swissbit®

User Manual

Swissbit iShield Camera Card Tool (iCCT)

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1. iShield Camera Card – an introduction

The Swissbit iShield camera card is a (micro)SD memory card which provides automatic encryption & access protection for all saved content, like photos and videos, recorded on generic cameras.
For details on the iShield camera card, please refer to the product fact sheet and product data sheet [available from 11.1.1].

This guide describes how to setup and use the card with the corresponding software tool, the iShield Camera Card Tool (iCCT).

When using the iShield Camera Card Tool, we assume that you agree with the license terms. The license can be found in the installation directory of the application.

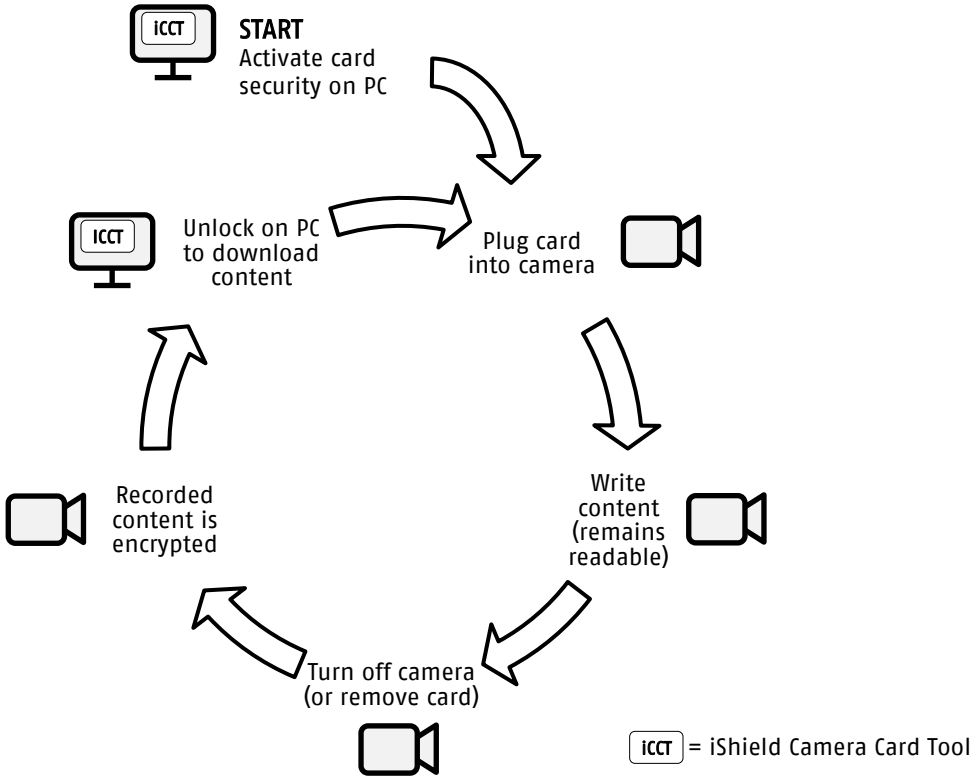
2. Prerequisites

To get started, you should have the following at hand:

- One Swissbit iShield Camera microSD card
- A PC to run iCCT – Windows 10, MacOS and Linux are supported. You can download the tools from [11.1.1]
- One camera of your choice which supports (micro)SD cards in SD standard format (FAT32)

The camera needs to support a (micro)SD card with up to 32GB, formatted according to SD standard in FAT32. The iShield Camera card is factory pre-formatted correctly. Note that the iShield camera card does not support other file systems (e.g. NTFS, exFAT...) – trying to apply such file systems will be rejected by the card during the activation process. Also, please note that formatting the card is only possible when the protection has not yet been activated.

3. Usage flow of iShield Camera card



To start using the card, plug it into a PC and use the iShield Camera Card Tool (iCCT) to set a PIN and activate the security. After that, you can start using the card in the camera of your choice. All written files will remain visible and readable until the card is being power-cycled – either by shutting the camera off and on again, or by removing the card (which is generally not recommendable during camera operation – data loss may occur).
After the power cycle, all previously recorded data will be access protected. Note that the file system (FAT) is still readable, meaning that you can still see file names, recording dates etc., but strictly all access to the file content is being prohibited until you have authenticated.
Deletion of files is possible also without authentication, allowing loop recording e.g. in a dashcam.
In order to access and download the card's content, plug the iShield Camera card into your PC and use the iCCT software to authenticate (using your PIN). Then your card can be plugged back into your camera for further recording.

4. Initial setup – activating security

In factory new condition, the iShield Camera Card is working like a regular memory card – no data protection features are active.
In order to activate the security, plug in the card into a PC and start iCCT. The tool will ask you to plug in the iShield Camera Card if it is not yet connected. After being connected, the card will show up in iCCT:

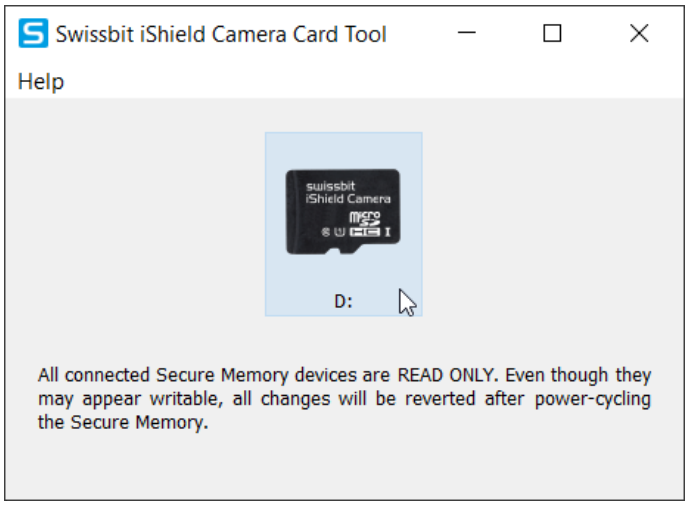


Fig. 1 iCCT started up, with iShield Camera Card connected

Click on the product picture to start the activation process. On the next screen, hit "activate":

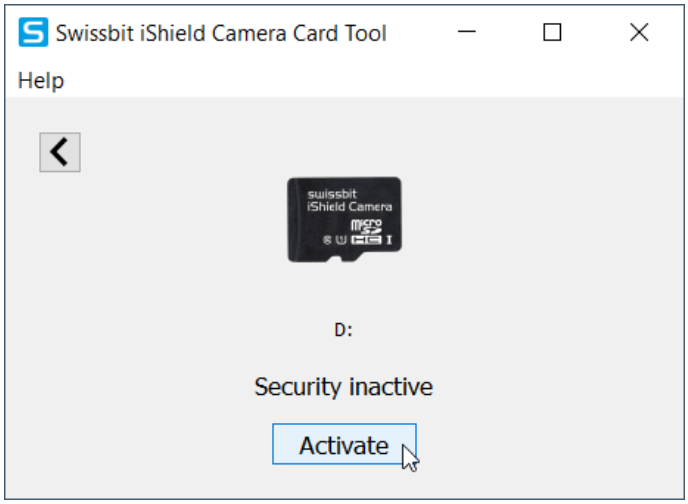


Fig. 2 Starting the security activation

The wizard will inform you that security activation will delete all data currently present on the memory card. If there is anything on the card that you still want to save, cancel the process here. Otherwise, hit "continue".
In the next step, you will be asked to set & confirm your PIN. The PIN also supports alphanumeric characters and special characters.

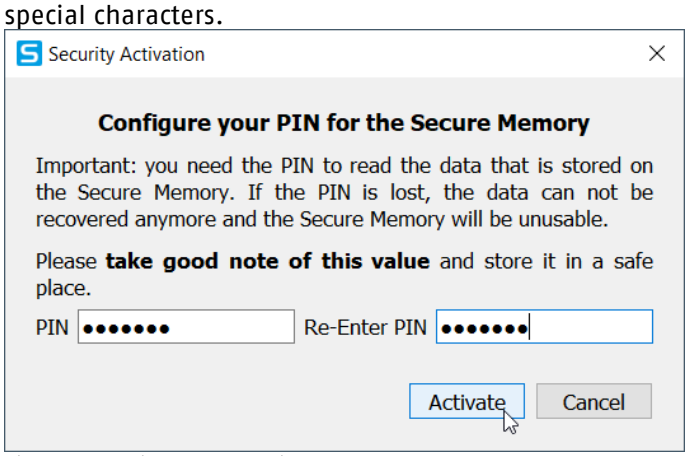


Fig. 3 Setting the security PIN

Please take the advice in the wizard seriously – without the PIN, you will no longer be able to access data recorded on the secured memory card. In addition, you will need the same PIN to deactivate security or reset the card.

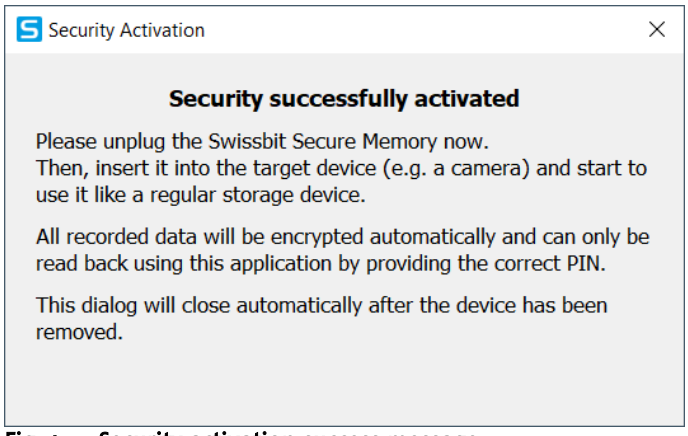


Fig. 4 Security activation success message

After the security has been activated, you will see the success dialog shown above. Just unplug the secured memory card and the dialog will close automatically.

5. Using the card with activated security

After activating the card's security, you can simply plug it into your camera and start using it normally. The card has a FAT32 format according to the SDA standard, which is directly supported by many camera models. For recommended measures in case a camera does not support the standard FAT32 format, please refer to chapter 9.1 All recorded data will remain readable during the same session (before power cycle) of the memory card. In the next session (after power cycle), all recorded data is only visible on meta level (file names etc.) – to access the content, follow the instructions in the next chapter.

6. Accessing the protected data from the card

Start iCCT on your PC and connect the iShield Camera Card. Click on the product picture (see Fig. 1) to start accessing the protected data.

In the next dialog, you can choose to view files (card will be in read-only mode) or to download all files to a selected folder and wipe the card (backup). Both operations will ask for the PIN that you set during the initial setup.

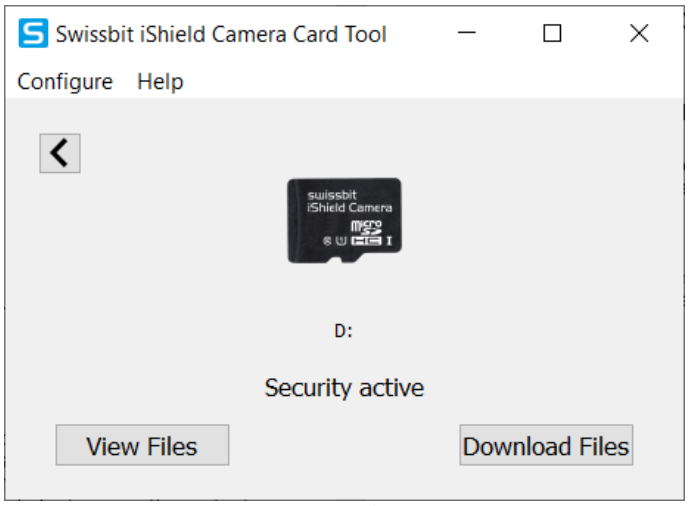


Fig. 5 View Files or Download&Wipe

7. Manage the card – deactivate security, factory reset, change PIN

In the same dialog that is used for accessing protected data, you can also manage you card's security.
Start iCCT on your PC and connect the iShield Camera Card. Click on the product picture (see Fig. 1) and then on the menu option "Configure" to show up the menu options:

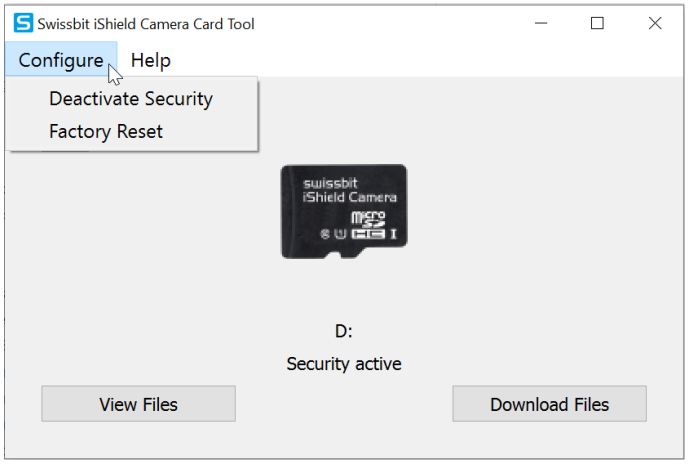


Fig. 6 Change PIN, Deactivate Security, and Factory reset options

Deactivate Security allows you to turn your memory card into a "regular", not secured device. The content of the card will be kept when deactivating security.

Factory Reset allows you to restore the factory default (no security active) of the card. The factory reset can be performed without a PIN, e.g. in case the PIN has been lost.
Please note: All data will be *irrecoverably lost* during a factory reset.

Change PIN is performed by "Deactivate Security" firstly and then activating security with a new PIN. Please back up the content on the card before changing the PIN, because security activation will delete all data currently present on the memory card.

8. Re-initializing the card (e.g. before switching camera models)

If you intend to use the iShield camera card in a different camera model than it has been used with before, you need to re-initialize the card first. In order to do this, please deactivate security (see. ch. 7) and copy all files that you want to keep. Then, please use the official SD card formatter tool from SD association to format the card – it can be downloaded for free for Windows & Mac (download link: see 11.1.2).
After formatting, you can re-initialize your iShield card (see. ch. 4) and start using it in the new camera.

9. Resolving issues

9.1 Re-formatting in camera required

Some camera models require a special file system, which usually results in a "card error" or request to "format card" after it has been inserted into the camera with activated security (according ch. 4).

In this case, please try the following procedure:

1. Deactivate security (see ch. 7)
2. Plug in the card into your camera & format it in the camera
3. Plug the card into your PC and try to activate security (ch. 4)

If you receive a success message, your camera is compatible with the iShield security features and you can now use the card in your camera with all content being automatically protected.

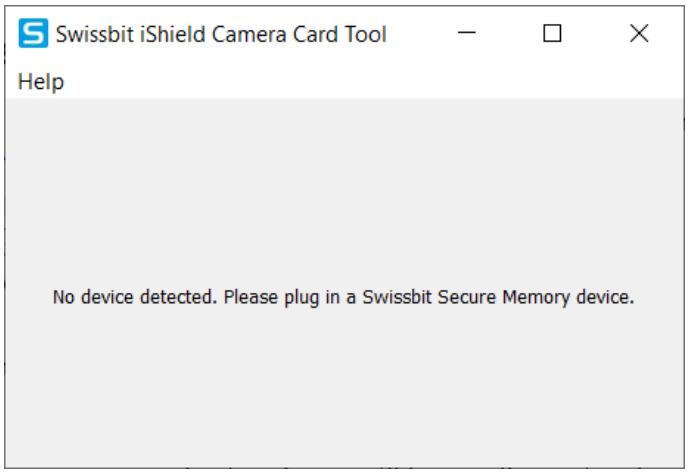


Fig. 7 No device detected after re-formatting in camera

In case the iShield card does not show up in iCCT after re-formatting in your camera (see Fig. 7), unfortunately the file system is incompatible with iShield security (e.g. formatted as NTFS or exFAT).

You can still use the card as a regular memory card in your camera without the security features. If you would like to try the iShield card in a different camera, please format the card with SD Formatter (see ch. 8) before re-activating the security features in iCCT.

Please report your used camera make & model to iShield-support@swissbit.com.
We will use this information to improve the product in future generations.

9.2 Incompatible camera

In case you receive an error message about an incompatible recording system (Fig. 8) after the iShield card has been used, your camera is unfortunately incompatible with the iShield camera card's security features. Please deactivate security by selecting "Configure – deactivate security". You can still use the card as a regular memory card in your camera.

Please report your used camera make & model to iShield-support@swissbit.com.
We will use this information to improve the product in future generations.

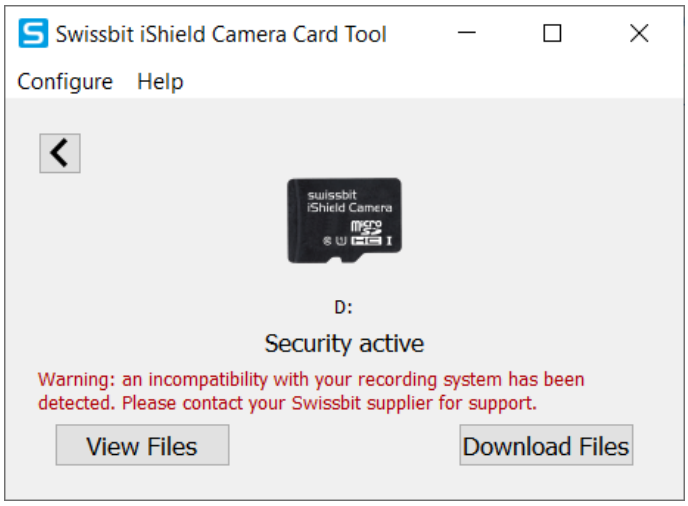


Fig. 8 Incompatible camera warning message

10. Command Line Tool

Besides the iCCT, the card can also be managed via the command line tool. On Linux-Armhf, the GUI application is not supported so the CLI needs to be used. The command line tool can also be downloaded from [11.1.1]. Please keep the iCCT terminated while using the command line tool. Otherwise unintended behaviors of the card may occur. For detailed information of the usage of the command line tool consult the help with the following command:

iCCTcli --help

11. Appendix

11.1 Links

11.1.1 Swissbit product landing page with Downloads

https://www.swissbit.com/en/products/security-products/ishield-camera/

11.1.2 SD Card Formatter Download (recommended official tool from SD association)

https://www.sdcard.org/downloads/formatter/

12. Document History

Version	Updated on	Updated by	Short description
1.0	Mar 2nd, 2021	Swissbit AG	First release
1.1	June 15th, 2021	Swissbit AG	Added support for MacOS & Linux
1.2	August 20.2021	Swissbit AG	Changed info about "Change PIN"
1.3	November 23rd, 2021	Swissbit AG	Added info on command line tool