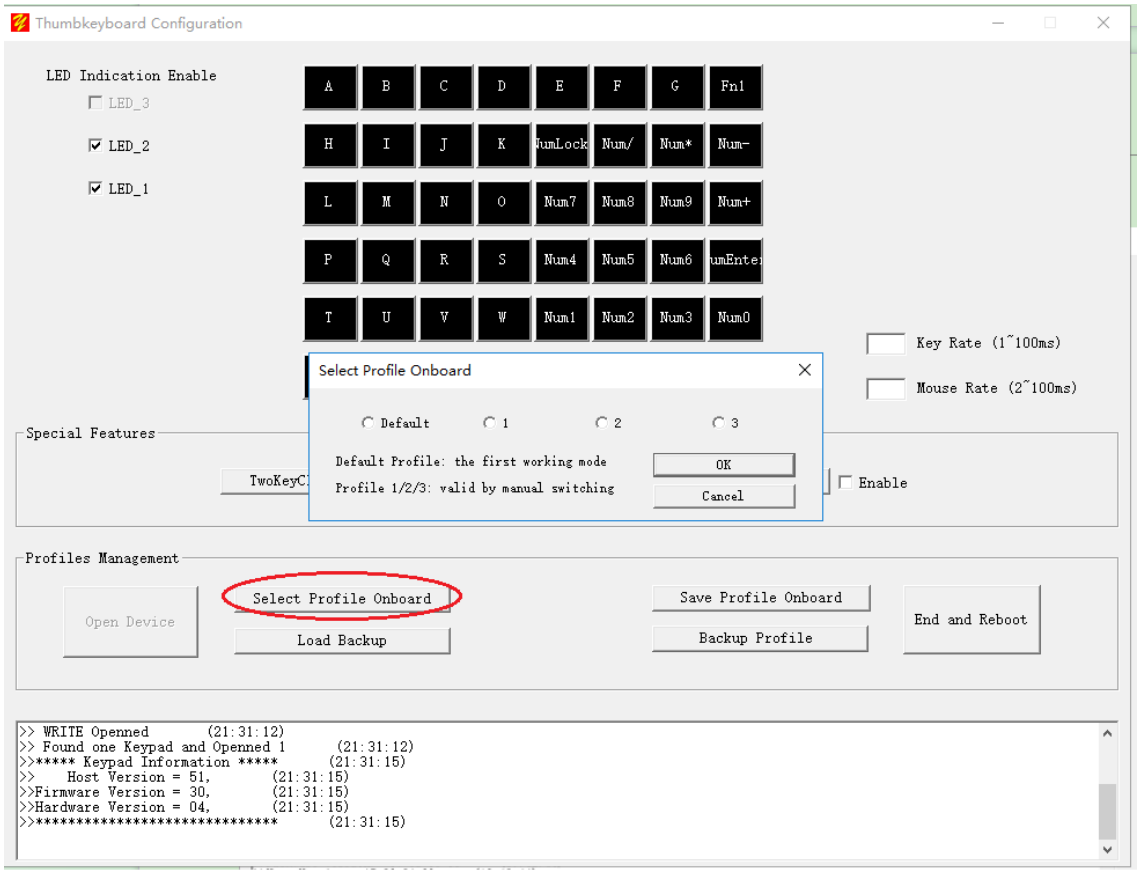


Top-Left-Key (Numpad)

Next, the software detected keypad, and loaded default profile automatically.

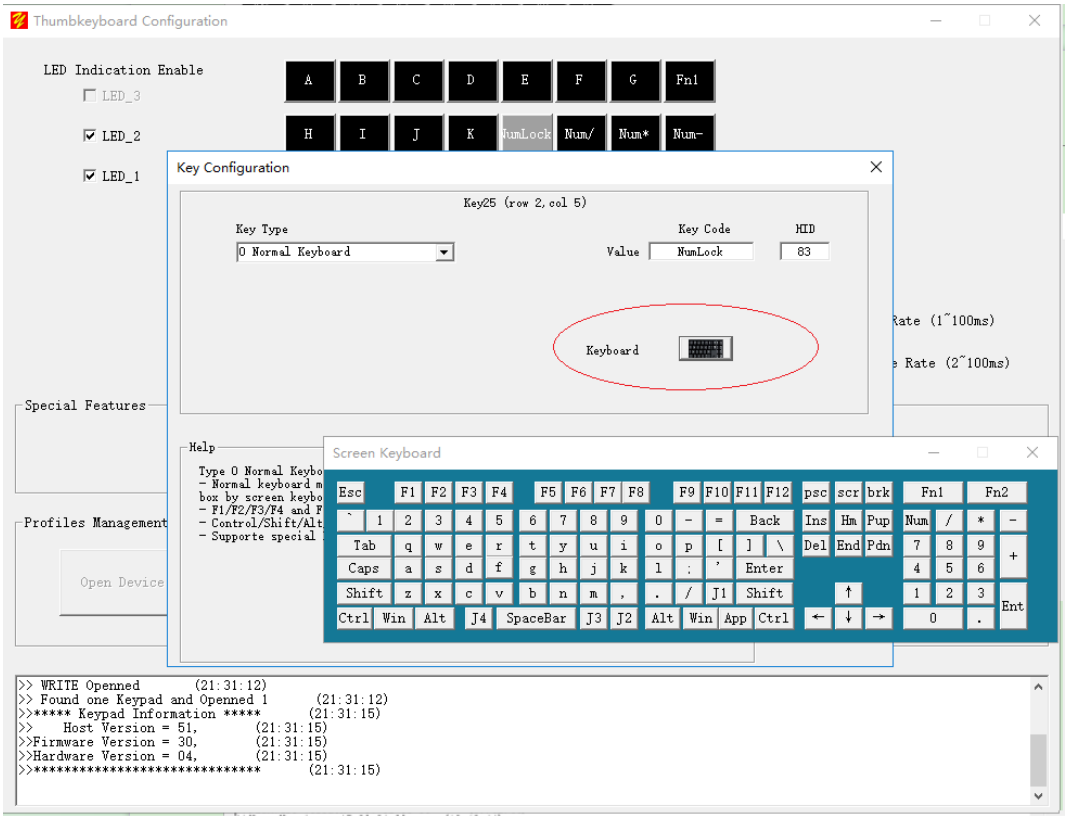


Step 3: Click <Select Profile Onboard>, select one profile ID which you want to change.



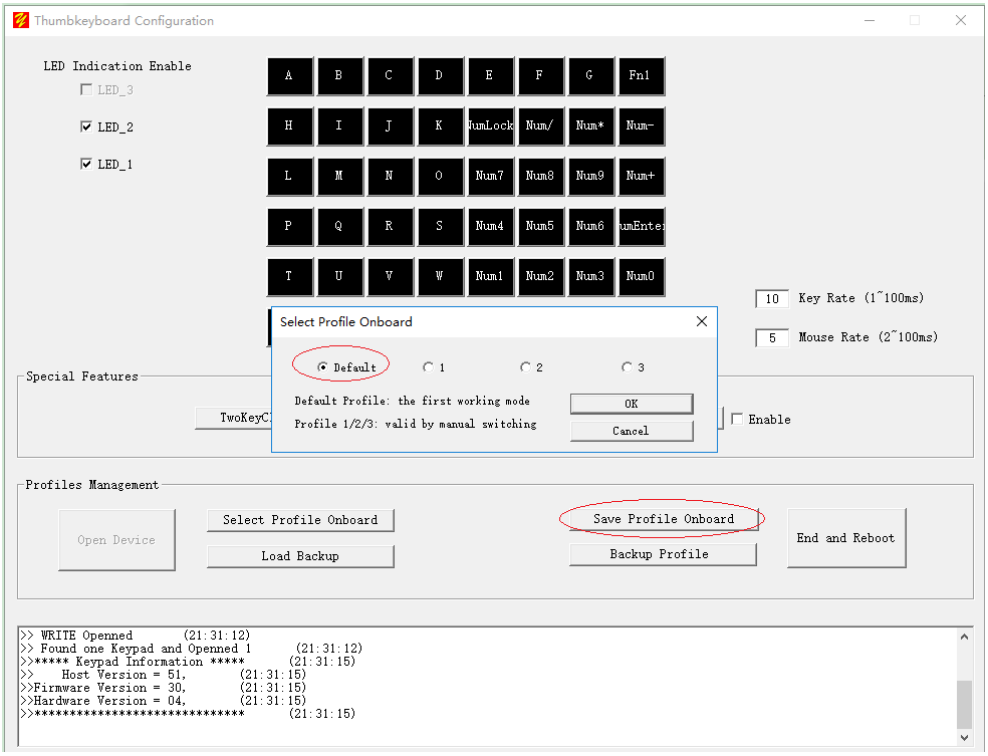
Or, Click <Load Backup> , load backup copy from computer.

Step 4:click one Key-button and change it following the guide.



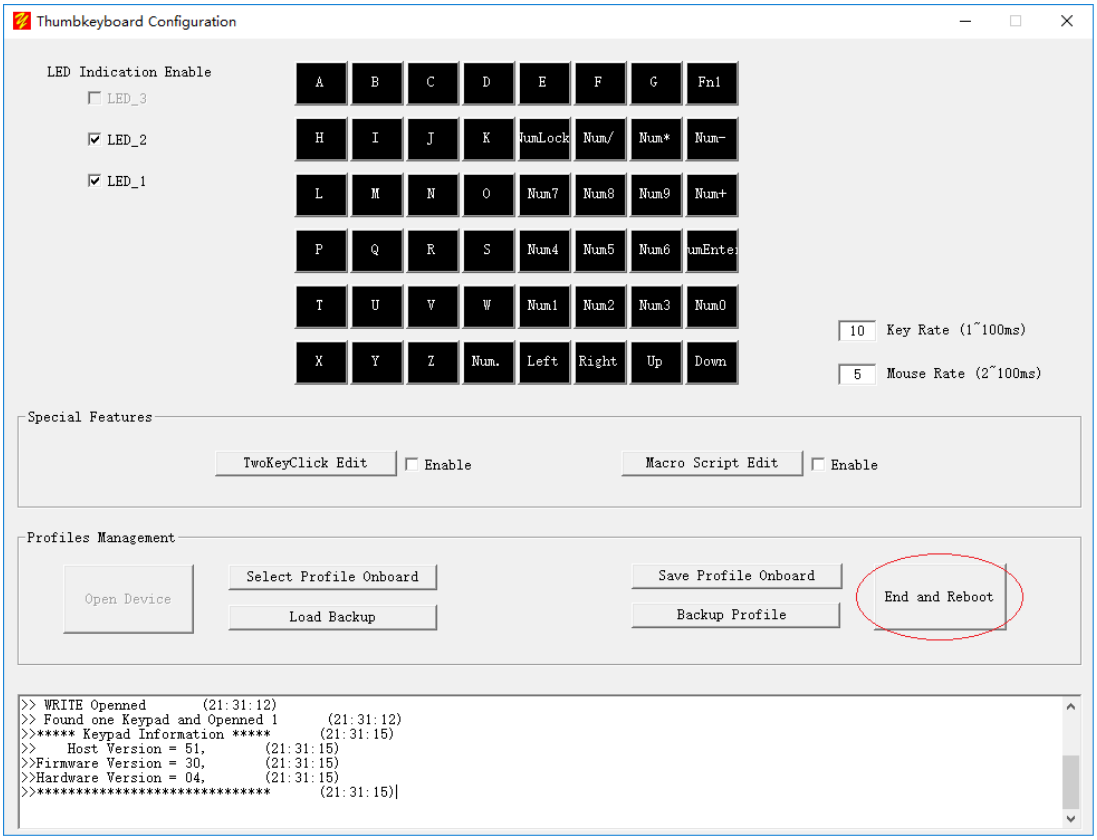
Notice: Click keyboard icon to activate Screen Keyboard. User can clickScreen Keyboard to select key code.

Step 5:click <Save Profile Onboard> to keep the change when user finished.



Or click <Backup Profile>keep it as copy.

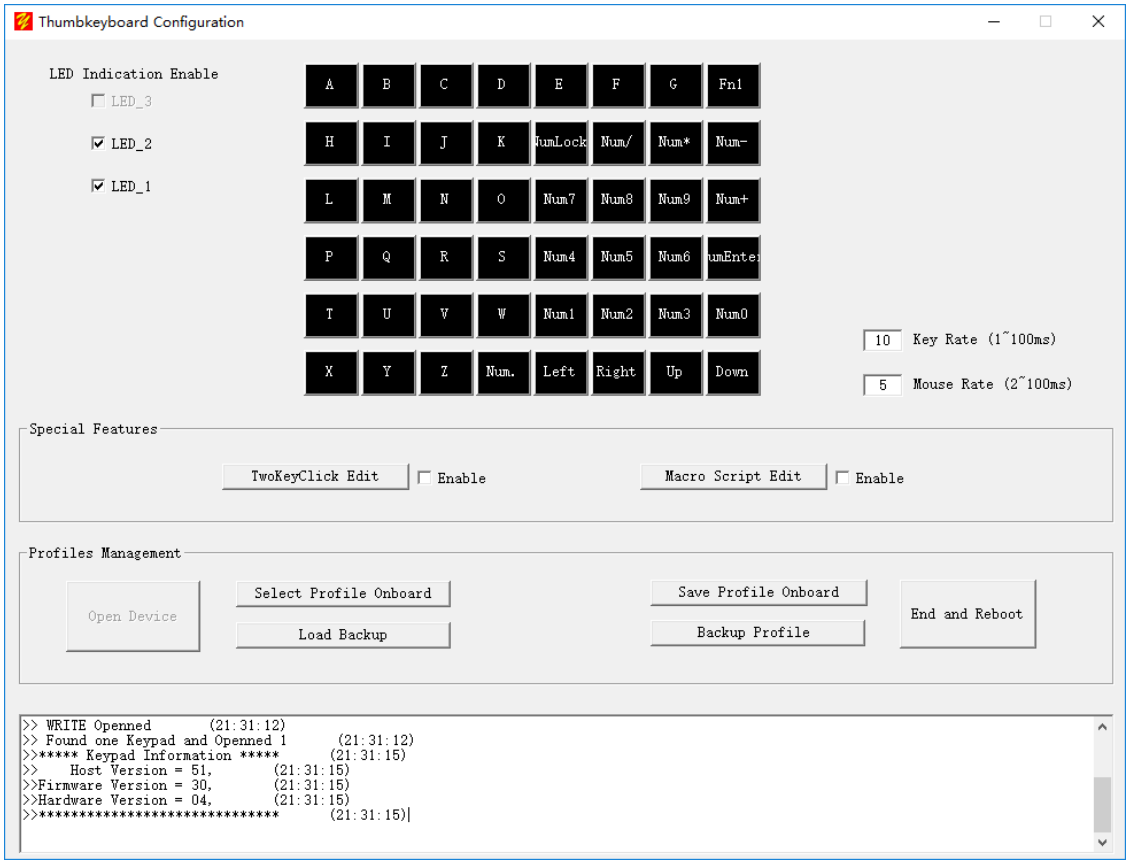
Step 6: click <End and Reboot> to end configuring and reboot the keypad.



At last, you can verify the change and swap the keycap to match new key map.

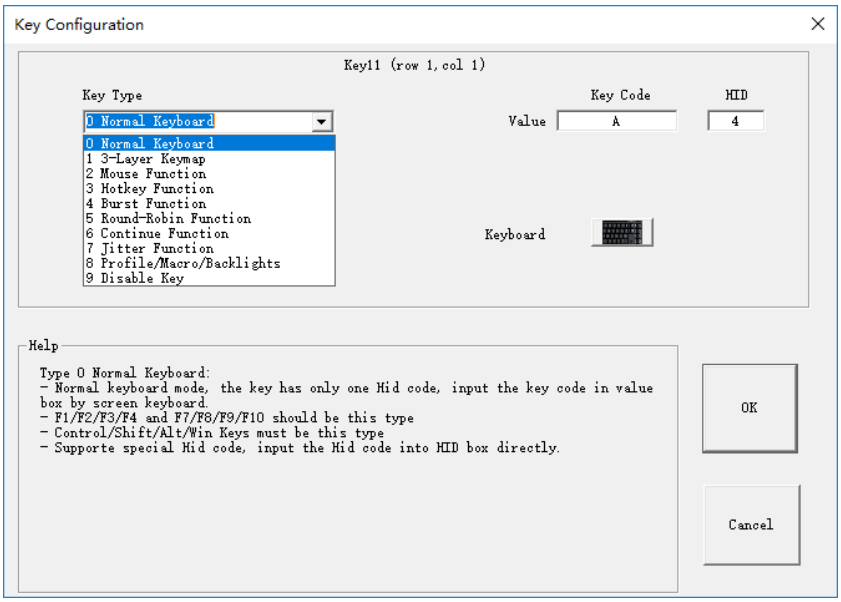
2.Key Types

Main Window includes 4 sections, Key-Map, Special Features, Profiles Management, and Message window.



Example

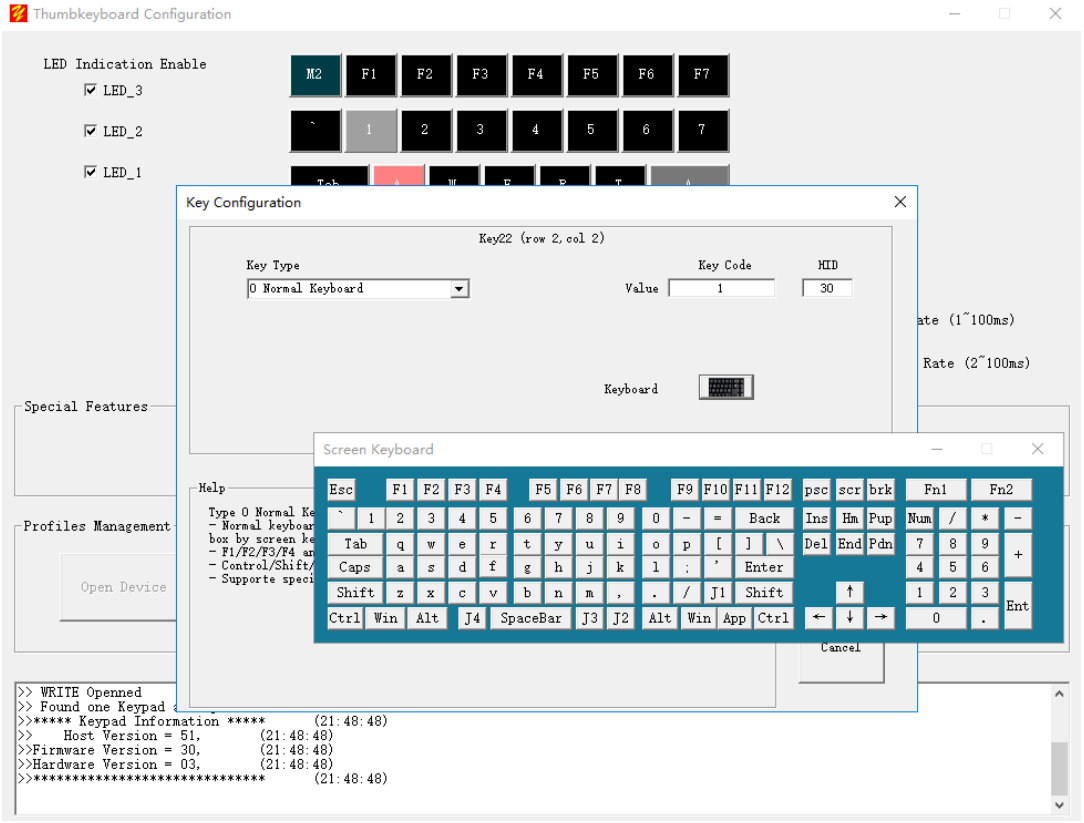
click ‘A’ icon,pop up window as below.



The device supports type 0~ type 9 for every key. Every type implement one dedicated function.

2.0 Normal Keyboard

The key act as normal US keyboard, click key and report one assigned char to computer. Enter the char in first value box by clicking Screen Keyboard. User can configure all keys to Normal type if he needn't extended features.



Notes

- F1/F2/F3/F4 and F7/F8/F9/F10 should be normal keyboard type.
- Ctrl/Shift/Alt/Win should be normal keyboard type.
- Don't care HID code, which is for professional user who knew HID specification.

HID (Human Interface Device) code:

Usage ID (Dec)	Usage ID (Hex)	Usage Name	Ref: Typical AT-101 Position	PC-AT	Mac	UNIX	Boot
0	00	Reserved (no event indicated)[9]	N/A	√	√	√	4/101/104
1	01	Keyboard ErrorRollOver[9]	N/A	√	√	√	4/101/104
2	02	Keyboard POSTFail[9]	N/A	√	√	√	4/101/104
3	03	Keyboard ErrorUndefined[9]	N/A	√	√	√	4/101/104
4	04	Keyboard a and A[4]	31	√	√	√	4/101/104
5	05	Keyboard b and B	50	√	√	√	4/101/104
6	06	Keyboard c and C[4]	48	√	√	√	4/101/104
7	07	Keyboard d and D	33	√	√	√	4/101/104
8	08	Keyboard e and E	19	√	√	√	4/101/104
9	09	Keyboard f and F	34	√	√	√	4/101/104

Figure. The HID code of A/B/C/D/E/F

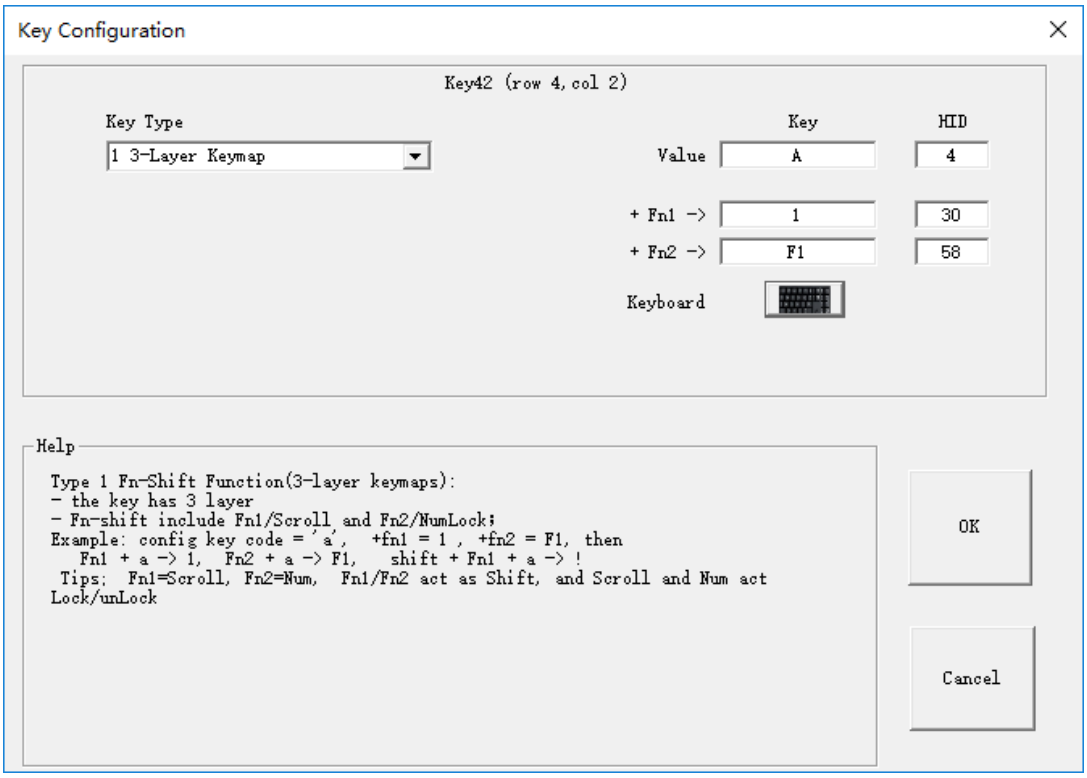
Usage ID (Dec)	Usage ID (Hex)	Usage Name	Ref: Typical AT-101 Position	PC-AT	Mac	UNIX	Boot
221	DD	Keypad Hexadecimal					
222-223	DE-DF	Reserved					
224	E0	Keyboard LeftControl	58	√	√	√	4/101/104
225	E1	Keyboard LeftShift	44	√	√	√	4/101/104
226	E2	Keyboard LeftAlt	60	√	√	√	4/101/104
227	E3	Keyboard Left GUI[10;23]	127	√	√	√	104
228	E4	Keyboard RightControl	64	√	√	√	101/104
229	E5	Keyboard RightShift	57	√	√	√	4/101/104
230	E6	Keyboard RightAlt	62	√	√	√	101/104
231	E7	Keyboard Right GUI[10;24]	128	√	√	√	104

Figure. The HID code of Ctrl/Shift/Alt/Windows (Left and Right)

2.13-Layer Keymaps Function

Every key has 3 layers which activated by Fn1/Fn2 key. Fn1/Fn2 areextended SHIFT key.

- The first layer is default, just like normal keyboard.
- The second layer is active once Fn1 pressed down, or Scroll Locked.
- The third layer is active once Fn2 pressed down, or Num Locked.



Example

A -> a ;layer-1

Fn1 + a -> 1 ;layer-2

Fn2 + a -> F1 ;layer-3

2.2 Mouse Function

This key-type can control mouse, mouse moving, button down/up. Support Left/Right/Middle buttons.

- Select left/middle/right button by Radio box.
- Coordinate X is horizontal moving unit rate, minus value means moving left, positive value means moving right.
- Coordinate Y is vertical moving unit rate, minus value means moving up, positive value means moving down.
- X/Y scope : -127~127 pixel

Formula:

Mouse_Moving_Rate mouse moving rate, the unit is pixel/second

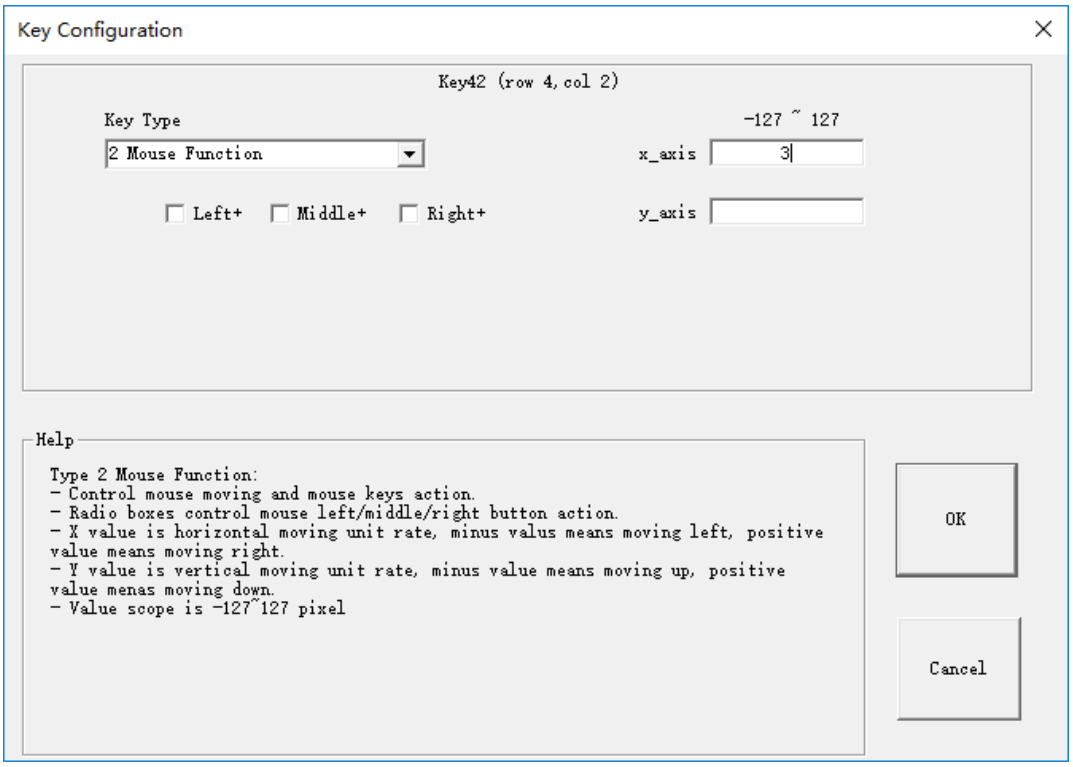
Mouse_Moving_Rate_X = mouse_report_rate * x_axis

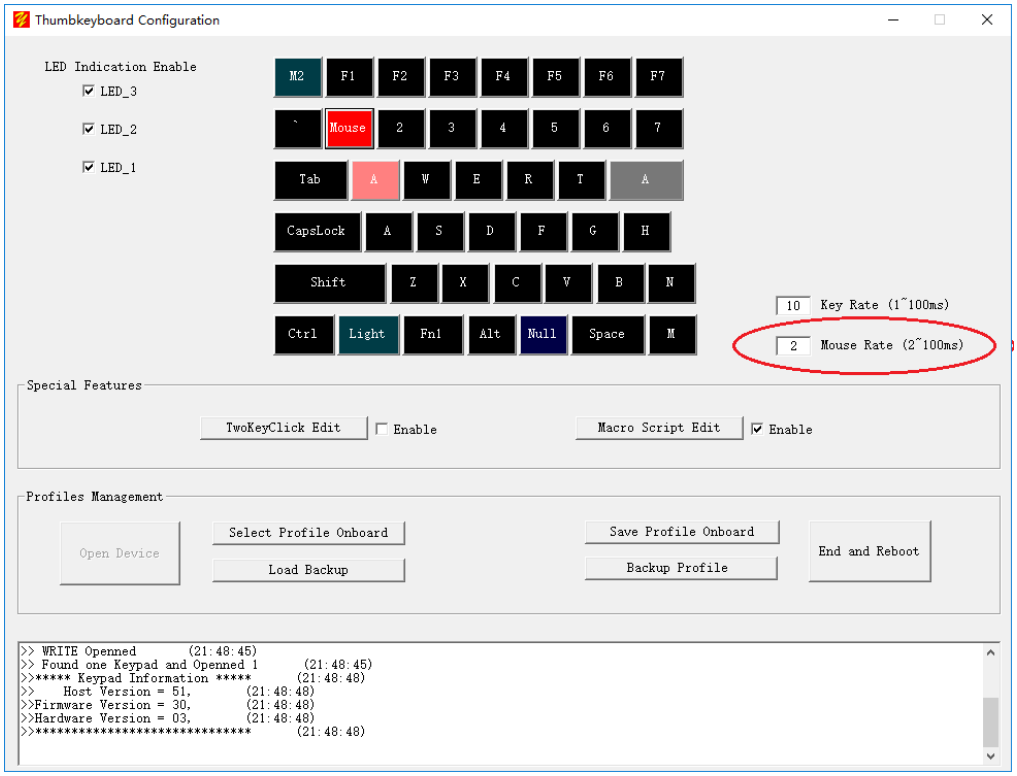
Mouse_Moving_Rate _Y= mouse_report_rate * y_axis

Mouse_Report_Rate the times mouse report to computer in one second.

Mouse_Report_Rate = 1000ms / mouse_rate

mouse_rate the interval mouse report to computer, the default value is 2ms





Example:

Mouse Rate = 2 ms ; interval, system default

x_axis = 3 pixel ;unit moving

mouse_report_rate = 1000ms / 2ms = 500 (report/second)

mouse_moving_rate = mouse_report_rate*x_axis = 500 * 3 = 1500 pixel/second.

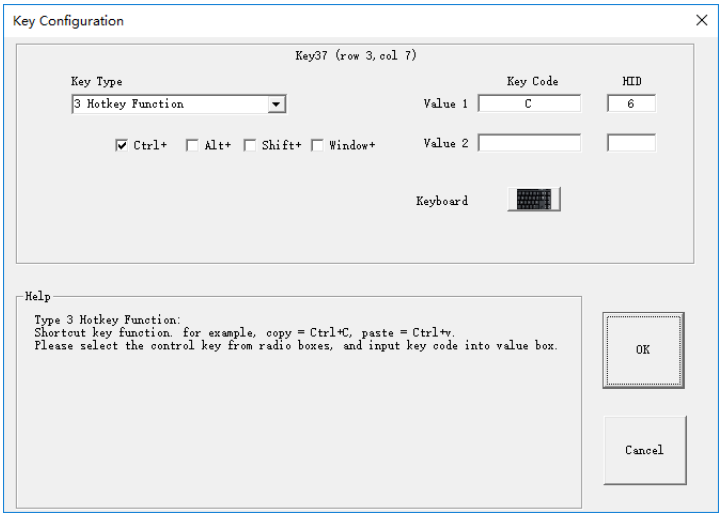
Pressing down the key 1 second, the mouse move 1500 pixel.

2.3 Hotkey Function

This type support hotkey function. For example, one click = Ctrl+C, shift+9+0, etc.

Select the function keys, ctrl/alt/shift/window, from Combination block.

Enter the char at Value1 and Value2 by clicking Screen Keyboard.



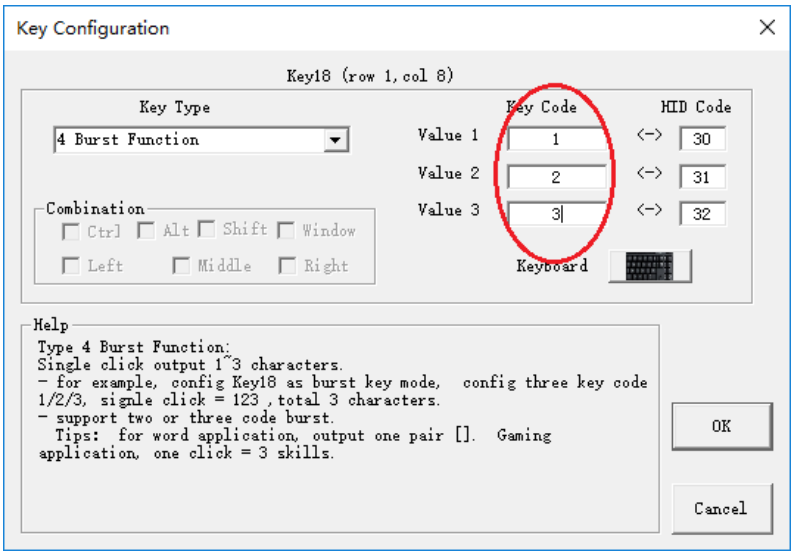
Example setting Key37 = Ctrl + C as above

2.4 Burst Function

One click = 1~ 3 characters.

For example

Set Key18= Burst key, enter 3 values, 1/2/3



Example Setting Key18 = 123

Typing one word click = [] ,

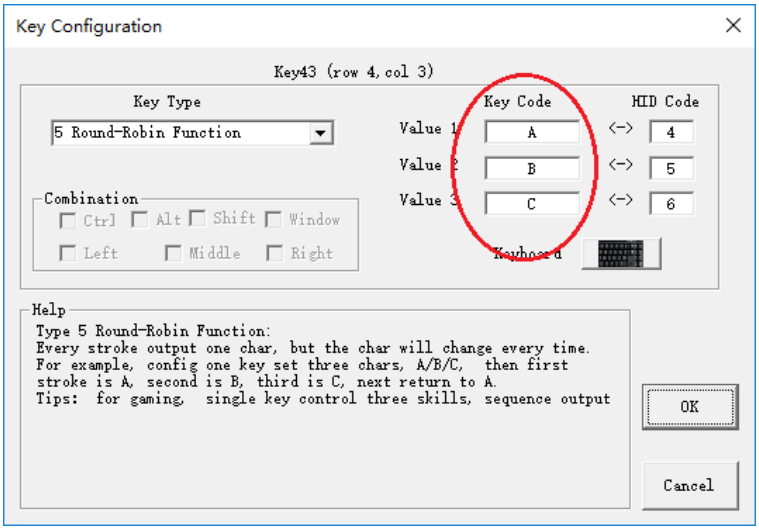
CAD command click = LA

Gaming Player click = 3 skills.

2.5 Round-Robin Function

It's one feature for gaming application. One key can manage 3 skills.

Every stroke output one char, but the char changedevery time.



Example

Key43 = ABC

Stroke times, output sequence is abcabcab....

2.6 Continue Function

It's one feature for gaming application to control the game role to keep moving. First click start moving, second click stop.

Example:

W = moving forward S = backward A = left D = right

The normal action is , pressing down the key to start moving , and stop once the key released.

Next, setting WASD keys type to Continue, stop condition = itself.

The behavior changed as below.

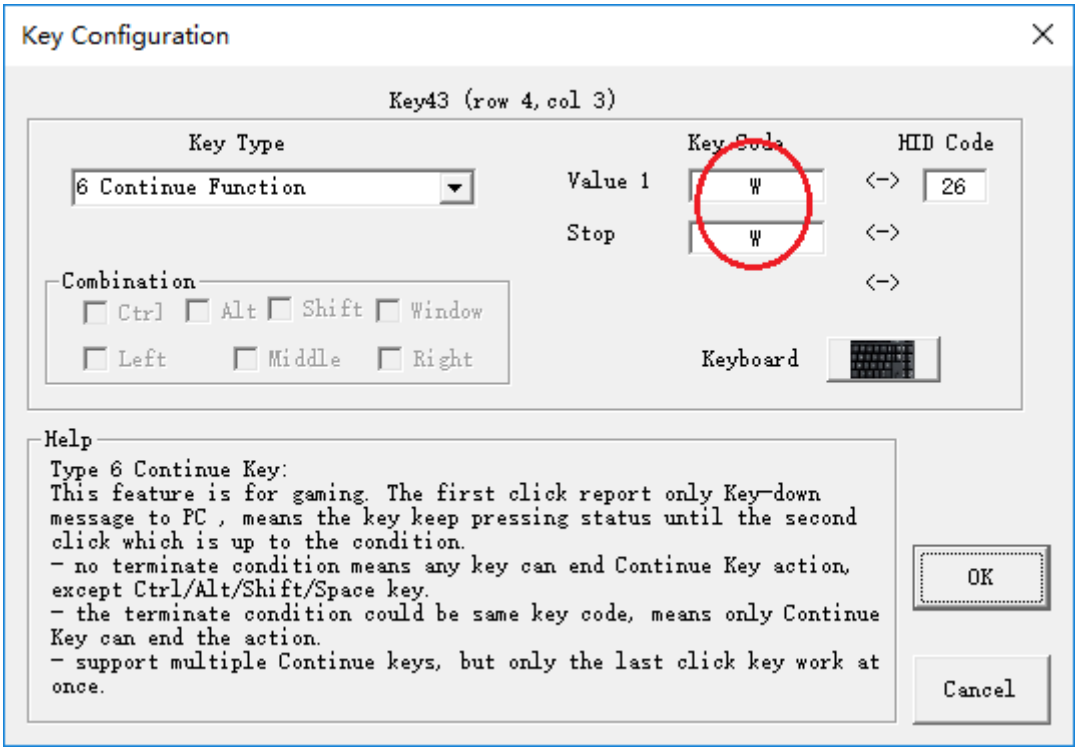
Press W and release, the role keep moving forward.

Press A and release, the role keep moving left .

Press S and release, the role keep moving backward .

Press S and release again, the role stopped.

This feature needn't game player press down the key all time, which can free player's finger during moving.



Stop Condition:

= itself, means only the type of continue-key can stop the moving.

= others, means any key can stop the moving.

2.7 Jitter Function

It's one feature for gaming application.

This feature can simulate quick and frequency CLICK,over 20 times in one second.

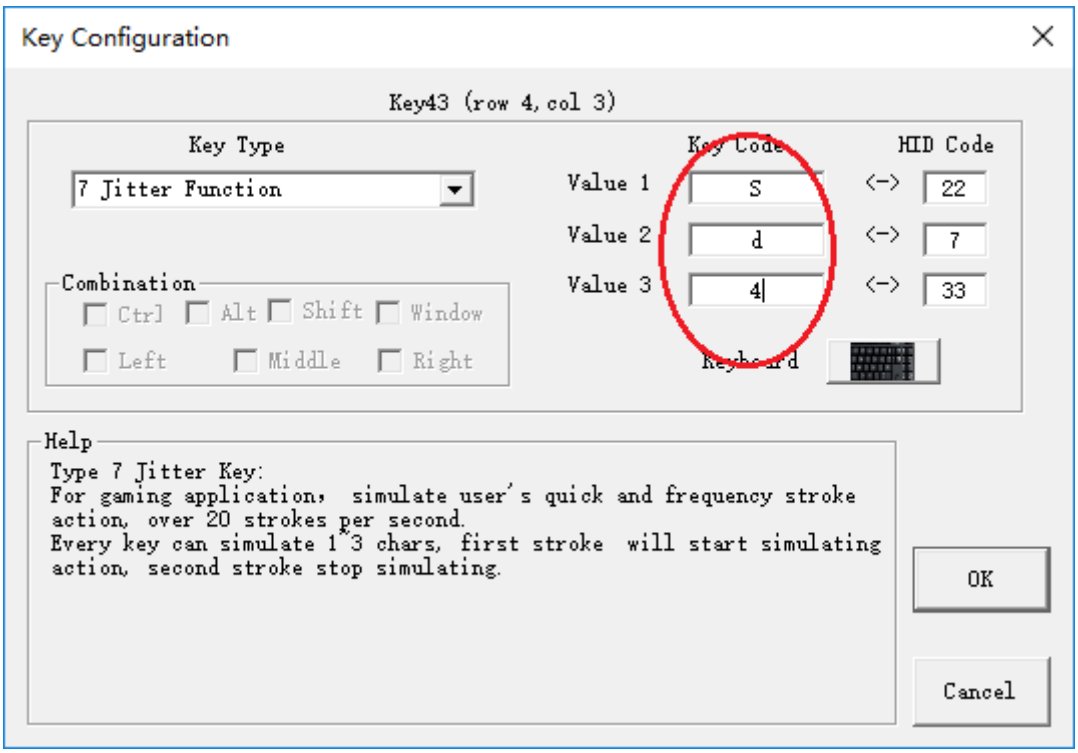
Every key can simulate 1~3 chars, first click start simulating , second click stop it.

For Example:

One game, the chars, S D 4, are three skills.

Setting one key = Jitter function, the values = SD4

Pressing down start the simulating, sd4sd4sd4sd....., until release the key.



2.8 Special Functions

Assign one key to implement dedicated feature, the features as below.

Features:

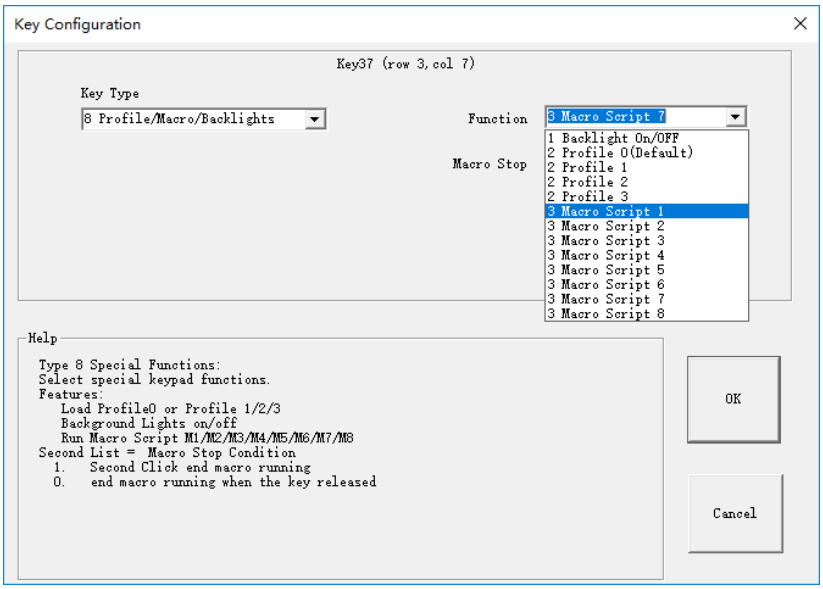
Backlights on/off

Switch to default profile

Switch toprofile 1/2/3

MacroScript M1/M2/M3/M4

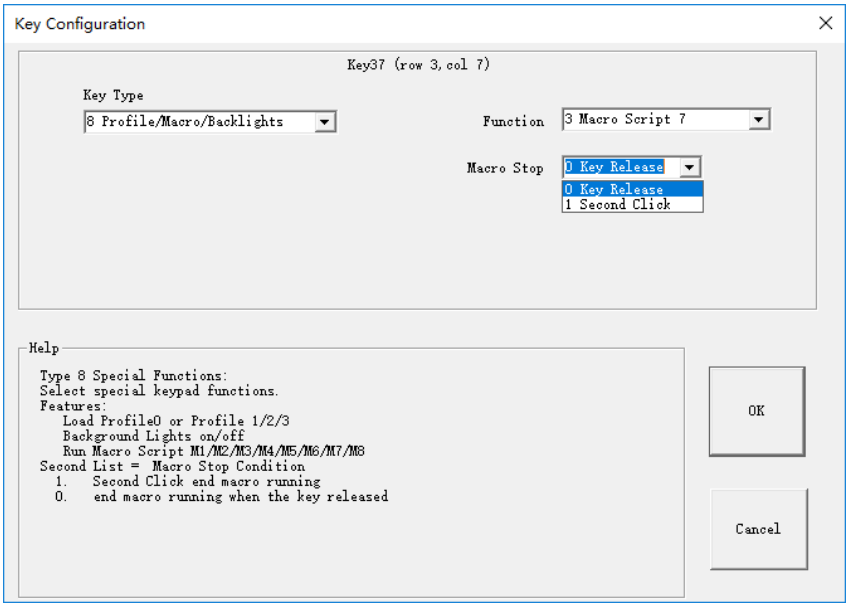
MacroScript M5/M6/M7/M8



End Condition: Macro Stop condition

It's only for Programmable Macrofeature, how to stop Macro running.

- Second click stoprunning, or end by END command in script.
- Stop running once assigned key released.



Example

Feature, Macro Script 1

End = 0, stop running once assigned key released.

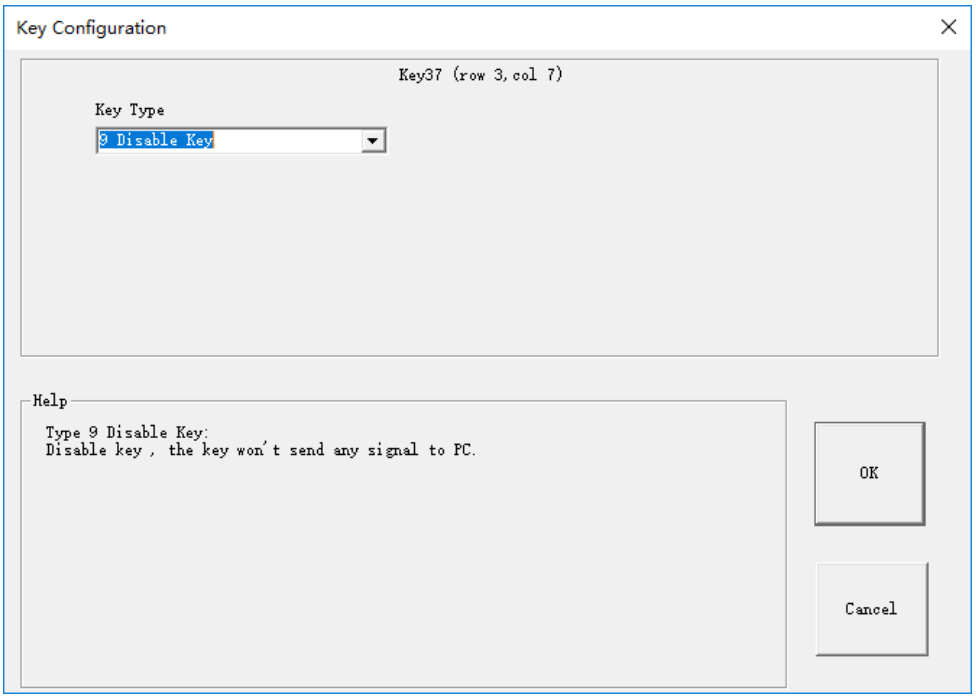
Pressing down Key37 start Macro Script 1;

releasing Key37 stop Macro Scrip 1.

2.9 Disable Key

This type can disable key, pressing key won't report anything to computer.

For example, disable WindowKey in gaming.



3. Application Examples

3.1 How to switch Profiles

Profile is key-map. Normal keyboard is fixed key-map which user can't change. As to programmable keyboard, there's 4 profiles in device, named Default Profiles, Profile 1/2/3. User can assign every key.

Default Profile is the profile for device initialization , user uses this key-map normally.

Profile 1/2/3are special key-maps for special applications, such as software coding/Gaming/Drawing, or backup of Default profile. These profiles need manual switching to work. There's two ways to switch profile, one is by default command, another is dedicated Mode key.

3.1.1 Default Command

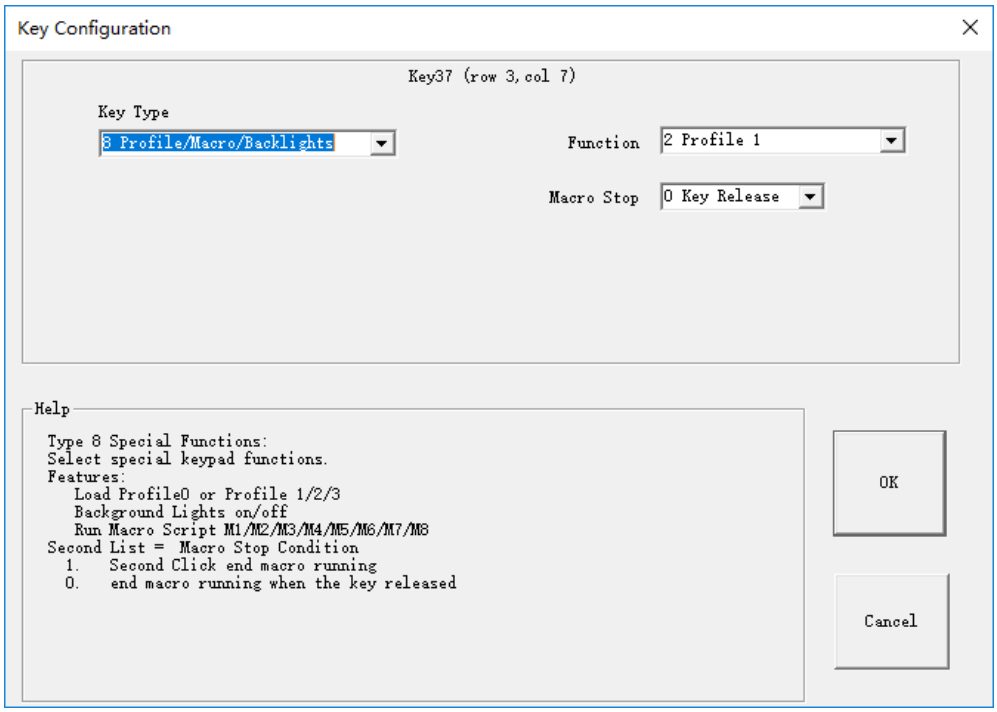
The device supports dedicated commands to switch profiles.

Fn1 + F1: default profile (Left keypad)	Fn1 + F7: default profile (right keypad)
Fn1 + F2: profile 1 Fn1 + F8: profile 1	
Fn1 + F3: profile 2	Fn1 + F9: profile 2
Fn1 + F4: profile 3	Fn1 + F10: profile 3

Notes: user can redefine a Fn1 onboard if keypad hasn't one by default.

3.1.2 Mode-Key (recommend)

User can assign dedicated Mode key to switch profile. Key Type 8 supports this feature.



For example:

Assigned Key37 as one Mode key, configure key37 different value in all 4 profiles.

Default Profile: Key37 = switch to Profile 1;

Profile 1: Key37 = switch to Profile 2;

Profile 2: Key37 = switch to Profile 3;

Profile 3: Key37 = switch to Default profile;

Initialized device, first key-map is Default profile.

First click Key37 switch to Profile 1;

Second click Key37 switch to Profile 2;

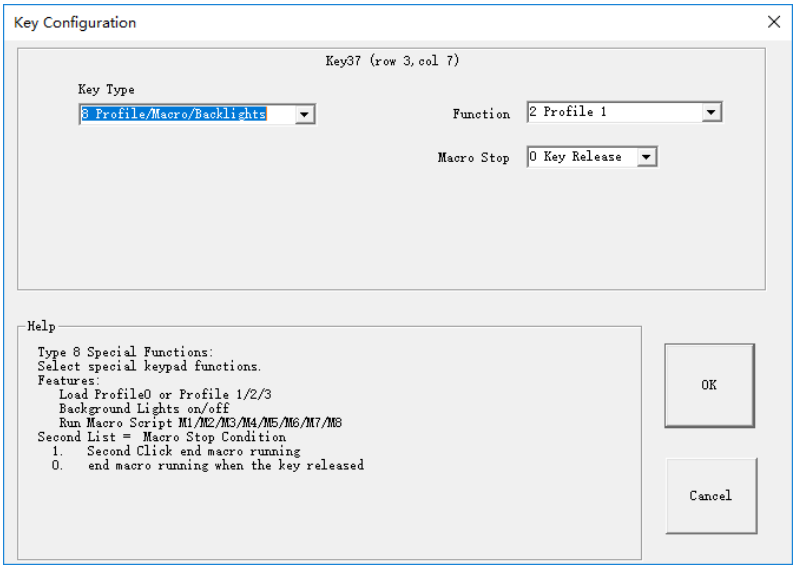
Third click Keyl37 switch to Profile 3;

Fourth click Key37 switch to Default Profile.

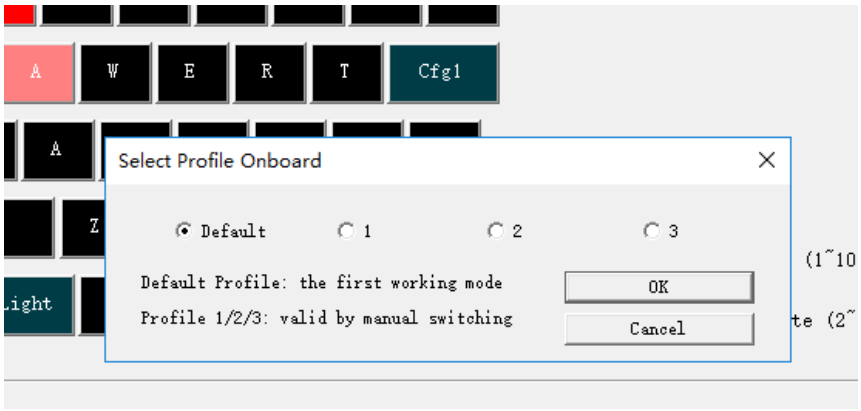
It is a loop switching among 4 profiles with only one key.

The below is how to configure 4 profiles.

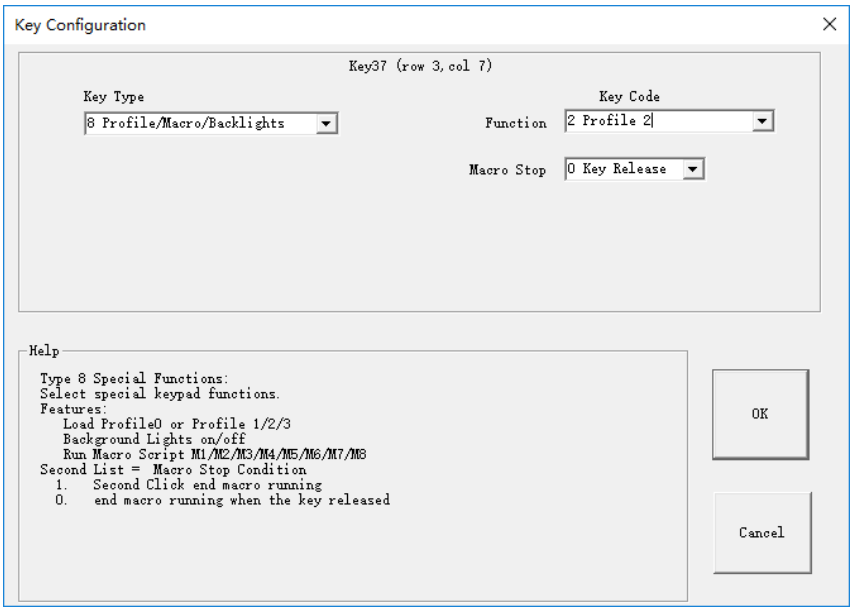
Step 1 : Default Profile: Key37 = switch to Profile 1



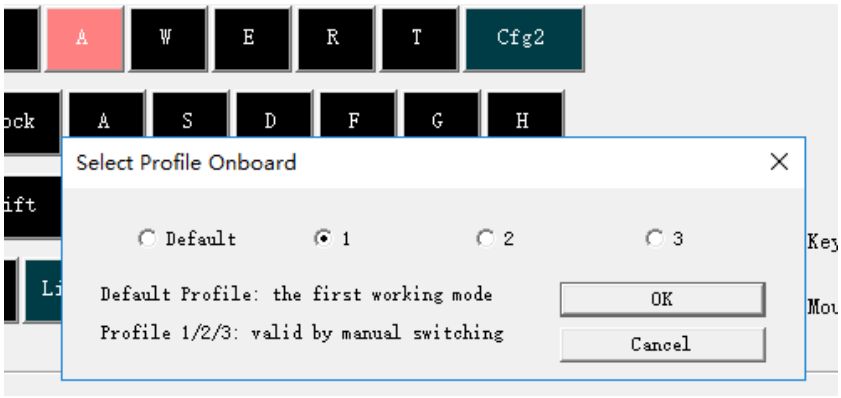
Save to default profile.



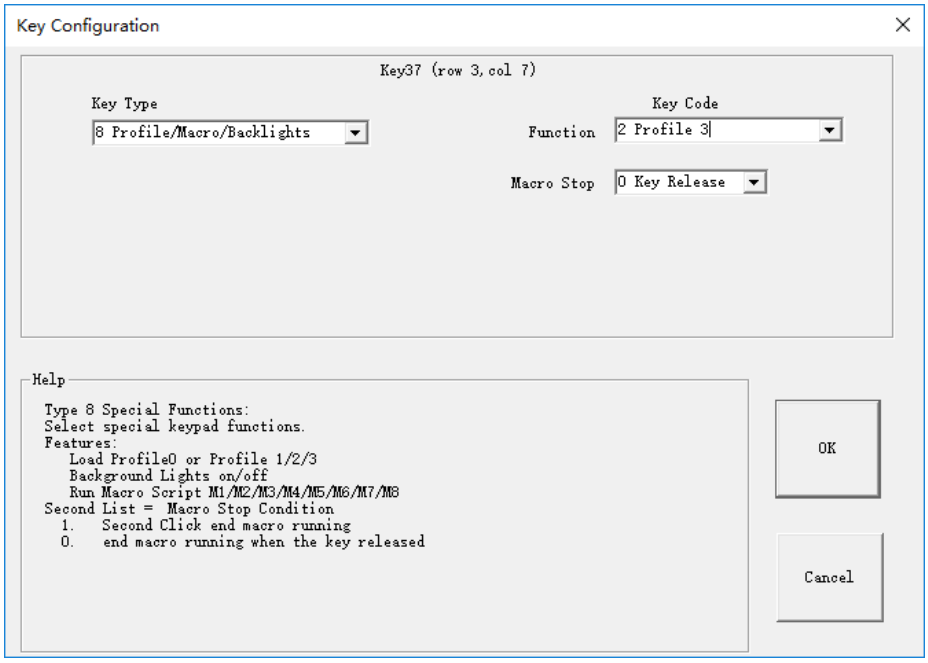
Step 2: Profile 1: Key37 = switch to Profile 2;



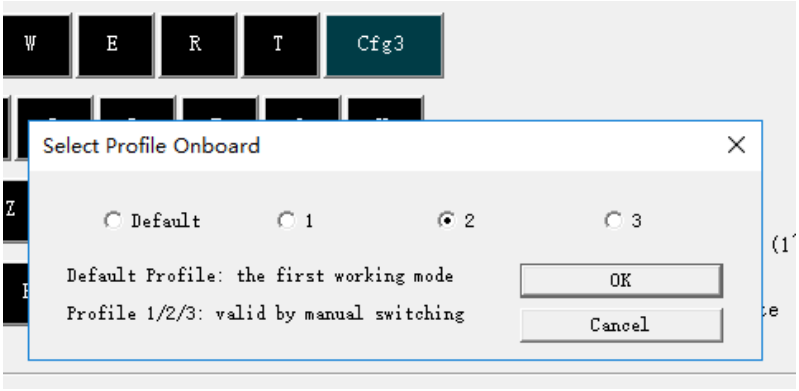
Save to Profile 1



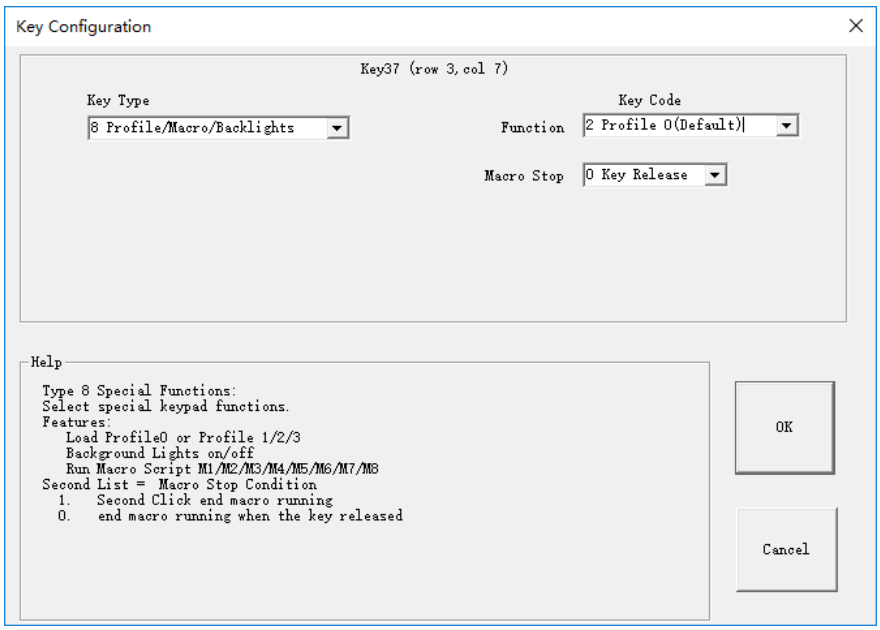
Step 3: Profile 2: Key37 = switch to Profile 3;



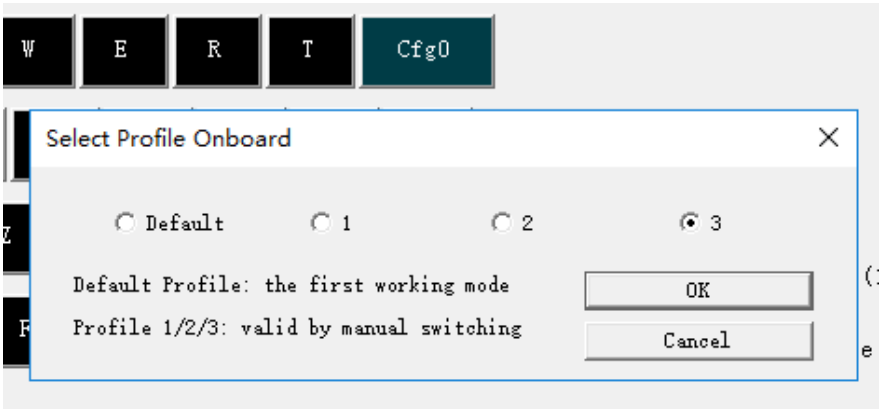
Save to Profile 2



Step 4: Profile 3: Key37 = switch to Default profile;



Save to Profile 3



3.2 3-Layer and Fn1/ Fn2-Shift

Every key supports 3 layer, normal layer, Fn1 Layer and Fn2 layer. Fn1/Fn2 are new SHIFT keys which activate layer-2 and layer-3.

Example: create Edit keys activated by Fn1, create Num-pad activated by Fn2.

Fn1-Shift: Page Up/Home/Up/End/Backspace
Page Down/Left/Down/Right

Fn2-Shift: Num Pad

Notes:

Fn1 = Scroll, Fn1 act as Shift Scroll supports Lock/unlock mode.

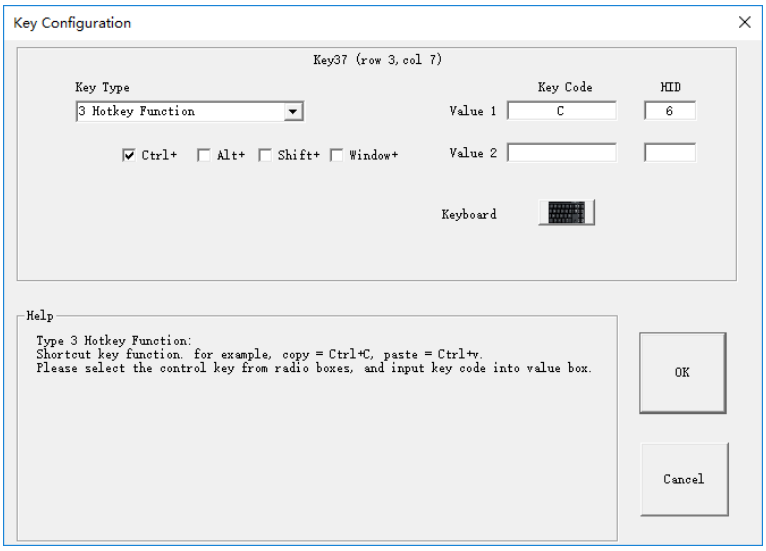
Fn2 = Num, Fn2 act as Shift, Num supports Lock/unlock mode.

3.3 Hotkey Tool

User can create one shortcut key tool based keypad. There's two ways to define shortcut key, one is Shortcut function, another is TwoKeyClick function.

3.3.1 Hotkey Function

Every key supports shortcut function, and all profiles support it. One keypad supports 43(Key) x 4 (profiles) = 172 shortcut key definition.



Example: Key37 = Ctrl+C (copy)

3.3.2 TwoKeyClick Function.

TwoKeyClick is one multiple shift function. Pressing two keys, the keypad will report 1~6 chars to PC, max 6 chars, or 5 chars + shift/ctrl/alt/win..

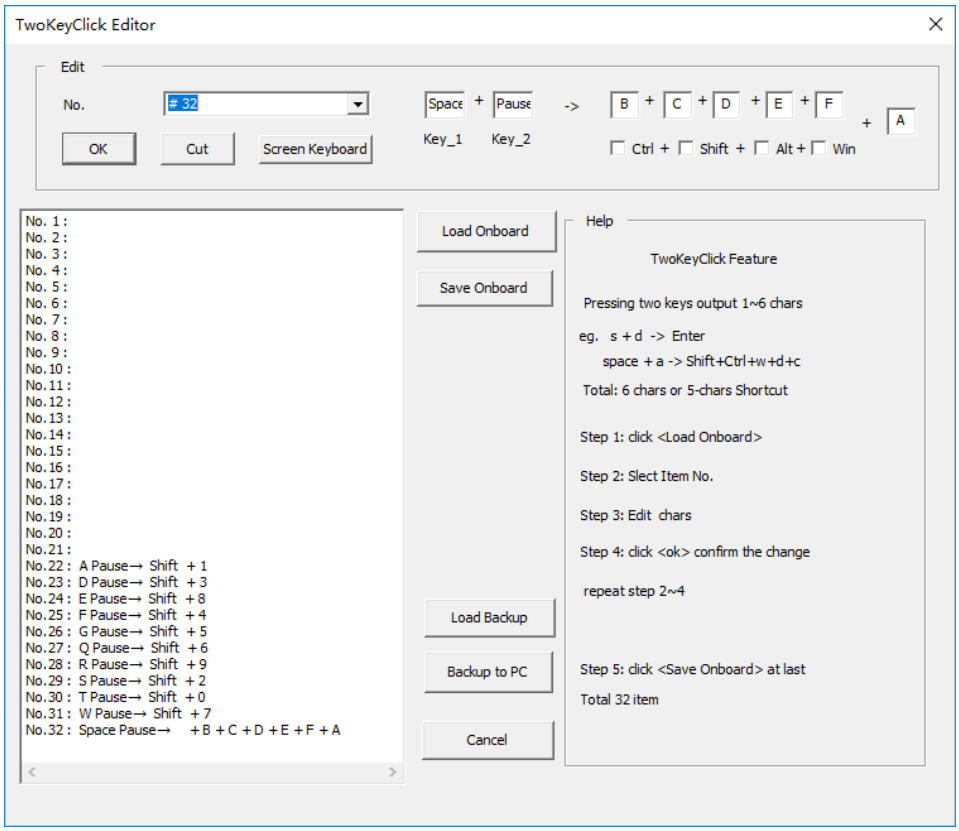
Example:

s + d -> Enter

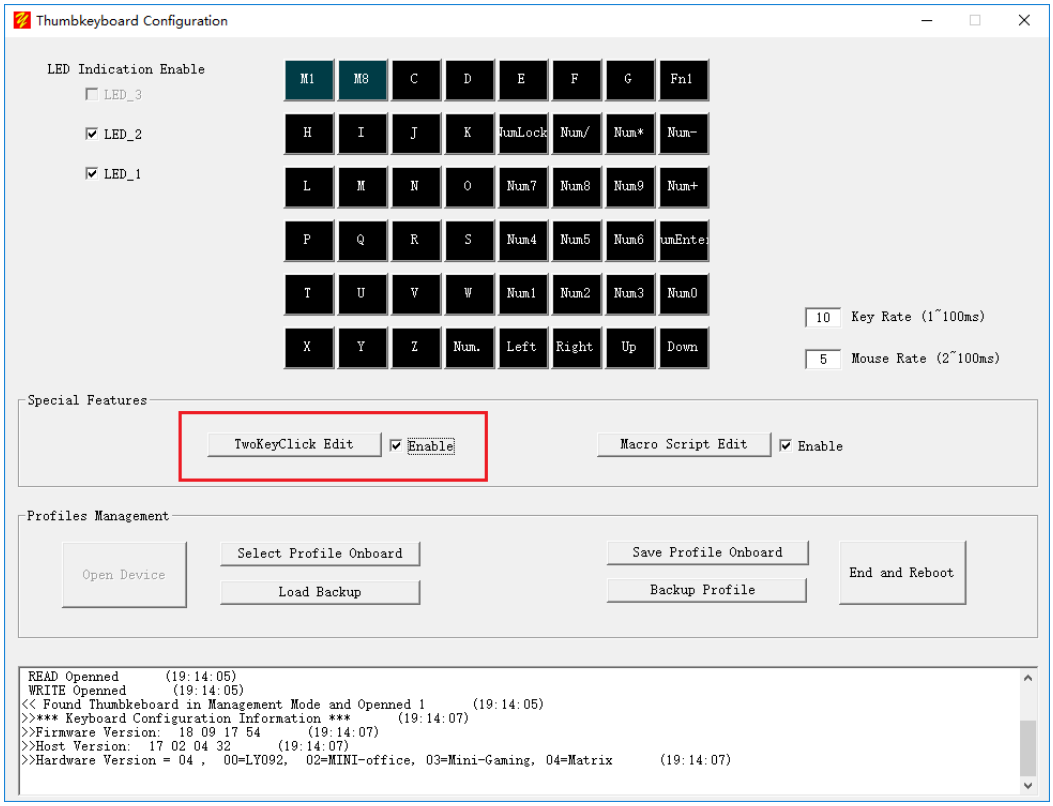
Pause + a -> shift +1

Pause + s -> shift + 2

Space + f -> Esc



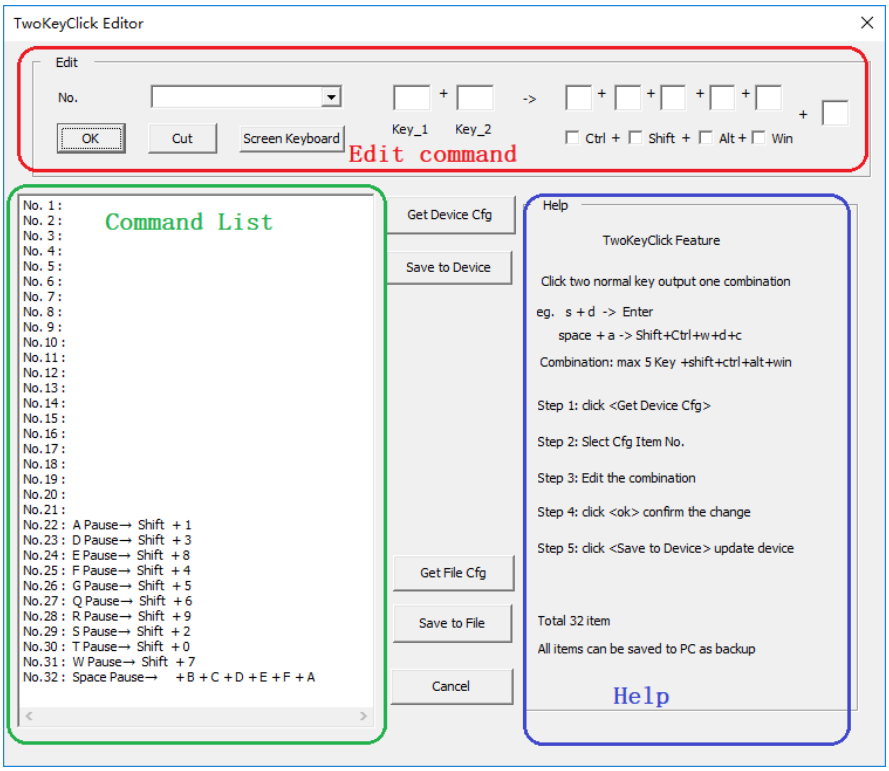
Step 1: Enable Two-Key-Click feature



Notes: Every profile has one on-off to enable/disable TwoKeyClick.

Step 2: Got the configuration in device

Click the button <TwoKeyClick Edit> will pop up the window as below, software will load the configuration from the device.



Step 3: Edit one command

Select the number of command and edit it . Click <ok> can finish it.

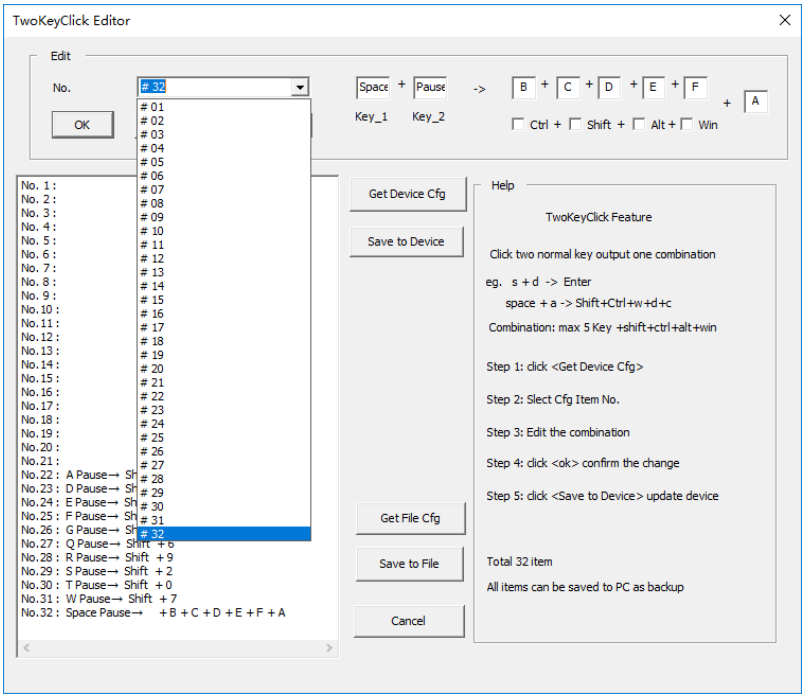
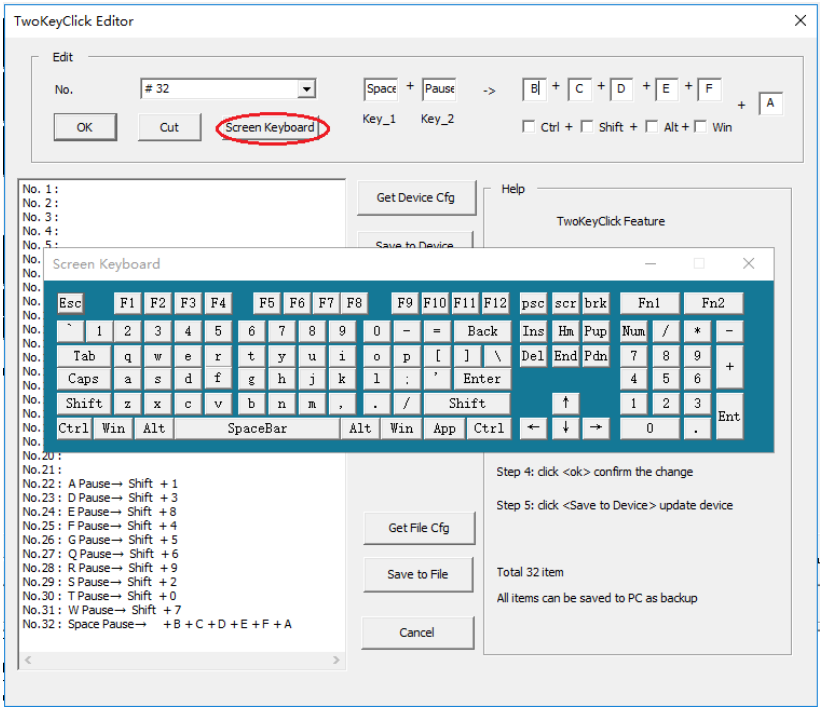


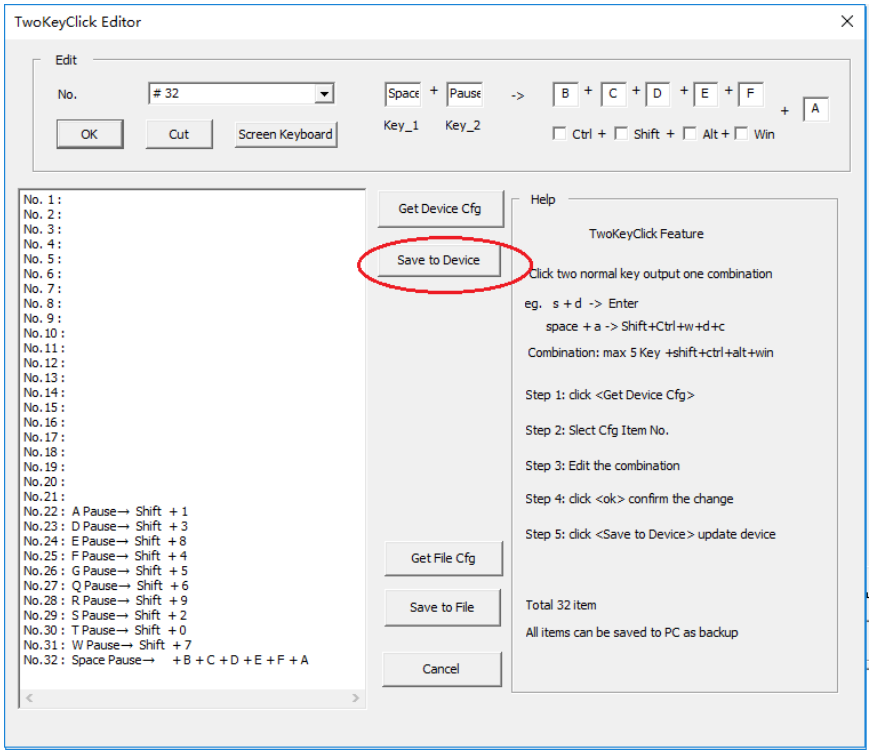
Figure. Select No.32



Input the char by Screen Keyboard

Step 4: Finish the configuration and save to device

Click <Save to Device> save all configuration to device.



Step 5: Verify the configuration

Close Editor windows, and click <End and Reboot>.

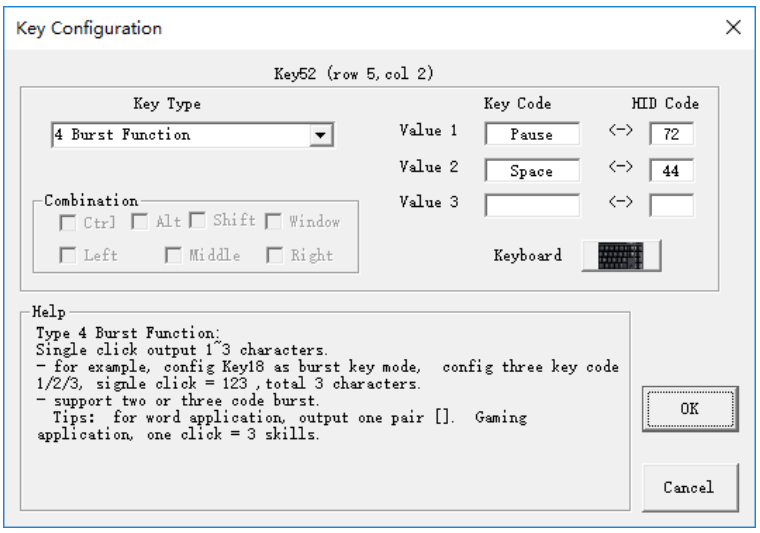
Verify all commands.

One key trigger TwoKeyClick command

One key also can trigger TwoKeyClick command as below. Define one key as Burst-Key, one click output two char.

Example:

Define Key52 as Burst-function which can trigger the command No.32.



3.4 ProgrammableMacro

Keypad supports total 8 Macro Scripts, named M1/M2/M3/M4 and M5/M6/M7/M8. Every Macro script supports 32 commands.

Example:

```
01#   Press    Shift+H    + 40 (ms)      ; press shift + h, and delay 40ms
02#   Press    E    + 40 (ms)            ; press e, and delay 40ms
03#   Press    L    + 40 (ms)            ; press l, and delay 40ms
04#   Press    P    + 40 (ms)            ; press p, and delay 40ms
05#   Release       + 40 (ms)            ; release p, and delay 40ms
06#   End        + 40 (ms)               ; the end, free all key
```

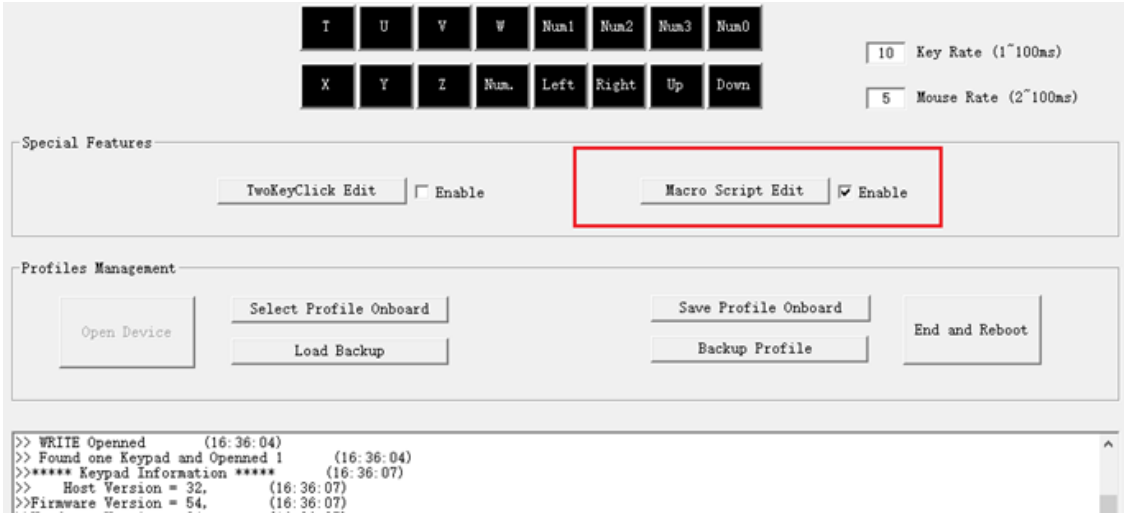
This macro will output one word, Help.

3.4.1 Programmable Macro Command

Command	Description
Press	One key down, and hold some time. Eg. Press shift+h +40ms ;
Release	One key up, and delay some time Eg. Release +40ms
Delay	Delay some time, 1ms ~ 63999ms Eg. Delay 2000ms
Goto	Jump to one instruction and running, scope 0~31 Eg. Goto 0 ; jump to the first instruction of Delay-Macro
Keydown	One button down, and delay some time. If the button was mouse key, Keydown command can control mouse moving or click. Eg. Keydown key26 +2ms; the button(row 2,col 6) press down
Keyup	One button up , and delay some time Eg. Keyup key26 +2ms; the button(row 2,col 6) release
End	End macro, and release all key and button Eg. End +30ms ; end running, and delay 30ms
Nop	Null, just pass

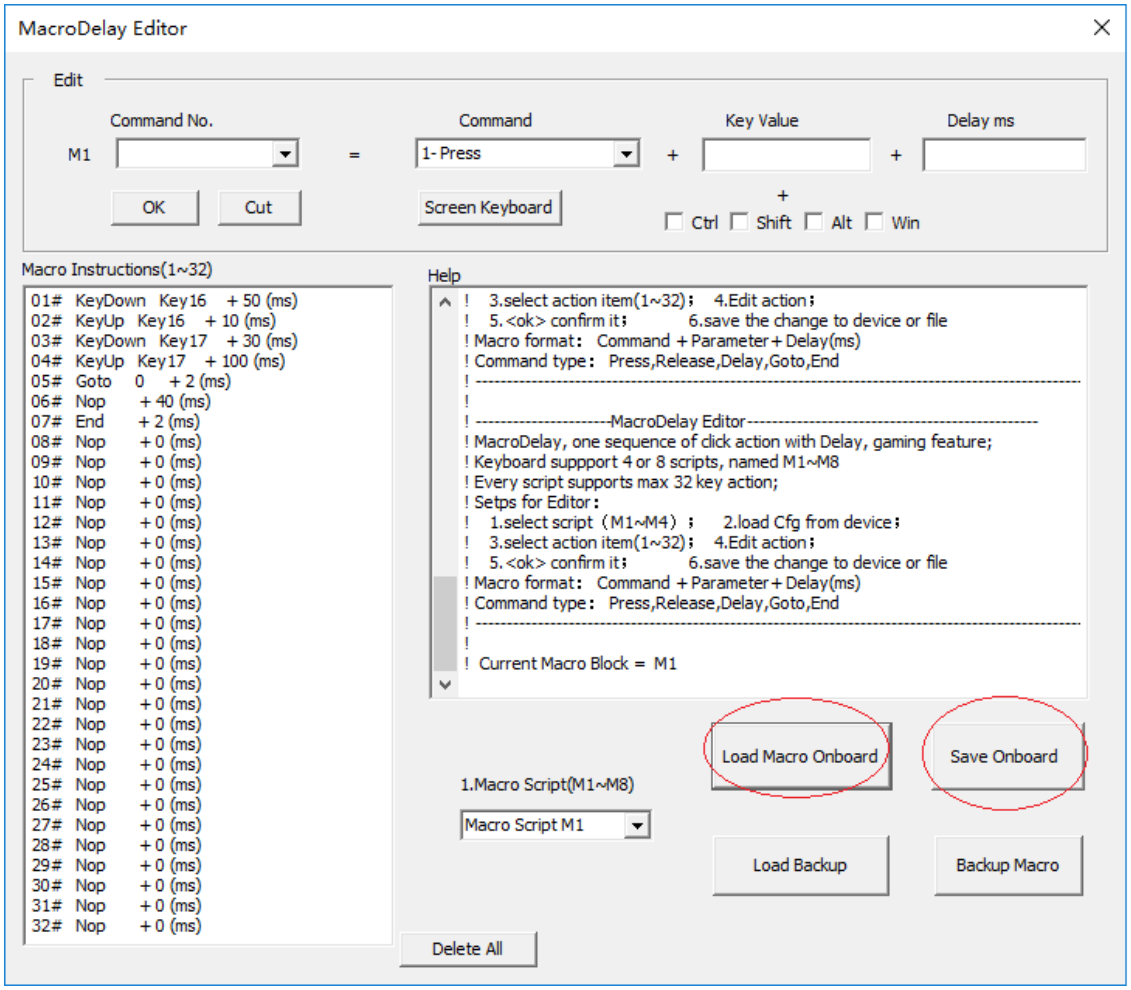
3.4.2 Edit one Macro Script

Step1: click <Macro Scrip Edit>to edit one script.



Notes: Every profile has one on-off to enable/disable ProgrammableMacro function. Make sure the on-off is enabled.

Step2: Select Macro Script and Load configuration from device.



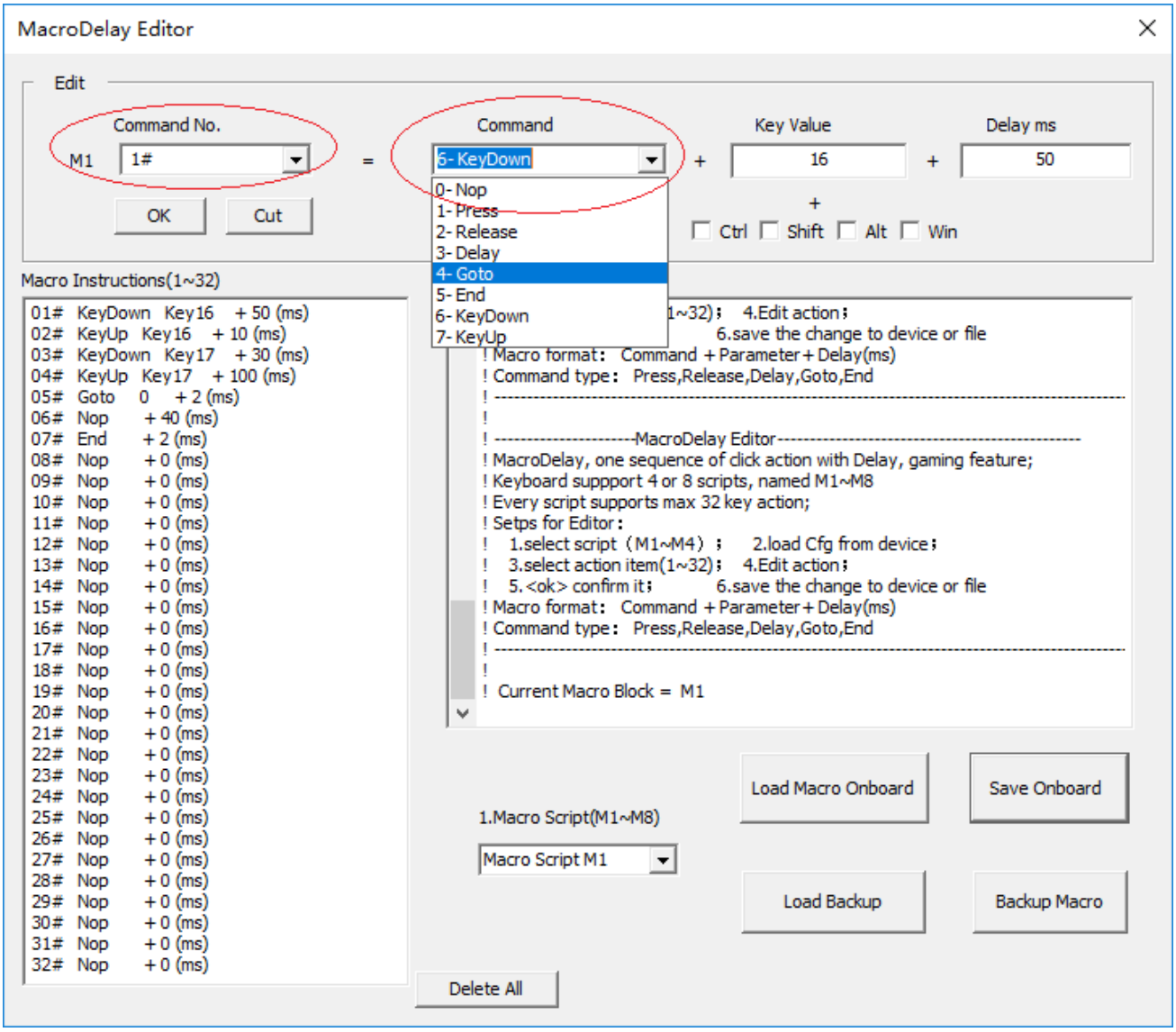
< Macro Scrip (M1~M8) > Select script from M1~M8.
<Load Macro Onboard> Load the script from device.
<Save Onboard> Save the script to device.

<Load Backup> Load one backup from PC
<Backup Macro> save one backup to PC

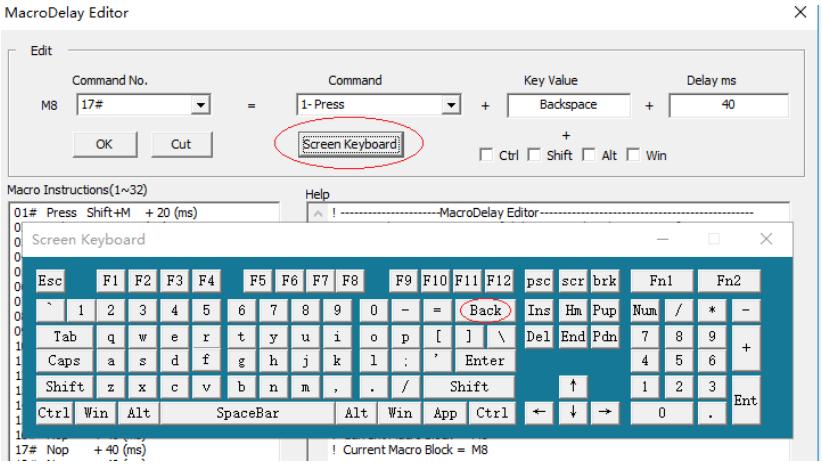
<Delete All> delete all commands in current editor.

Step 3: Edit command

1. Select command ID from <Command No. >.
2. Select command from <Command List>. Thecommand list include Nop/Press/Release /Delay/Goto/ Keydown/Keyup, and End.

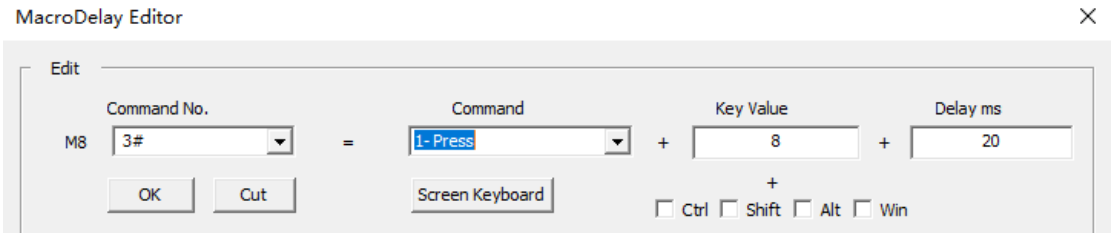


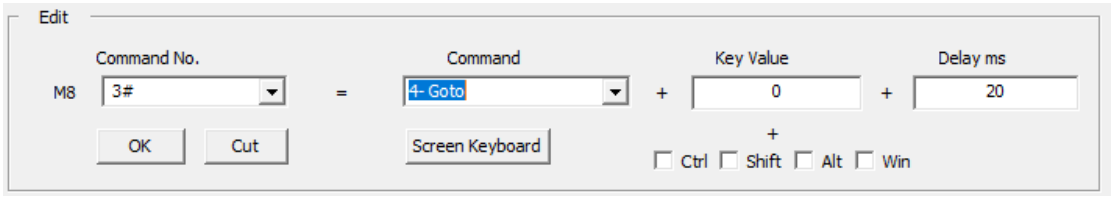
3. Enter one char in text box <Key Value> , by clicking Screen Keyboard.

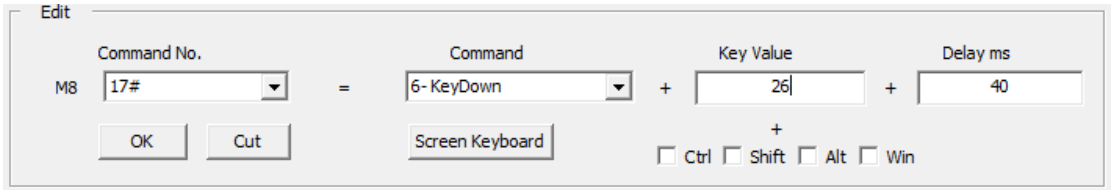


4. Setting one delay time at last box, the unit is ms, 1000ms = 1 second. Every command should attach delay time.
5. Click <OK> confirm the change.
   <Cut> can delete one command.
   <Delete All> can delete all commands.
6. <Save Onboard> save the macro script to device according selected Script ID.

Example:



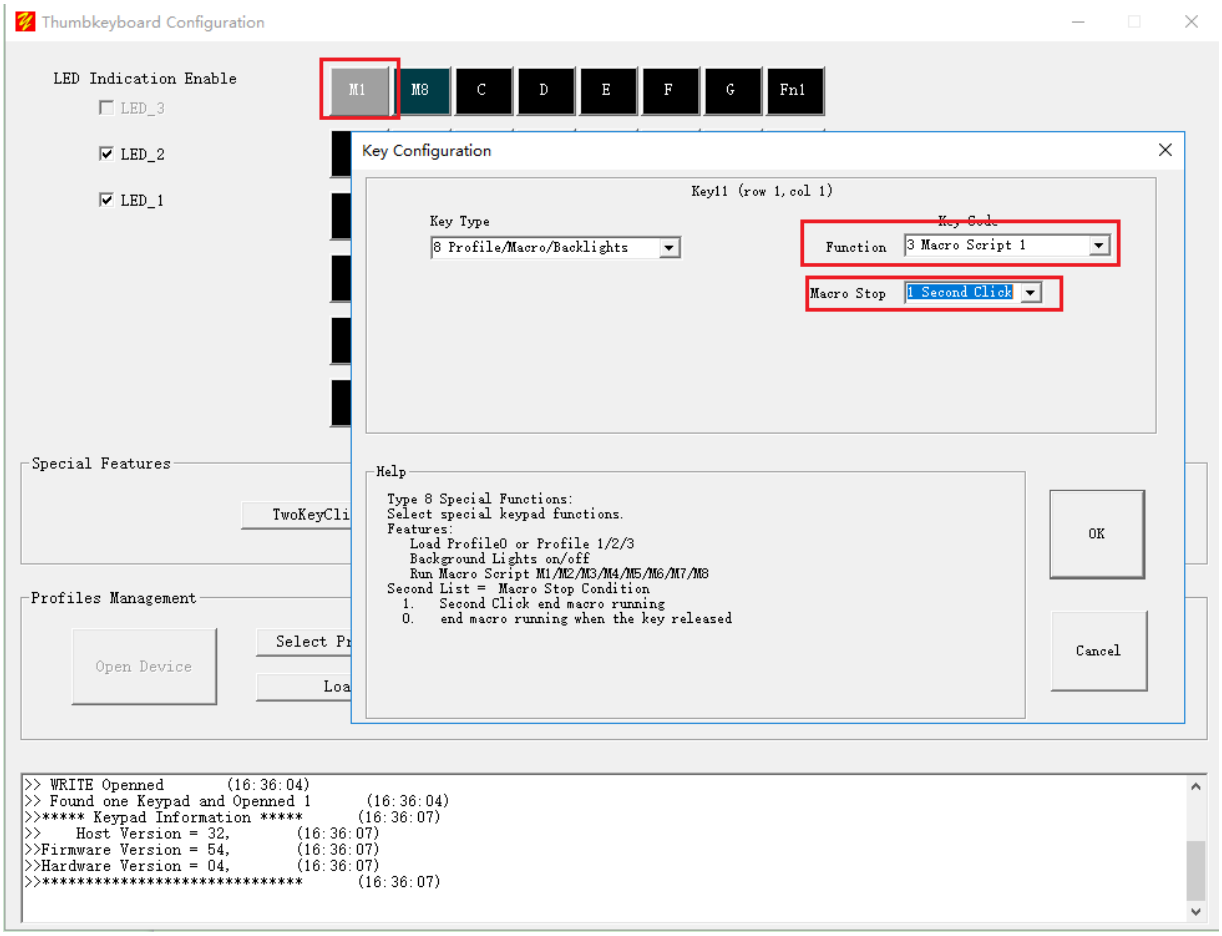




Notes: Macro script should be terminated with END command, otherwise Macro processor would run next script.

Step 4: Define one key to trigger Macro Script

Select one key to trigger Delay-Macro.



1. Select one key and click it.
2. Setting Key Type 8
3. Select Function(Macro Script 1~8)
4. Select Macro Stop Mode, release-endor second-click-end.

At last, click <Save Onboard> and <End and Reboot>.

3.4.3 Macro Script Examples

Example: Go!Go! Go!Go! Go!Go! …

01#	Press	Shift+G	+ 40 (ms)
02#	Release		+ 40 (ms)
03#	Press	O	+ 40 (ms)
04#	Release		+ 40 (ms)
05#	Press	Shift+1	+ 10 (ms)
06#	Release		+ 40 (ms)
07#	Delay	+ 1000 (ms)	; delay 1 second
08#	Goto	0 + 10 (ms)	; jump to the beginning

Example: 2w

01# Press 2 + 20 (ms) ; key down, 2
02# Release + 10 (ms) ; key up , 2
03# Press W + 20 (ms) ; key down, w
04# Release + 10 (ms) ; key up, w
05# End + 5 (ms)

Example: Here is Delay Macro Demo

01# Press Shift+H + 40 (ms)
02# Press E + 40 (ms)
03# Press R + 40 (ms)
04# Press E + 40 (ms)
05# Press Space + 40 (ms)
06# Press I + 40 (ms)
07# Press S + 40 (ms)
08# Press Space + 40 (ms)
09# Press Shift+D + 40 (ms)
10# Press E + 40 (ms)
11# Press L + 40 (ms)
12# Press A + 40 (ms)
13# Press Y + 40 (ms)
14# Press Space + 40 (ms)
15# Press Shift+M + 40 (ms)
16# Press A + 40 (ms)
17# Press C + 40 (ms)
18# Press R + 40 (ms)
19# Press O + 40 (ms)
20# Press Space + 40 (ms)
21# Press Shift+D + 40 (ms)
22# Press E + 40 (ms)
23# Press M + 40 (ms)
24# Press O + 40 (ms)
25# Press Space + 40 (ms)
26# Release + 40 (ms)
27# Nop + 40 (ms)
28# Press Space + 40 (ms)
29# Press Shift+M + 40 (ms)
30# Press 4 + 40 (ms)
31# Release + 40 (ms)
32# End + 40 (ms)

Example: press 16 keys down ,and keep 500ms.

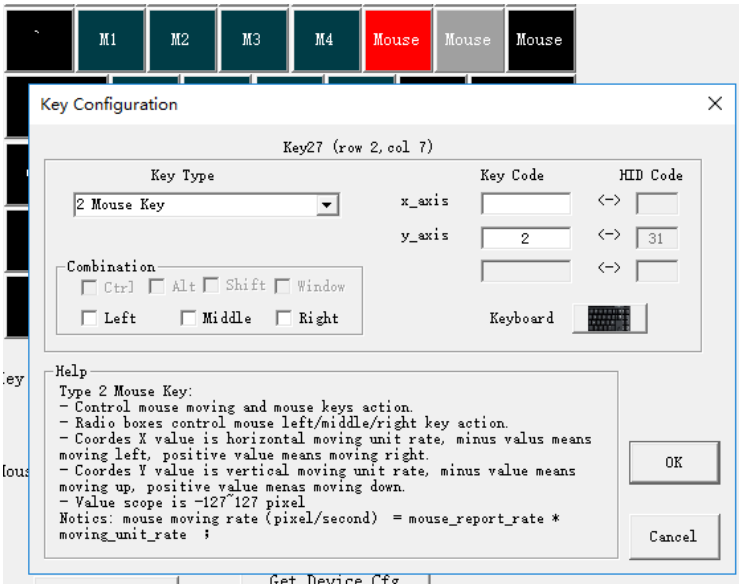
01# KeyDown Key25 + 2 (ms)
02# KeyDown Key22 + 2 (ms)
03# KeyDown Key23 + 2 (ms)

04# KeyDown Key24 + 2 (ms)
05# KeyDown Key32 + 2 (ms)
06# KeyDown Key33 + 2 (ms)
07# KeyDown Key34 + 2 (ms)
08# KeyDown Key35 + 2 (ms)
09# KeyDown Key42 + 2 (ms)
10# KeyDown Key43 + 2 (ms)
11# KeyDown Key44 + 2 (ms)
12# KeyDown Key45 + 2 (ms)
13# KeyDown Key52 + 2 (ms)
14# KeyDown Key53 + 2 (ms)
15# KeyDown Key54 + 2 (ms)
16# KeyDown Key55 + 2 (ms)
17# Delay + 500 (ms) ; delay 500ms, keep buttons down
18# End + 500 (ms) ; end macro, release all keys and buttons, delay 500ms

Example: mouse moving.

01# KeyDown Key26 + 400 (ms)
02# KeyUp Key26 + 200 (ms)
03# KeyDown Key27 + 200 (ms)
04# KeyUp Key27 + 200 (ms)
05# KeyDown Key28 + 400 (ms)
06# KeyUp Key28 + 400 (ms)
07# KeyDown Key17 + 200 (ms)
08# KeyUp Key17 + 40 (ms)
09# Goto 0 + 40 (ms)

Key26/27/28/17 are mouse moving Left/down/right/up. User can configure it at main window. This feature can control gamerole turn around quickly by one click.



Example: define one key to control mouse

3.5 More Keys

Keypad is half of keyboard, only with 43/44 key onboard. But there's 3 ways to expand more keys.

Method 1: Fn1/Fn2-shift

Fn1 and Fn2 are new shift which can expand keys. All key support this feature. .
For example: create Edit keys on right-pad by Fn1, and Num-pad by Fn2.
Please refer chapter **3.2**

Method 2: 4 Profiles

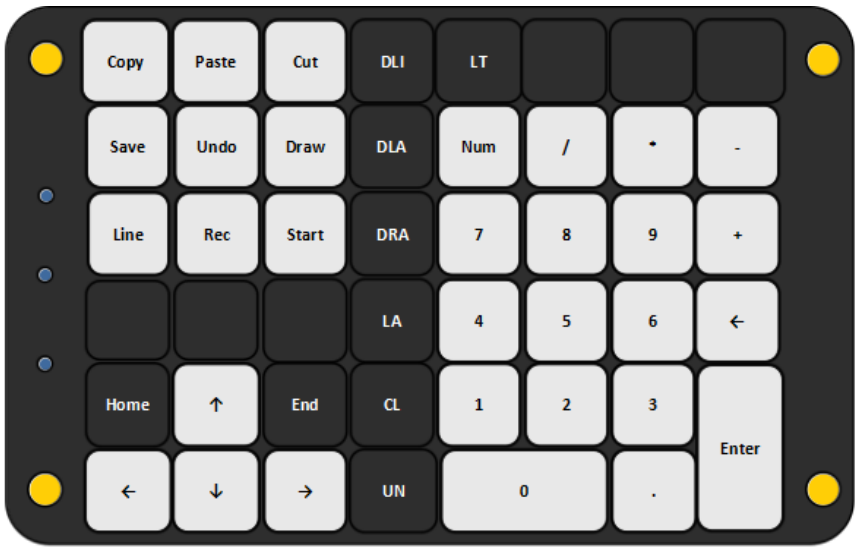
There are 4 profiles in keypad, named Default Profile, Profile 1/2/3. One profile is one key-map.
Please refer chapter 3.1.

Method 3 : TwoKeyClick

Two-Key-Click is one multiple shift function. Pressing down two keys, the keypad will report 1~6 chars to PC, max 6 char, or 5 char + shift/ctrl/alt/win. There's two ways to trigger the definition. One way is two normal key trigger it, another way is one burst-key to trigger it.
Total 32 commands for Two-Key-Click.
Please refer chapter 3.3.2 Two-Key-Click feature.

3.6 Hotkey Keypad

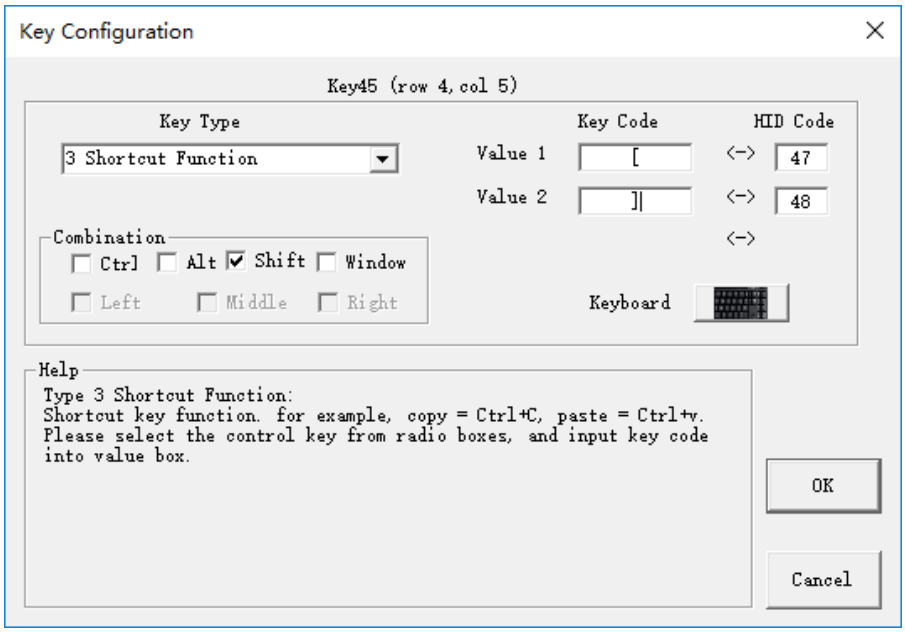
Integrated all hot-keys to a small keyboard, one hand cover all hot-keys, which is convenient for professional jobs, such as Photoshop , 3D Draw, CAD, etc. The hot-key may be char, number, shortcut key, command, etc.



Example: one tools for CAD layout

Method 1: Key Type of Shortcut Function (2 chars + Shift/Ctrl/Alt/Win)

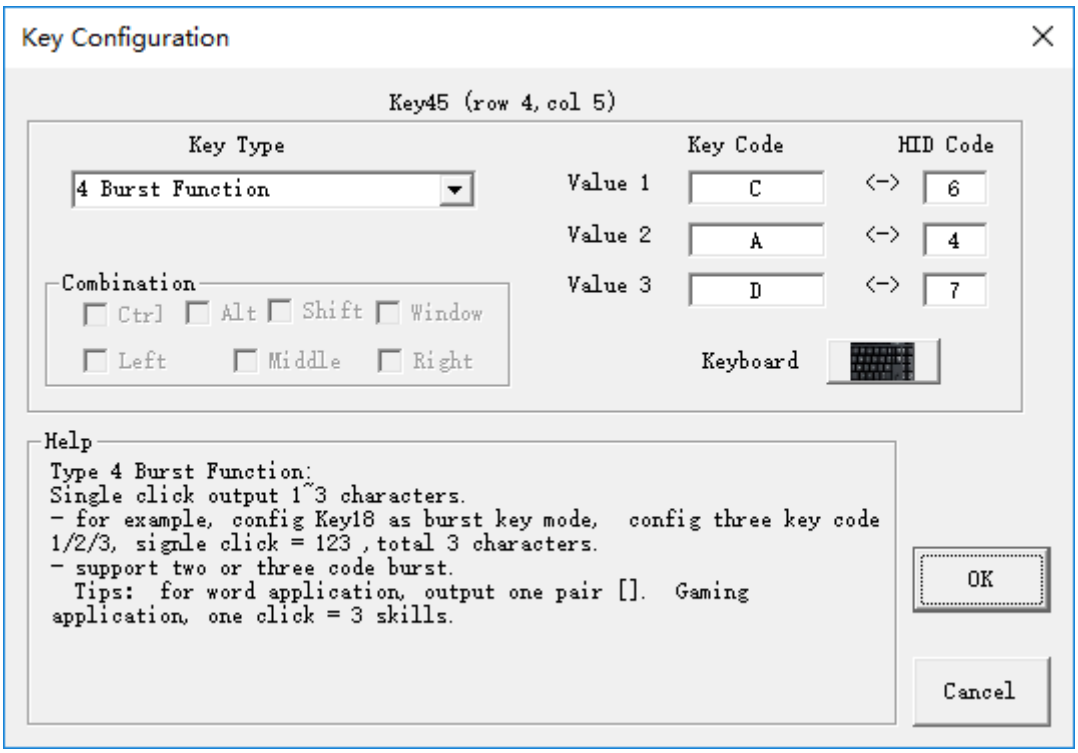
For example, click = Ctrl+C, shift+[+], etc. Every key supports shortcut key.



Example Key45 = {}

Method 2: Key Type of Burst Function (1~3 chars)

One click output 1~3 chars. For example, one click output '[' +']', cad , 123, etc.



Example: Key45 = cad

Method 3: TwoKeyBurst (1~6 char + shift/ctrl/alt/win)

TwoKeyBurst is extended Shift function. Pressing two keys, the keypad will report 1~6 chars to PC, max 6 char, or 5 char + shift/ctrl/alt/win. Any normal key could be a Shift controller. There's two ways to trigger the definition. One way is two normal key trigger it, another way is burst-key to trigger it. Please refer chapter 3.3.2.

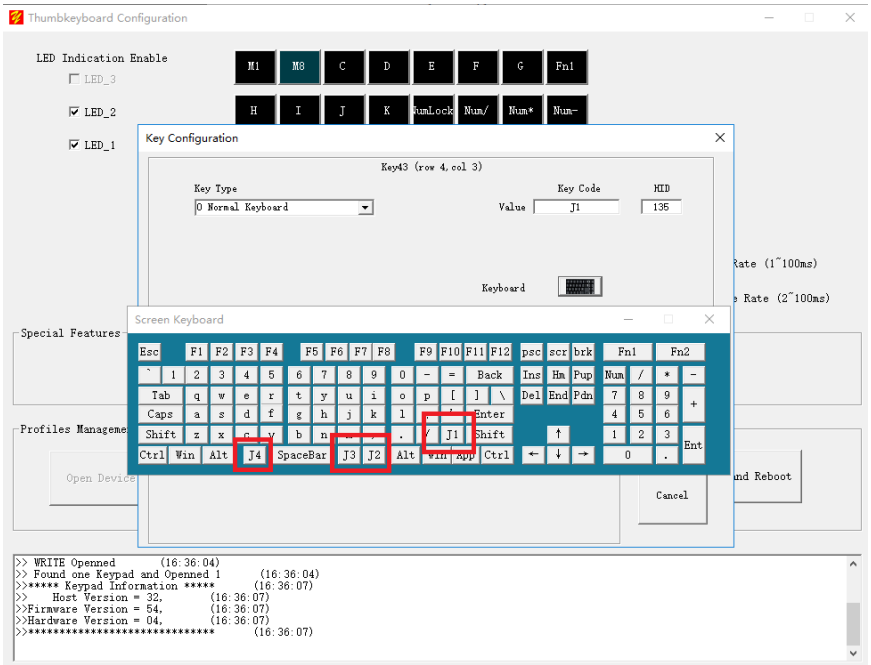
Method 4: Programmable Macro (1~31 char)

The device supports total 8 Macro Scripts, named M1/M2/M3/M4 and M5/M6/M7/M8. Split keyboard supports 4+4 Scripts. Every Script supports 32 commands, which means one macro can output 31 chars + End command. Please refer the chapter 3.4.

3.7 Japanese Keyboard

There's 4 dedicated keys on Japanese Keyboard as below. US keyboard can't support the 4 keys. User has to configure it.

User can select J1~J4 by screen keyboard as below.



Product List

1. **AE-SMKD62 Split-Keyboard (89 Keys)**

2. **AE-SMKD92 Gamepad (43 Keys)**

3. **AE-SMKD72 Numpad (Type A/B/C)**

Type-A 48 key Numpad

Type-B 46 key Numpad

Type-C 44 key Numpad