Manual for
iMK Series RGB Mechanical Keyboard Driver

Contributed by *MonkeyKing Custom*

Supported by *pc-100.com*

2017,07,08

Manual for Driver of iMK Series Mechanical Keyboard (PRO GAMING)

[Note]iMK series mechanical keyboards are with updated firmware and the driver software is also modified accordingly, this manual may be not updated timely. The latest version of this manual will be released in pc-100.com the first time.

This driver software is only for iMK series mechanical keyboard, e.g.. iMK002S-104, iMK10-104, iMK11-104, iMK101-104, iMKA002-104, iMKC001-104, iMK005-87.

Introduction

Working Modes
iMK Series keyboard supports 5 working modes, a standard mode (normal mode), an online mode with 3 configures and 3 offline (on-board) modes.

1. Standard mode
The standard mode is default mode of the keyboard, each key's function is as its printing. No user defined items in this mode except that you may define 5 playing light-effects.

2. Online mode
"Online" means this mode must work with the driver running in your computer, online mode would disappear if the driver were shut off, but configures for online mode are saved in the computer.
"F9" is on in white as an indicator when press "Fn + F9" to turn on this online mode, press "Fn + F9" again to close this mode

3. Offline modes (be called "On-board mode" sometimes)
There are 3 offline modes (Offline mode 1,2,3) for this keyboard, settings for each offline mode may be saved in keyboard (so, "offline mode" is also called "on-board mode" sometimes). Once you finished the settings and saved them in the keyboard on driver interface, these 3 offline modes may work everywhere whatever the diver were running in computer or not.
"F10","F11" and "F12" represent the 3 offline modes, press "Fn +F10" to turn on "offline mode 1" and light "F10" is on in white as a indicator, "Fn +F10" again to turn off this mode, similarly, press "Fn +F11" to turn on "offline mode 2", press "Fn +F12" to turn on "offline mode 3".

[Note] Press "Fn" key to check the working status, responding key is on to indicate the working status when "Fn" is pressed. If none of the 4 keys (F9~F12) were on when "Fn" were pressed, that means the working status is "standard mode". Press "Fn" + "the key which is on"(F9~F12) to switch to standard mode.

iMK Series mechanical keyboard supports 2 kinds of back light:
1)Playing light(F5 lights). Backlight effect is played in loop on keyboard.
  5 playing light effects were predefined for standard mode in factory settings. Press "Fn+F5" to change the light effects alternately in standard mode.
  User may define 5 favorite playing light effects for standard mode and define 1 favorite playing light effect for other working mode each..

2)Responding light (F6 lights): Backlight effect is played only once when a key is pressed .

Now, responding light is only available in standard mode.

5 responding light effects: *Single light, Running light, Ripple, Music light and Snake*. *"Music light"* is a sound-activated light effect , the backlight dances to the sounds around the keyboard.

press "Fn+F6" to change the responding light effects in standard mode..

Some functional keys about lights:

Standard mode, press "Fn + F5" to switch on "playing light", and then, press "Fn+F6" to change the playing light effects.

Standard mode, Press "Fn + F6" to switch on "responding light", and then, press "Fn+F6" to change the responding light effects.

Press "Fn + F8" to switch on / off back light.

Press "Fn + F7" to pause / play the dynamic back light effects.

Press "Fn" + "-/_" or "Fn" + "=/+" to adjust brightness of back light.

Press "Fn "+ "↑" or "Fn "+ "↓ " to adjust playing speed of back light (10 adjustable steps.)

Driver tools for iMK series mechanical keyboards

iMK series keyboard driver is special and only for iMK series mechanical keyboard, only runs on computers with Windows operating system. Users may define their iMK series mechanical keyboard or DIY light effect with iMK Driver. You should download iMK Driver from our website, www.pc-100.com, and install it in your computer.

Before running iMK Driver, you must connect your iMK keyboard with your computer, iMK Driver will detect keyboard device automatically.

Once iMK Driver is running on your computer and detected the iMK keyboard,   the software interface is as shown in *Fig.0-1*, following is brief introduction of each area:

(Fig.0-1)

1) **Software settings.**
   ✓ Settings and Information: you may select language, restore keyboard to factory settings.
   ✓ Select skin for the software, 6 available background patterns for choosing.
   ✓ Minimize software window.
   ✓ Close software. After closed, in fact iMK Driver is still running in memory and show an icon in the system tray at the bottom right corner of your screen, you may double click to quick start it.

2) **Project Area**
   ✓ Online Mode. Users may turn iMK keyboard to "online mode", add configures and make settings.
   ✓ Offline Mode. Users may turn iMK keyboard to "offline mode" and make settings for each offline modes.
   ✓ DIY Light. Users may design their own light effects, new light effects will display in the light options for choosing when setting.
   ✓ Macro. User may record and edit macro, new macros will display in the macro options for choosing when setting.

3) User may add new configure here for online mode, or select 1~3 offline modes to edit here.

4) Click this area to define function for keys or define playing light effect for keys.

5) Classified functions for choosing when define a key. Click the menu to display its items on area 6.

6) As above referred, here's the terminal functions for choosing for a key waiting to be defined.

7) This "keyboard" on the center is as a same layout as your iMK keyboard, user may click a key here to define, or check a key's settings here.

8) This "√" must be clicked when you finished a setting, in online mode, press this menu to save settings in your computer and take settings to effect.

9) When user are setting in offline mode, there is a "Apply" menu appeared on bottom right of the software UI, every setting for an offline mode must be finished by click this "Apply" menu to save into iMK keyboard and take to effect in offline (on-board) mode.

I)Set playing light effect

User may set playing light effect for each offline modes or each configures of online mode, users may also set 5 playing light effects for standard mode(normal mode) .
User may play / stop the playing light effect by press "Fn + F8".

Set playing light effect for online mode or offline mode:

(Fig.1-1)

1) Click to select the configure of online mode to set (as to offline mode, click to select the offline mode number).
2) Click "Light Effect" menu.
3) User may click to DIY a static backlit effect and set to be playing light effect, or click to select an existing

light effect, if select an existing light effect as playing light effect, then goto step 6).

4) To DIY a static backlit effect, you need to pick color first, pick color from classic colors or select color from the palette.

5) Then click the keys you want to light on them in the picked color,

Repeat 4) and 5) to finish the static backlit effect,

6) press "√" to finish setting in online mode.

[Skills] Pick the black color from the classic colors and click those keys you want to turn off.

7) If you were setting for offline mode, please click "Apply" to save your settings in iMK keyboard to finish the setting.

[Skills] If you want to cancel the playing light effect in a mode, you may click to DIY a static backlit effect (step 3) and keep all lights off and press "√" (and press "Apply" if it were in offline mode).

Set playing light effect for standard (normal) mode

User may set 5 backlit effects as playing light effects for normal mode, this backlit effects may be played on iMK keyboard in normal mode, press "Fn+Enter" to play / stop, press "Fn+F5" to switch on or switch among these 5 backlit effects.

(Fig.1-2)

Steps for setting playing light effects for normal mode:
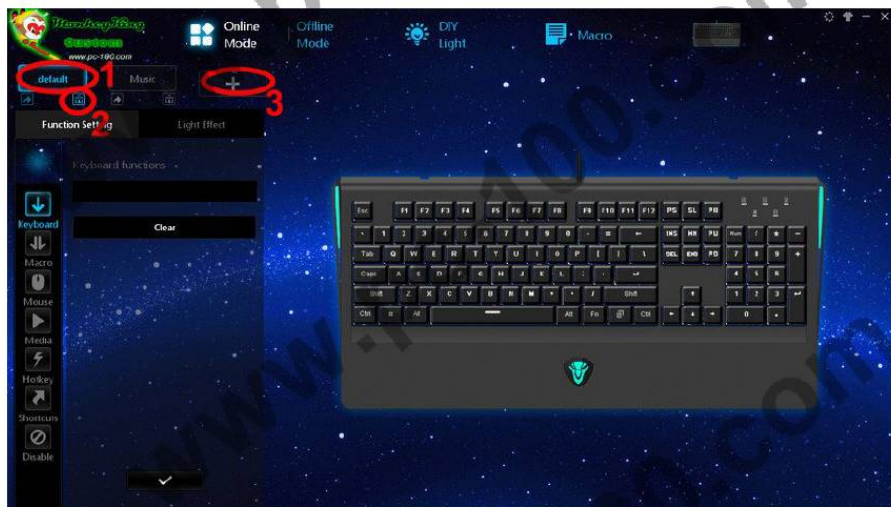
1) Click "Offline Mode"

2) Click "Light Effect" menu , 5 virtual keys L1~L5 popped up on "]" key.

3) Click to select a virtual key in L-1~L-5.

4) Select a option from the listed light effects

5) Click "√" to confirm.

6) Repeat step3~5 to finish the settings for all 5 virtual keys L-1~L-5, then click "Apply" to save the settings in iMK keyboard. An orange prompt box appears to show the light effect when hover mouse cursor on the virtual key.

[Skills]In step: user may click 🗑 *to delete the light effect bound to L1~L5 one by one, thus, no playing light effects in normal mode*

II) Online Mode

Online mode must work with iMK Driver running in the computer. Click "Online Mode" on the top menu, press iMK keyboard "Fn" key you would see "F9" is on in white. User may add configures in online mode, at most 3 configures may be added.

(Fig.2-1)

Users may define different settings for each configure, in fact, configures are subdivision working modes in online modes, it can be also said that iMK keyboard supports 3 online modes.
To delete a configure you need:
1)Click to select the configure
2)Click the delete icon to remove the configure.
[NOTE] Please be careful when decide to delete a configure, it CANNOT be recovered!

To add a configure you need:
3)Click the "+" menu to pop up a dialog
Input a name for the configure and press "OK"

Define a keyboard function for a key in online mode
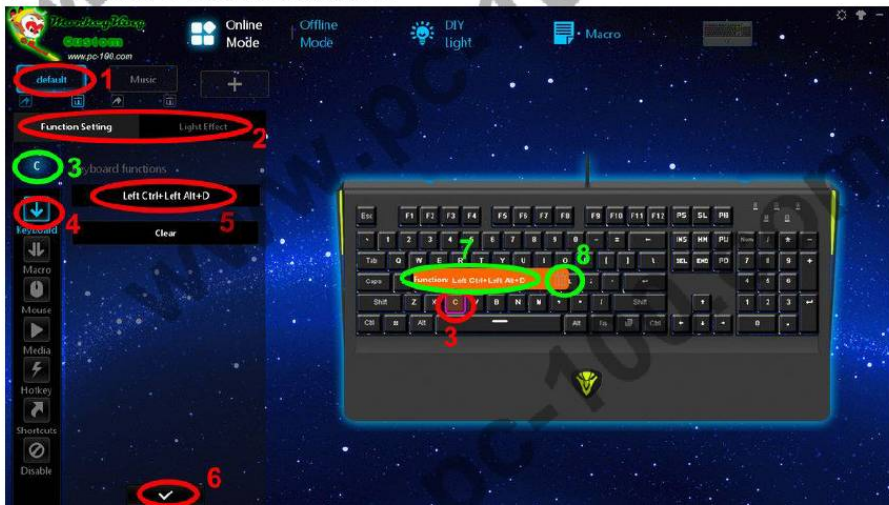
To define a key you need to (see *Fig.2-2*):

1) Select a configure.

2) Click "Function Setting"

3) Click to select (e.g."C") a key to be defined on the keyboard. The key is masked by orange color once it was selected and is show on left (see green "3" on the left).

4) Click "keyboard" menu, an input box pups up.

5) Press keys to input the content you want to bind to "C". You may input a letter(a~z), a digit(0~9) or some combined keys (e.g."Ctrl+Alt+Delete","Ctrl+c" or "Shift+c" and so on) , press "Clear" to reset the input box if needed.

[Skills] For example, if you want to define "D" to "C", but the key "C" had been set to another function before, you couldn't input a "C" to the input box. You may press "Fn+F9" to close online mode (meantime standard mode is opened), and press "C" to enter.

6) Press "√" to save the setting.

7) Hover the mouse cursor on the key ("C"), an orange prompt box appears to show the defined contents of this key.
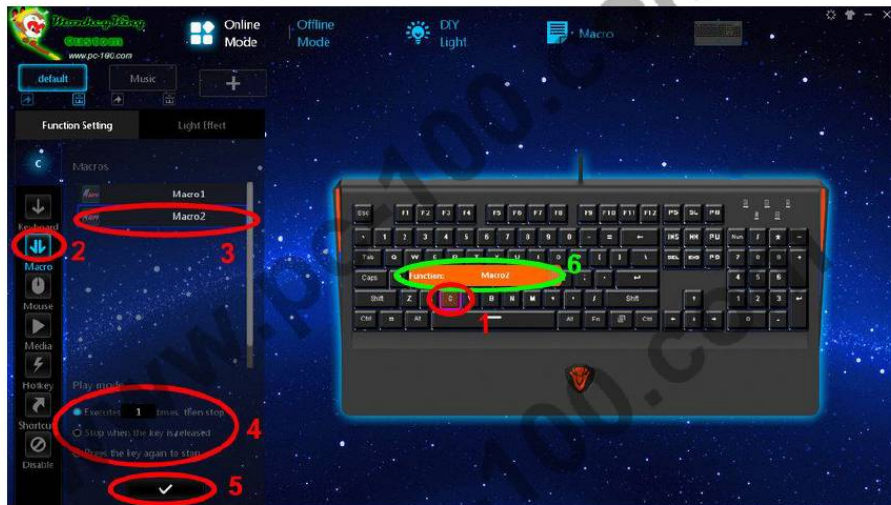
8) User may click ⬚ to delete the setting if needed.

(Fig.2-2)

Define a macro for a key in online mode

Sometime users may need to execute complex operations by clicking a key, iMK Driver may record macro, edit a macro and bind it to a key, thus only need to simply press a key to execute very complex actions. Here we study how to bind a existing macro to a key.

(Fig.2-3)

Steps to bind a macro to a key:

1) Click to select a key.
2) Click "Function Setting">>"Macro"to pop up the macro list.
3) Select a macro from the options (you must create some macros before, they would be listed here for choosing)
4) Select "Play Mode", there are 3 play modes for choosing:
   - Executes X times, then stop. *(X must be a positive integer, you should input a number here)*
   - Stop when the key is released *(The macro would stop executing if the key is released, the macro would execute repeatedly if the key is always pressed)*
   - Press the key again to stop.*(The macro would execute repeatedly before the key is pressed again)*
5) Click "√" to save the setting.
6) An orange prompt box appears to show the bound macro when hover mouse cursor on the key.

Define a mouse action for a key in online mode (See below Fig.2-4)

User may define a key to execute mouse action, including the frequently-used actions, left click, right click and middle click, besides these we provide other 2 actions, "back" and "forward" actions which are used to execute "Back" and "Forward" for netpage browsers in some 5-key mouse.

(Fig.2-4)

Steps to set a mouse action for a key:

Before setting, you may select the configure(e.g. "Default") of online mode to set, if you want to set responding light effect for offline mode you should select a offline mode from the 3 offline modes)

1) Click to select a key (e.g."C").
2) Click "Function Setting" >>"Mouse" to pop up a list of mouse actions.
3) Click to select a mouse action from the options.
4) Click "√" to save the setting (and then press "Apply" menu on bottom right to save in iMK keyboard if you were setting for an offline mode)

An orange prompt box appears to show the bound mouse action when hover mouse cursor on the key, user may delete the bound mouse action by click 🗑 if needed.

Define a media player action for a key in online mode (See below Fig.2-5)
User may define a key to execute media operation when running a media player.

- ✓ **Play** ---*press to play media*
- ✓ **Play / Pause** ---*press to pause media and press again to play*
- ✓ **Stop** ---*press stop playing media*
- ✓ **Prev.** ---*press to jump to play previous song.*
- ✓ **Next** ---*press to jump to play next song.*
- ✓ **Vol+** ---*press to increase volume*
- ✓ **Vol-** ---*press to reduce volume*
- ✓ **Mute** ---*press to mute*

(Fig.2-5)

Steps to set a media shortcut for a key:

Before setting, you may select the configure(e.g. "Default") of online mode to set, if you want to set responding light effect for offline mode you should select a offline mode from the 3 offline modes)
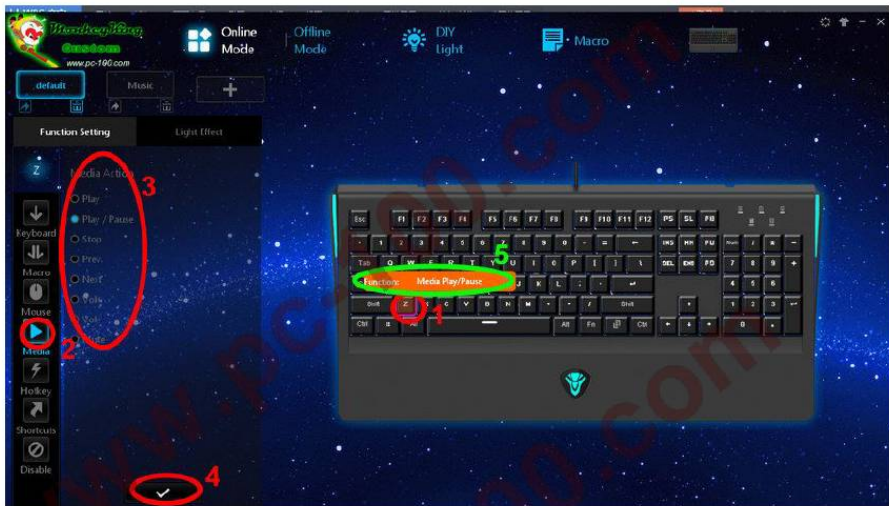
1) Click to select a key (e.g."Z").
2) Click "Function Setting" >>"Media" to pop up a list of media actions.
3) Click to select a media action from the options.
4) Click "√" to save the setting (and then press "Apply" menu on bottom right to save in iMK keyboard if you were setting for an offline mode)

An orange prompt box appears to show the bound media action when hover mouse cursor on the key, user may delete the bound media action by click 🗑 if needed.

Define a hotkey for a key in online mode (See below Fig.2-6)

User may bind hotkey function to a selected key, we prepared some frequently-used hotkeys for choosing:.

- ✓ **Browser Back** ---*this function can be realized in mouse actions mentioned above*
- ✓ **Browser Forward** ---*this function can be realized in mouse actions mentioned above*
- ✓ **Browser Refresh**
- ✓ **Browser Favorite**
- ✓ **Browser Homepage**
- ✓ **Email** --*to open default Email software in the computer*
- ✓ **My Computer**
- ✓ **Calculator**
- ✓ **Copy** ---*this function can be realized in keyboard function("Ctrl+C") mentioned above*

✓ **Paste ---***this function can be realized in keyboard function("Ctrl+V") mentioned above*
✓ **Screenshot**

(Fig.2-6)

Steps to set a hotkey for a key:
Before setting, you may select the configure(e.g. Configure 1) of online mode to set, if you want to set responding light effect for offline mode you should select a offline mode from the 3 offline modes)
1) Click to select a key (e.g."Z").
2) Click "Function Setting" >>"Hotkey" to pop up a list of hotkeys.
3) Click to select a hotkey from the options.
4) Click "√" to save the setting (and then press "Apply" menu on bottom right to save in iMK keyboard if you were setting for an offline mode)
An orange prompt box appears to show the bound hotkey when hover mouse cursor on the key, user may delete the bound hotkey by click 🗑 if needed.

Define a shortcut for a key in online mode (See below Fig.2-7 and Fig.2-8)
User may define some computer-related shortcut for a key in online mode, e.g. To open a file, to execute a program, and etc, for the reason of the shorts have something thing to do with the computer, this function is only available in online mode while is unavailable in offline modes.

(Fig.2-7)

(Fig.2-8)

Steps to set a shortcut for a key in online mode:

Before setting, you may select the configure(e.g. Configure 1) of online mode to set.

1) Click to select a key (e.g."RShift").

2) Click "Function Setting" >>"Shortcuts"

3) Click "+" to open a native file dialog box.

4) Change file path to find and select your expected file(e.g."25.jpg"), click "Open" on the bottom right of the file dialog box, the file name will appear in the input box.

5) Click "√" to save the setting.

Now you may press "L" to open the image "25.jpg".

An orange prompt box appears to show the bound shortcut when hover mouse cursor on the key, user may delete the bound shortcut by click 🗑 if needed.

To disable a key   (See below Fig.2-9)

In online mode or offline modes, It's very easy to disable a key, pressing a key to do nothing if the key is disabled

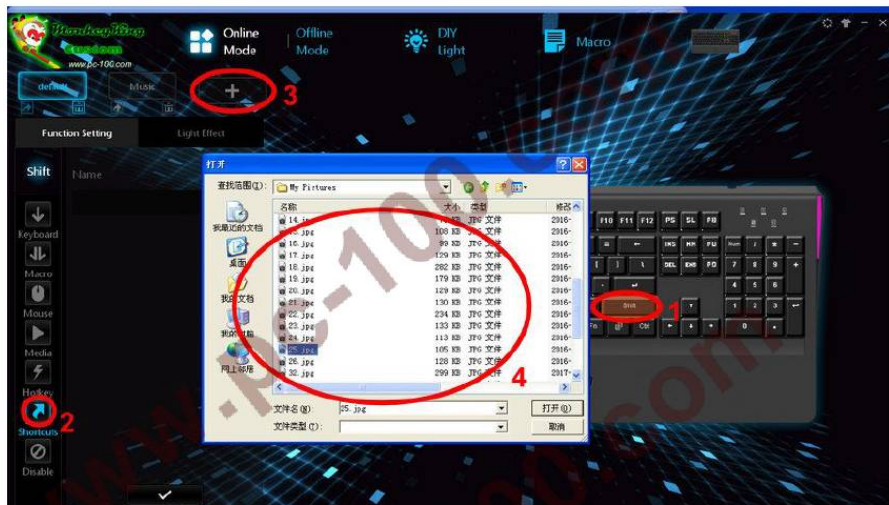*(Fig.2-9)*

Steps to disable key:

Before setting, you may select the configure(e.g. Configure 1) of online mode to set, if you want to set responding light effect for offline mode you should select a offline mode from the 3 offline modes)

1) Click to select a key (e.g."/").

2) Click "Function Setting" >>"Disable", the selected key (e.g."/") appears in the input box

3) Click "√" to save the setting (and then press "Apply" menu on bottom right to save in iMK keyboard if you were setting for an offline mode)

Now you press the key "/", there's nothing inputted.

An orange prompt box appears to show the key is disabled when hover mouse cursor on the key, user may delete the bound "disable" by click 🗑 to recover the key if needed.

III) Offline Mode

Setting processes for offline mode are in nearly the same way as the setting processes for online mode, an extra very different thing is to add a step of **clicking the menu "Apply"** on the bottom right of the interface screen to save the setting in iMK keyboard.

IV)DIY Light Effect

Users may design their own light effects in iMK Driver, these newly designed light effects will appear in the listed light options for choosing to set as a playing light effect.

Following steps are to DIY a light effect:

(Fig.3-1)

Basic operations of DIY light effect (Fig.3-1)

1) Click "DIY Light" menu on the top of screen to enter "DIY light" UI..

2) Add a new light effect. Click "+" and click "New effect"(2.1) to create a newly empty light effect, there's a dialog box popped up waiting for a name for the newly created light effect(2.2), enter a name and press "OK", a newly created light effect would display on the bottom of the list.

3) Copy an existed light effect. Click to select a light effect listed and click "Copy" icon to copy it, a copy of the selected light effect will display on the bottom of the list.

4) Delete an existed light effect. Click to select a light effect listed and click "Delete" icon to delete it.
  [NOTE] it cann't undo if a light effect were deleted.
5) Edit an existed light effect. Click to select a light effect listed and click "Edit" icon to edit it.

Design or edit a light effect (Fig.3-2, 3-3)
We know dynamic light effect is composed by some frames, a frame has 2 main parameters, frame image and frame delay time. In iMK keyboard, frame delay time can be adjusted by press " Fn"+" ↑ " to reduce (to increase the playing speed) or press " Fn"+" ↓ " to increase (to reduce the playing speed).

In keyboard backlit effects, frame image includes 2 parts, "frame light layout" and "frame color layout", these two parts is played separately and the "frame color layout" overlays to the "frame light layout", logically, "frame light layout" is like a opaque curtain with some transparent holes forming a pattern while "frame color layout" is like multicolored lights shine on the curtain.Correspondingly, there are 2 aspects to design a frame:

- Design frame light layout (animat)
- Design frame color layout (effect)

We design some frames, all frames will constitute a light effect.
According to the above knowledge, we should learn the following to design a light effect.
[Note] here so-called "frame" is not as same as the animation frame in the strict sense.
At first, user may create a new light effect, then click "Edit" to modify the light effect (refer to Fig.3-1, step 2 or step 4), Fig.3-2 interface appears on your screen.

[Skills] Before designing a new light effect, it's a good idea to copy an existed light effect, select the copy and press "edit" icon to see and learn its frames and effects.

Design frame light layout (Fig 3-2)
In fact, make some keys to be on to form an expected pattern in a frame, that's so-called "frame light layout".

(Fig.3-2)

Steps to design frame light layout:(Fig.3-2)

Create a new light effect and click to select it, click "Edit" icon to enter the UI shown in Fig.3-2

1) Click "+" to add a new frame.(Actually, there's a automatically created frame named "frame0" in the newly created light effect.).

(Select a existed frame and click the "copy" icon which is under the "Add" icon to copy it or click the "delete" icon to delete it.)

[Skills] If need, click the icon "🗑" to delete a frame. **it cann't undo if a frame were deleted.**

2) Click the frame name to select a frame as the current frame to edit (the selected frame is high lightened). One by one to click the keys which you want to be lighted on the frame(see the mark 2.1, you may also switch off a lightened key by click it).

3) Bulk selection is available, user may click to select a whole row in bulk or click to select all/none in bulk.

[Skills] A sketch of the light effect may do good to help you lighten on the correct keys quickly.

4) Repeat step 2 and step 3 to design all frames. Click " ↑ "or " ↓ " icon to move up / down the frame to change the frame order if needed.

5) Click the number (default value is "1") and enter a positive integer to confirm the number of frames to be played, a bigger number means a more longer stay time of a frame light layout.

6) User may click "Preview" menu to preview the factual playing effect (Only light layout could be seen if no color effects were added before) and press "Stop"(the "Preview" menu will change to "Stop" after clicked) menu to stop previewing.

7) Press "Save" to save you project.

8) Press "Effect" to enter the interface of "Design frame color layout"(See Fig.3-3)

[Attention] During the course of step 1 to step 6 above, please DO NOT click the "Cancel" menu except you know what you are doing. Clicking this "Back" menu will go back to the initial interface of "DIY

Light"(Fig.3-1), all settings of step1~6 would disappear and nothing can be done to recover them.
If you want to save the design during above step 1~6,   you may click "Save" to save.

Design frame color layout (effect, see Fig 3-3)
If above designed "frame light layout" were a sketch of a painting, "frame color layout" is to touch up the sketch with colors and color effects to be a final painting.

To design frame color layout, user may following concepts in iMK Driver:
- There are 3 color-effects for choosing, Single color, RGB and Breathing color (marked with "Color", "RGB" and "Breath" in iMK Driver).
  - ✓ Color: click to add a single color frame.
  - ✓ RGB: click to add a RGB frame, this frame color is with changing RGB color.
  - ✓ Breath: click to add a frame with breathing color.
- There's a color square at the line of each color frame, the color of the square mean the color of a "single color" frame, or means the initial color of a "RGB" frame, or means the color of a "breathing color" frame. User may click the color square to change the frame color.
- Similar with "frame light layout", number of the color frames is a important parameter, this positive integer number determine the stay time of a color layout when playing.

(Fig.3-3)

Steps to design frame color layout:(Fig.3-3)
1) Click the color effects and click "Add" icon, options will pop up for choosing ("Color", "RGB"

and "Breath") , select a type from the options to add a color frame.

(Select a existed effect and click the "copy" icon which is under the "Add" icon to copy or click the "delete" icon to delete it.)

2) Click the color square to select the color of the frame.

3) Click the number and enter a positive integer to confirm the number of frames to be played, a bigger number means a more longer stay time of a color frame. If clicked a "Breath" frame, there would pop up a dialog box and 2 parameters ("breathing frames" and "interval frames") waiting for inputting.

4) Click the effect name of the frame to select a color frame to design (the selected frame is high lightened).

5) One by one to click the keys which you want to be lighted on the color frame, you may also switch off a lightened key by click it.

Bulk selection is available, user may click to select a whole row in bulk or click to select all/none in bulk.

[Note] If you click to lighten on some keys which were not lit in "frame light layout", these key would be invalid in final light effect when playing.

6) Repeat step 4 ~ 5 to finish all color frames, then click "Preview" to preview the final effect of the light, and press "Stop"(the "Preview" menu will change to "Stop" after clicked) menu to stop previewing.
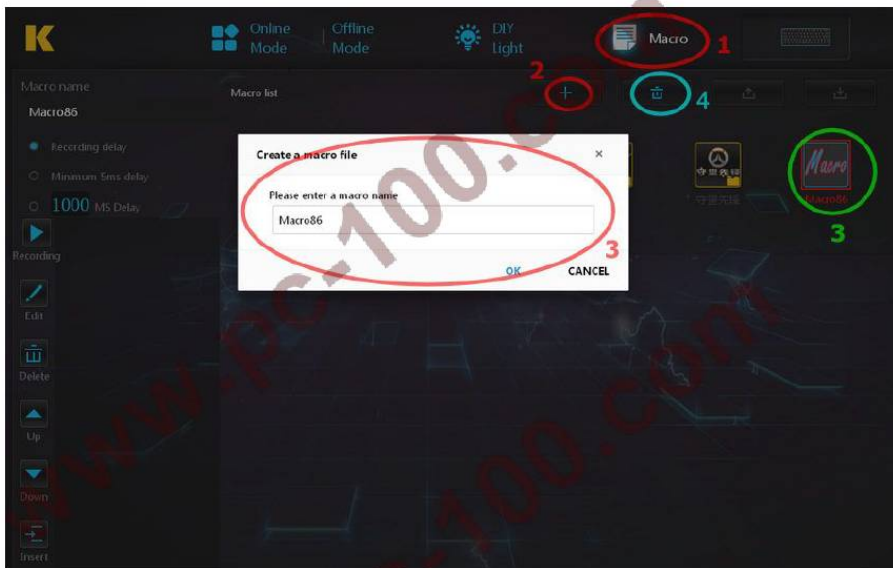
7) Click "Save" to save the light effect and back to the initial interface of "DIY Light".

[Skills] During step 1 to step 6, you may click "Save" to save your design at any time.

IV)DIY Macro

User may bind a macro to a key is a powerful function of iMK keyboard, with this useful function user would be able to execute some complex operations formed by keyboard-inputs and mouse right/left clicks by clicking a key. iMK keyboard is with built-in 64k memory space to save the setting for offline working mode.

iMK Driver makes it easy to record a macro or edit a macro.

(Fig.4-1)

To create a new macro

Steps to create a new macro:(Fig.4-1)
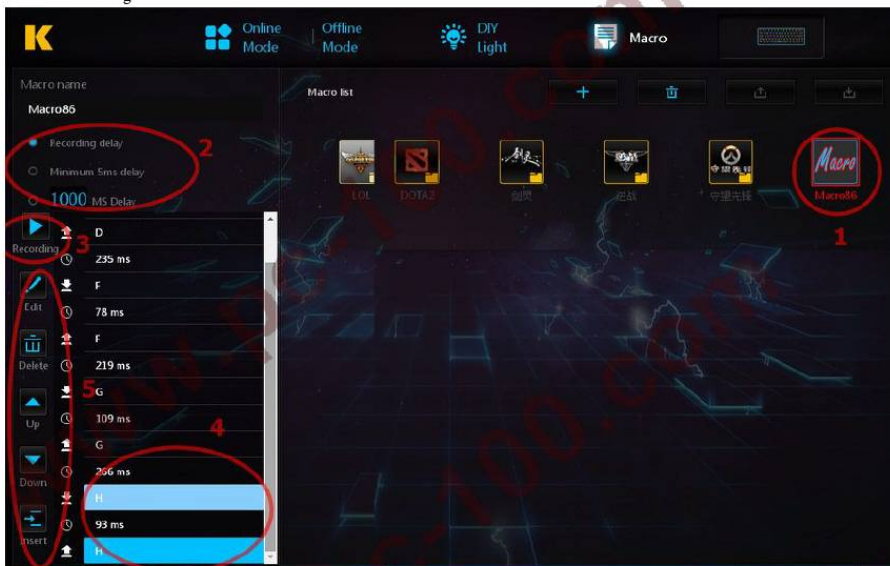
1) Click "Macro" menu to enter macro interface.

2) Click "+" to create a new macro. A dialog box pops up.

3) Input a name for the new macro and click "OK" to confirm, a newly created macro appears..

4) User may click a existing macro and then click " ▧ " to delete the macro.*(it cann't undo if a macro were deleted.)*

Next, we should record some actions for the macro, it's very easy to record a macro.

To record a new macro or edit a macro (Fig.4-2)

1) Click to select a macro to record into.

2) Select a delay method.

   ✓ Recording delay ---record the real delay time between actions.

   ✓ Minimum 5ms delay ---record the real delay time between actions, but the minimum delay time is 5ms, that is, if the real delay time is less than 5ms, system would record 5ms as the delay time

   ✓ X ms delay ---record fixed X ms as the delay time where X is a positive integer need user's input.

3) Click "Record" menu (then this menu will change to "Stop") , begin to type or mouse click, actions will be recorded and saved automatically, click "Stop" menu to stop recording.

[Attention] Click "Record" menu will clear all actions recorded in the macro before, if you just want to edit a macro, please DO NOT click this "Record" menu by mistake.

4) In iMK Driver, it's also very easy to edit a macro, click to select the frame to change, selected frame will be

masked with light blue color .

(Fig.4-2)

5) Click the menus on the left to execute corresponding modification

✓ Edit ---click this menu to enter edit status, user may input new value to replace the selected old one, then click at anywhere to confirm and escape from the edit status.

✓ Delete ---to delete the selected macro frame.

✓ Up --- to move up the selected macro frame.

✓ Down ---to move down the selected macro frame.

✓ Insert ----to insert some macro actions at the select frame, this operation will be explained in following instructions

All above steps are automatically saved in computer.

Sometime, we need to insert new actions into an existing macro, iMK Driver provides a very simple way to do this.

Here, we study how to insert actions in to an existing macro.

Steps to insert actions into an existing macro:(Fig.4-3)

1) Click to select an existing macro and click the macro frame where you need to insert actions.

2) Click "Insert"menu on the bottom left, a dialog box pops up with several options and radio buttons.

3) Click the rectangular box at right of "Insert" to expand the options:

✓ Delay before this ---to insert a delay time before selected macro frame.

- ✓ Delay after this ---to insert a delay time after selected macro frame.
- ✓ Action before this ---to insert actions before selected macro frame.
- ✓ Action after this ---to insert actions before selected macro frame.

If you select to insert delay time, you only need to input a duration time (in ms) and click "Insert" menu at the bottom to finish the "Insert" option.

If you select to insert actions, you need click to select a delay method (refer to above content) and

4) Click "Record" to record new actions, then click "Stop recording" to stop and click "Save" menu to save the macro.

(Fig.4-3)