

Red Scarf III User's Guide

How to Reflash

Rev1.0 by kai1103

Red Scarf III is shipped with a special bootloader which is based on the LUFA's BootloaderPrinter. So user cannot use tkg-toolkit (formerly dfu-reflash) to reflash firmware to Red Scarf III as usual. Instead the new bootloader is more interesting and easier to use.

CONTENTS

1. Reflash Mode	2
2. Make Keymap.....	3
2.1. Template	3
2.2. Built-in Function	4
3. Online Reflash	5
3.1. Enable Plugin	6
3.2. Reflash EEP	8
3.3. Reflash HEX	9
4. Offline Reflash	9
4.1. Reflash EEP	9
4.2. Reflash HEX	10
5. FAQ.....	11

1. Reflash Mode

Red Scarf III's bootloader has 2 reflash modes. Please take care to choose the appropriate mode according to usage. Reflash file into incorrect mode will cause keyboard to stop working (not be bricked, can be restored by reflashing correct file again).

Table 1: Reflash Mode

Mode	Application	How to Enter	Indicator
Reflash EEP	Update configurations (e.g. keymap)	Hold the key at top-left corner (commonly Esc) and plug usb cable	Blink LED of Caps Lock
Reflash HEX	Update features	Hold the two keys at top-left corner (commonly Esc and F1) and plug usb cable	Blink LEDs of Caps Lock and Num Lock

When the keyboard is running in reflash mode, a new device called "LUFA Printer Bootloader" will be found. Commonly it's no need to install a customized driver. Please wait until OS find a proper driver automatically.

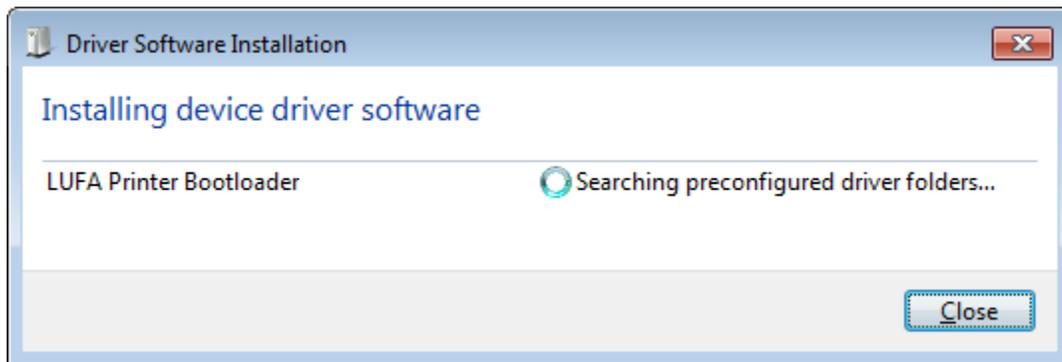


Figure 1: Screenshot of installing device driver

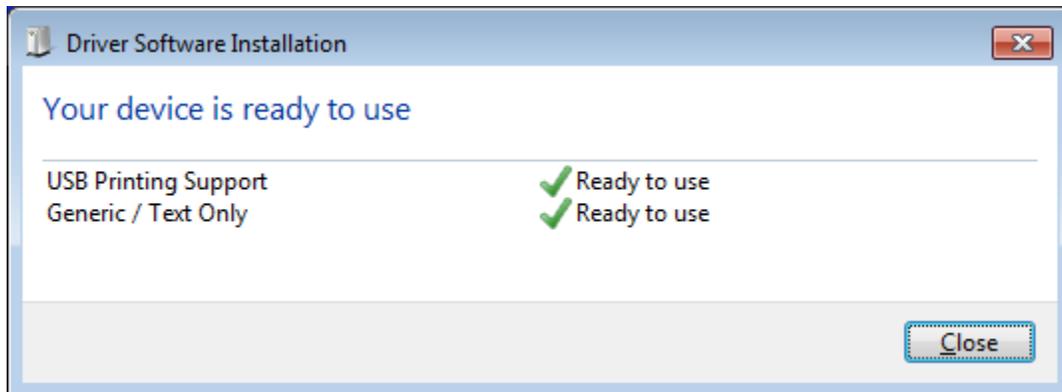


Figure 2: Screenshot of device driver installation successful

If the device driver has been installed successfully, you can find a new printer called “Generic / Text Only” in the “Device and Printers”. If there is any trouble when installing driver, please refer to “FAQ”.

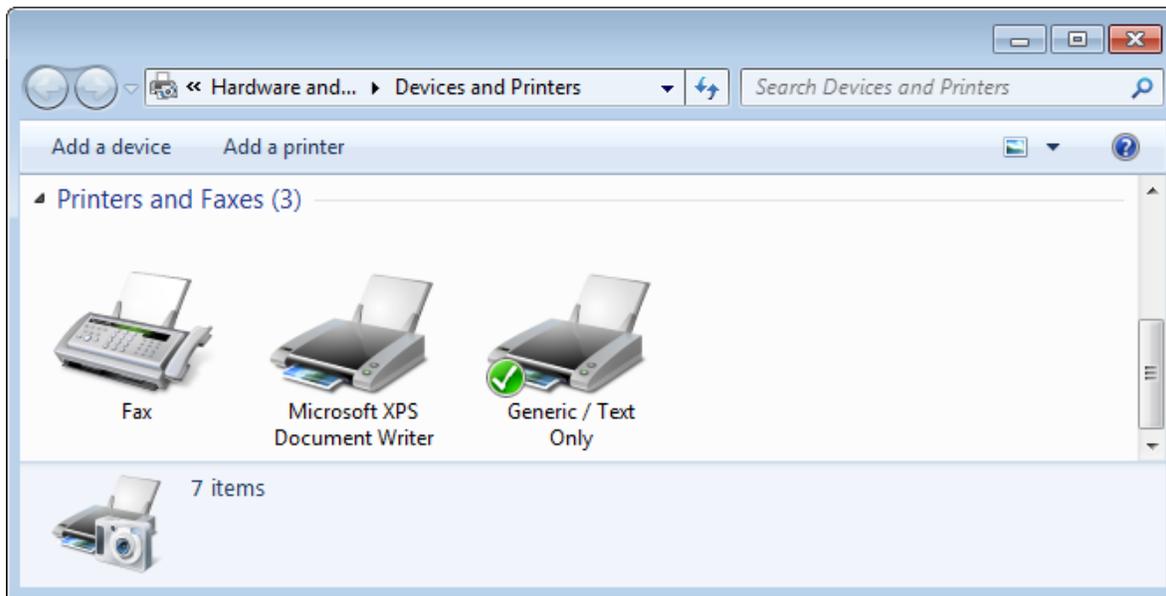


Figure 3: Screenshot of “Devices and Printers”

2. Make Keymap

To reflash a keymap, first you should make your keymap. This is similar to other keyboards which using TKG solution. Please refer to some documents of TMK and TKG for more details.

2.1.Template

Here are some templates of several common keymap for simple mode:

- 104WK: <http://www.keyboard-layout-editor.com/layouts/1d60edf38aaee02d8067163e7c253bb8>
- 1800+WIN: <http://www.keyboard-layout-editor.com/#/layouts/edb1b9a187ce9ed917fb96a7acbf98>
- 1800: <http://www.keyboard-layout-editor.com/#/layouts/1ae3ad1cc3fa91efcb0279025f8ec42d>
- WKL101: <http://www.keyboard-layout-editor.com/#/layouts/b6a6a0a2dcb19c5ddde615e45d4b9a1b>

Below is a sample of Fn code which can be imported into TKG by using “Menu>Tools>Import Fn”. This is also the default Fn settings shipped with the keyboard.

```

"0":["ACTION_LAYER_MOMENTARY",1],"1":["ACTION_BACKLIGHT_TOGGLE"],"2":["AC
TION_BACKLIGHT_DECREASE"],"3":["ACTION_BACKLIGHT_INCREASE"],"4":["ACTION_
FUNCTION","2",0],"5":["ACTION_FUNCTION","7",0],"6":["ACTION_FUNCTION","7"
,"1"],"7":["ACTION_FUNCTION","4",0],"8":["ACTION_FUNCTION","3",0],"9":["A
CTION_FUNCTION","6","2"],"10":["ACTION_FUNCTION","5","1"],"11":["ACTION_F
UNCTION","5","4"],"12":["ACTION_FUNCTION","5","13"],"13":["ACTION_FUNCIO
N","5","5"],"14":["ACTION_FUNCTION","5","11"],"15":["ACTION_FUNCTION","5"
,"6"],"16":["ACTION_FUNCTION","5","15"],"17":["ACTION_FUNCTION","5",0]

```

2.2.Built-in Function

The RGB LEDs on the bottom of Red Scarf III are controlled by both remoter and Fn built-in function.



Figure 4: A photo of remoter

Table 2: Button number of remoter

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24

Table 3: Table of Fn built-in functions

Fn Built-in Function		Remoter	Description
RGB On	-	3	Turn LEDs on
RGB Off	-	4	Turn LEDs off
RGB Toggle	-	N/A*	Toggle LEDs
RGB Increase	-	1	Increase brightness (for fixed color) or speed (for variable mode)
RGB Decrease	-	2	Decrease brightness (for fixed color) or speed (for variable mode)
RGB Fixed Color	White	8	Change LEDs to fixed color
	Red	5	
	Green	6	
	Blue	7	
	Red_1	9	
	Green_1	10	
	Blue_1	11	
	Red_2	13	
	Green_2	14	
	Blue_2	15	
	Red_3	17	
	Green_3	18	
	Blue_3	19	
	Red_4	21	
	Green_4	22	
	Blue_4	23	
RGB Variable Mode	Flash	12	Change LEDs to variable mode
	Strobe	16	
	Fade	20	
	Smooth	24	
RGB Step	Fixed Color	N/A*	Step through all fixed colors
	Variable Mode	N/A*	Step through all variable modes

* *These features are designed for saving Fn keys, no corresponding on remoter.*

** *Keyboard can memory LED status changed by Fn but not status changed by remoter.*

3. Online Reflash

We provide a convenience “Online Reflash” feature for Red Scarf III. This feature requires user have installed Java for their browser. If you hate Java or are just in a rush, please skip this chapter and see “Offline Reflash”.

3.1.Enable Plugin

1. We recommend that you use the latest version of modern browsers, like Google Chrome or Mozilla Firefox. Some features won't work with old version of Internet Explorer.
2. Install Java for browser and update it to the latest version.
3. Open "Configure Java" from start menu. Switch to "Security" tab and click "Edit Site List..." button.

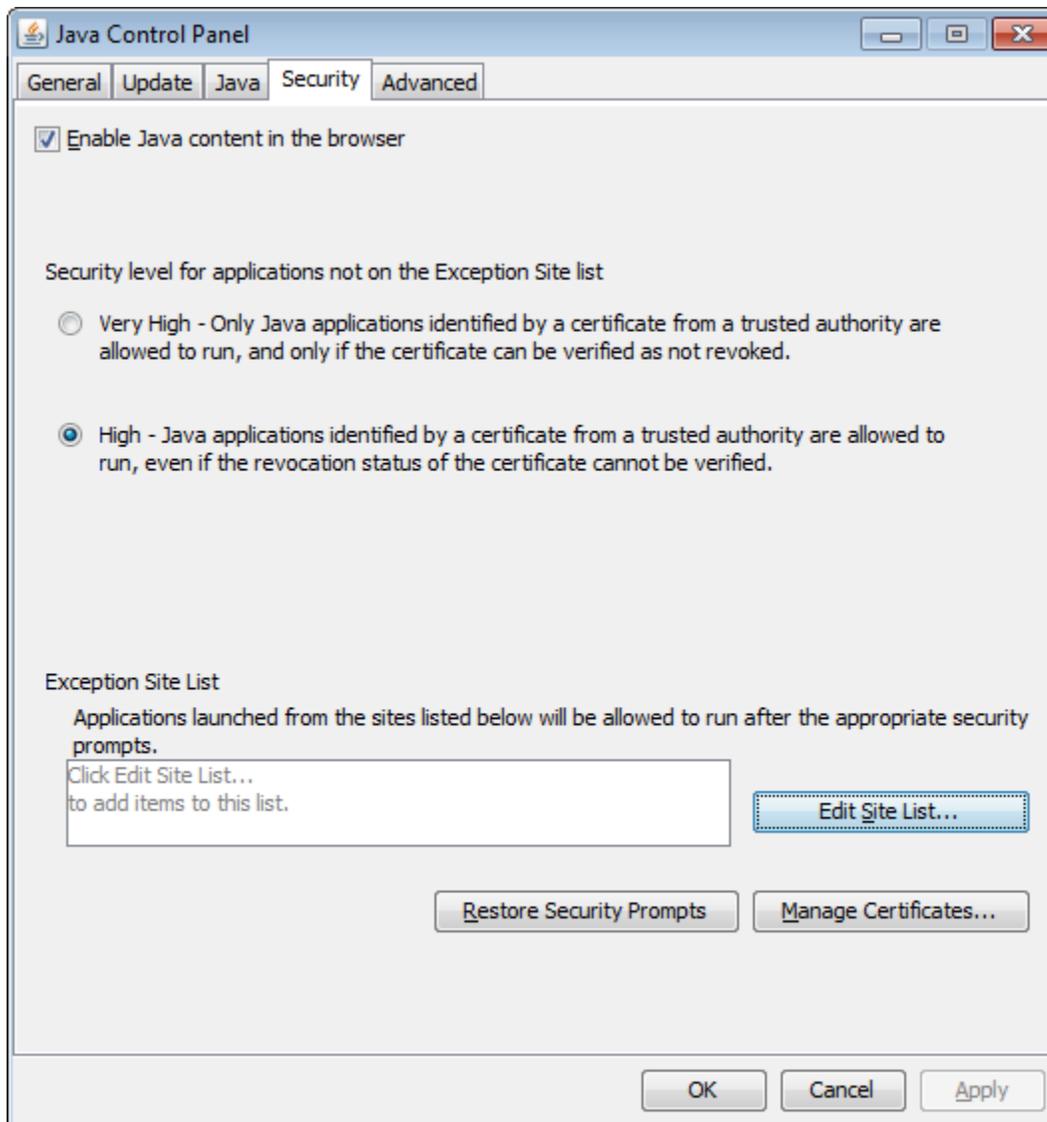


Figure 5: Screenshot of Security tab of Java Control Panel

4. Add "http://www.enjoyclick.org/tkg/" to Exception Site List, and then click "OK".

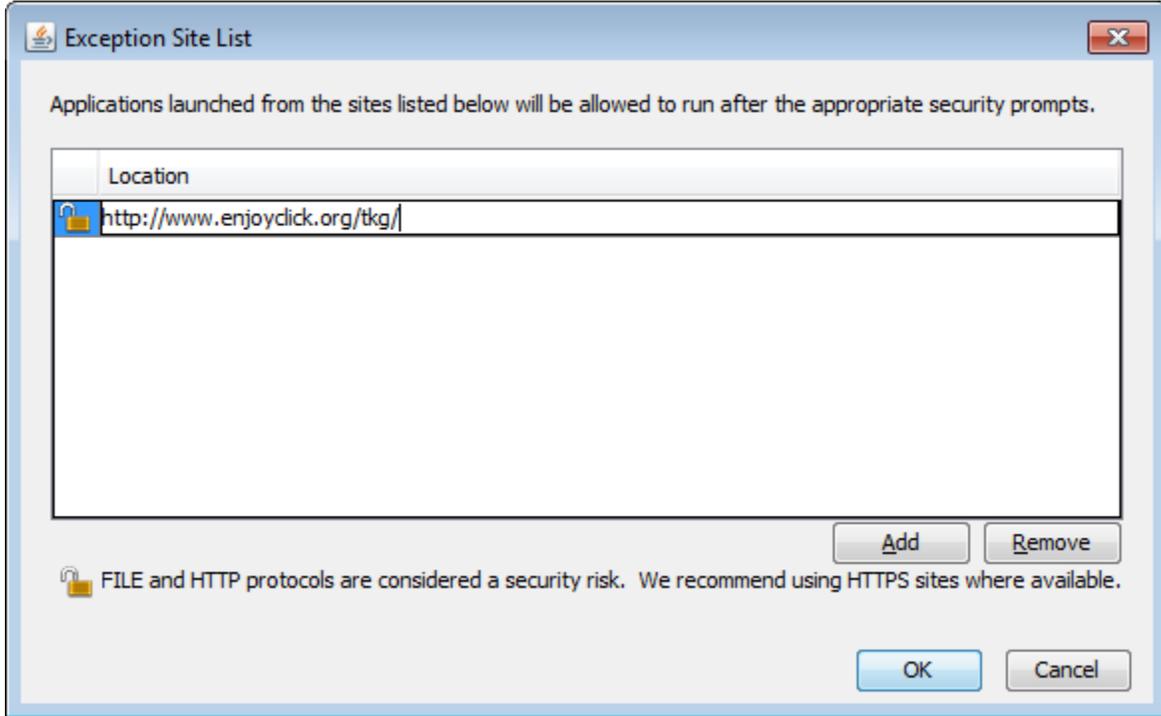


Figure 6: Screenshot of editing Exception Site List

5. Open "http://www.enjoyclick.org/tkg/" in browser. Choose keyboard to "RedScarIII", and then enable plugin on this page.
For example if you are using Google Chrome, there will be a blocked plugin icon at the right side of address bar. Select "Always allow plug-ins on www.enjoyclick.org" and click "Done".

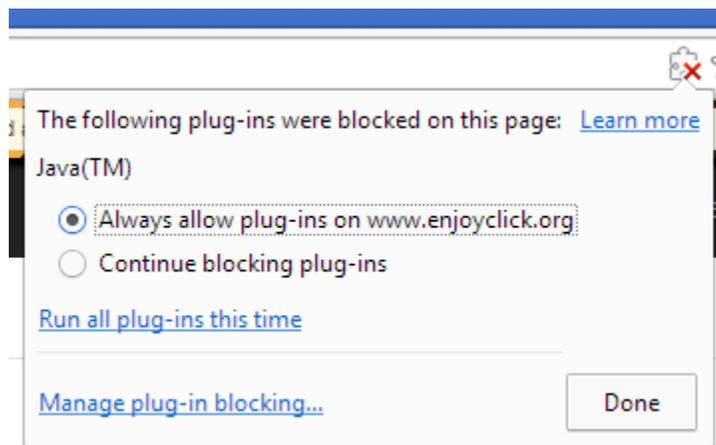


Figure 7: Screenshot of blocked plugin popup of Google Chrome

6. Then the following dialog will be shown. Check “I accept the risk and want to run this application”, and then click “Run”.

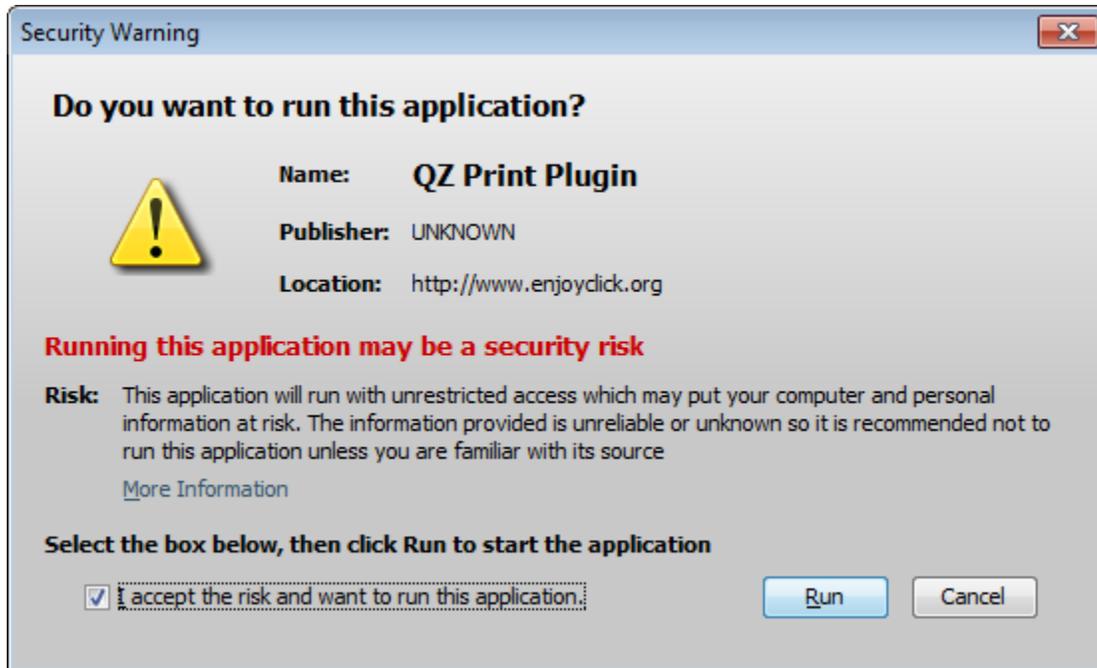


Figure 8: Screenshot of Security Warning of Java

7. If all these operations success. The icon of “Burn .eep file” will change from gray/white block to a fire icon.

3.2.Reflash EEP

1. Configure your keymap properly on TKG.
2. Turn keyboard into “Reflash EEP” mode. (Please refer to “Reflash Mode” for details)
3. Click “Burn .eep file” on TKG.
4. LED of Caps Lock will flash rapidly, and soon turn on. Simultaneously, the print job will disappear from the “What’s printing” dialog.

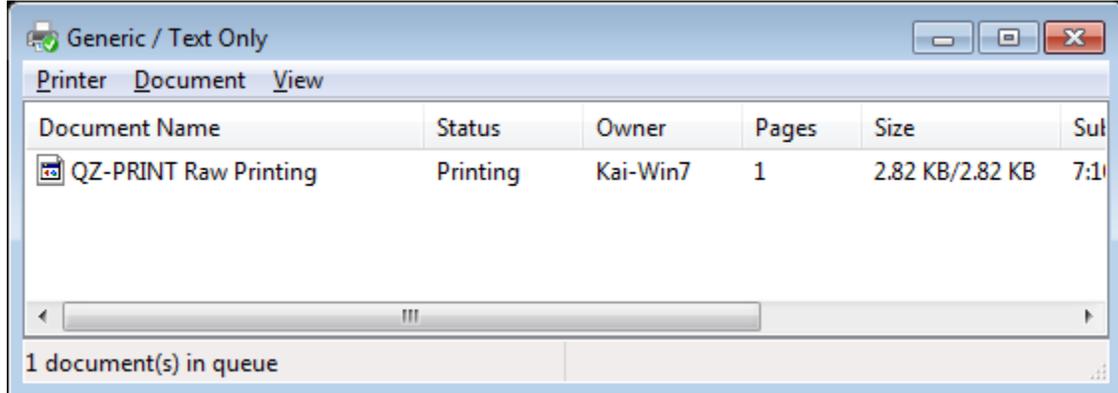


Figure 9: Screenshot of what's printing dialog

5. Re-plug the usb cable. The keyboard will work with the new keymap now.

3.3.Reflash HEX

Please note that Red Scarf III is shipped with the latest firmware, so ordinary it's no need to reflash HEX.

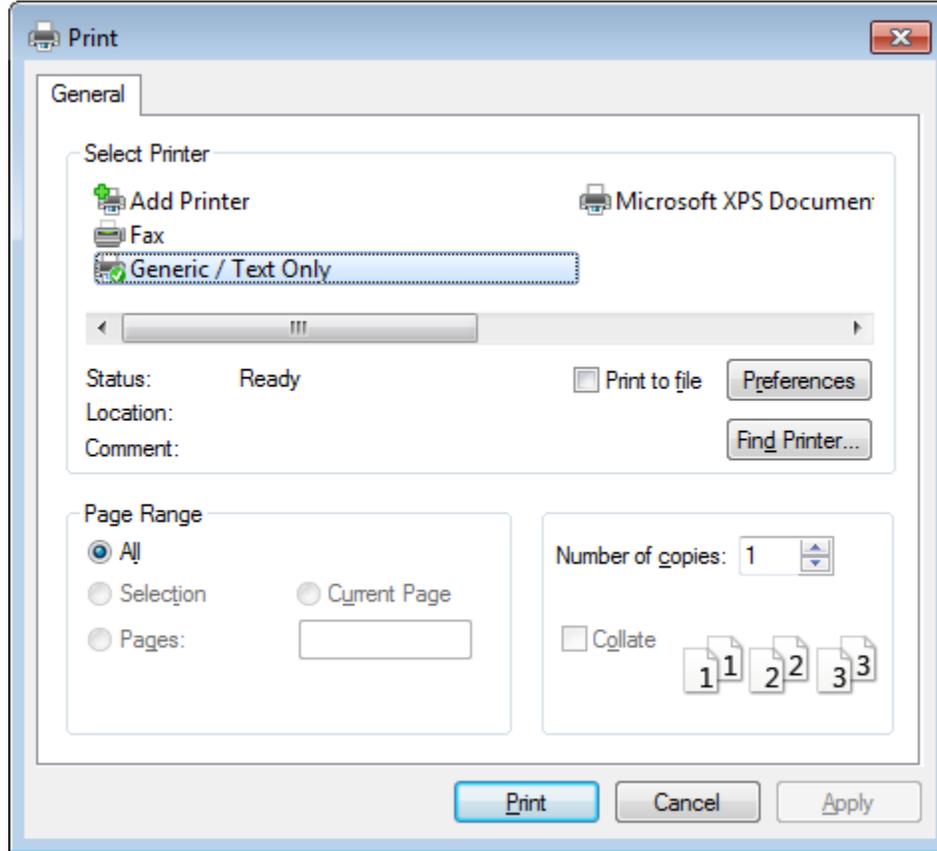
1. Make sure your keyboard is running in "Reflash HEX" mode. (Please refer to "Reflash Mode" for details)
2. Open "<http://www.enjoyclick.org/tkg/>" in browser, choose keyboard to "RedScarfIII".
3. Hold down shift key, then the label of "Burn .eep file" button will change to "Burn .hex file".
4. Click "Burn .hex file" button.
5. LEDs of Caps Lock and Num Lock will flash rapidly, and soon turn on. Simultaneously, the print job will disappear from the "What's printing" dialog.
6. Re-plug the usb cable. The keyboard will work with the new keymap now.

4. Offline Reflash

If you have problem with "Online Reflash" feature, don't worry. We also provide a "Offline Reflash" feature too.

4.1.Reflash EEP

1. Configure your keymap properly on TKG and click "Download .eep file".
2. Turn keyboard into "Reflash EEP" mode. (Please refer to "Reflash Mode" for details)
3. Open the downloaded .eep file with Notepad, and click "Menu>File>Print".
4. Select "Generic / Text Only" printer and click "Print".



5. LED of Caps Lock will flash rapidly, and soon turn on. Simultaneously, the print job will disappear from the “What’s printing” dialog.
6. Re-plug the usb cable. The keyboard will work with the new keymap now.

4.2.Reflash HEX

Please note that Red Scarf III is shipped with the latest firmware, so ordinary it’s no need to reflash HEX.

1. Make sure your keyboard is running in “Reflash HEX” mode. (Please refer to “Reflash Mode” for details)
2. Open .hex file with Notepad, and click “Menu>File>Print”.
3. Select “Generic / Text Only” printer and click “Print”.
4. LEDs of Caps Lock and Num Lock will flash rapidly, and soon turn on. Simultaneously, the print job will disappear from the “What’s printing” dialog.
5. Re-plug the usb cable. The keyboard will work with the new keymap now.

5. FAQ

1. If you failed on installing device driver of bootloader, please confirm if the “Print Spooler” is stopped. If stopped, please start it and try again.
2. Changing Red Scarf III to another usb port and turn it into bootloader mode will cause OS recognize it as a duplicated printer. Remove all printers and re-add one can make “Online Reflash” working again.
3. If you failed on “Offline Reflash” repeatedly, please try to open “Printer properties” and uncheck “Enable advanced printing features”.

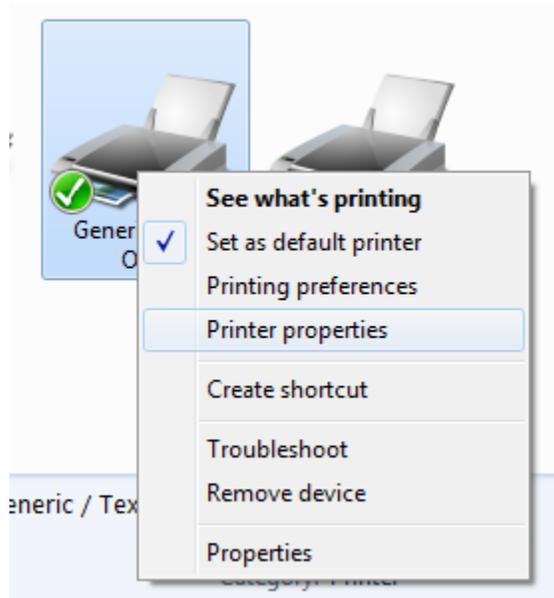


Figure 10: Screenshot of context menu of printer

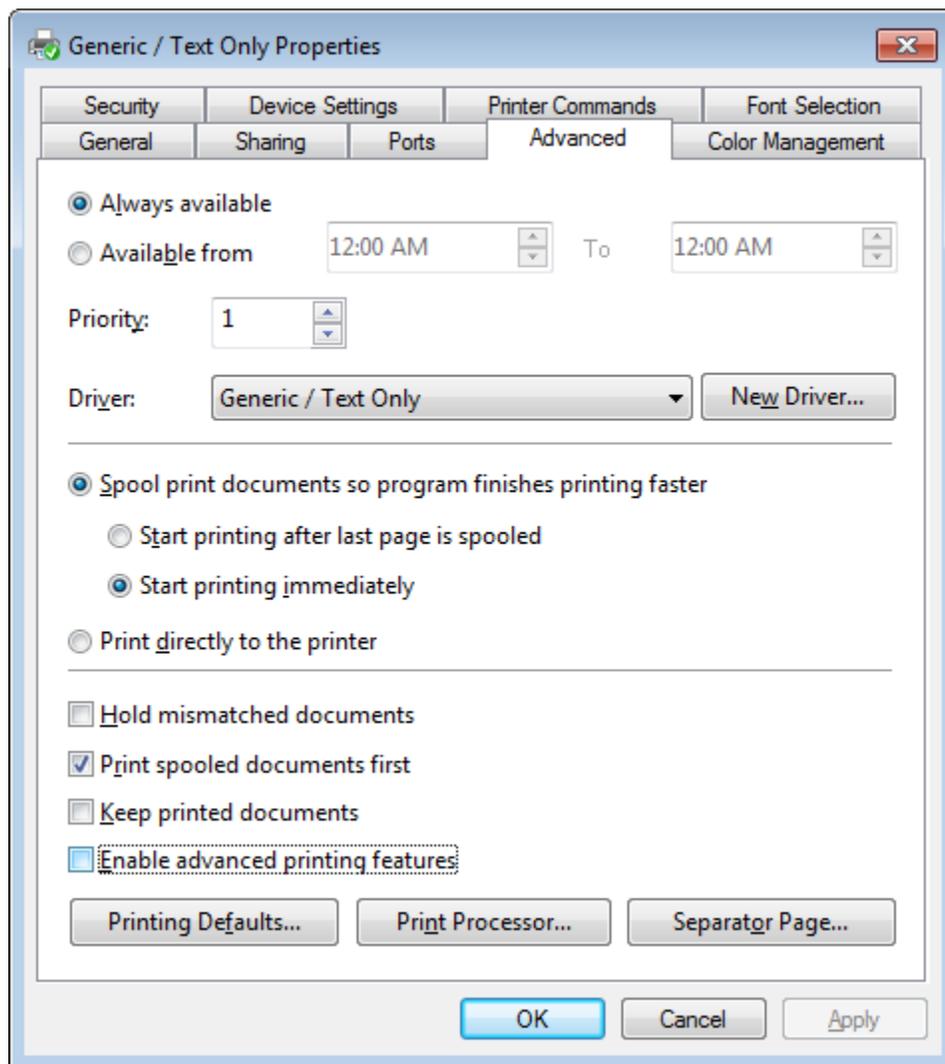


Figure 11: Screenshot of Advanced tab of printer properties