

# CYPHER

## USER MANUAL

Android Application



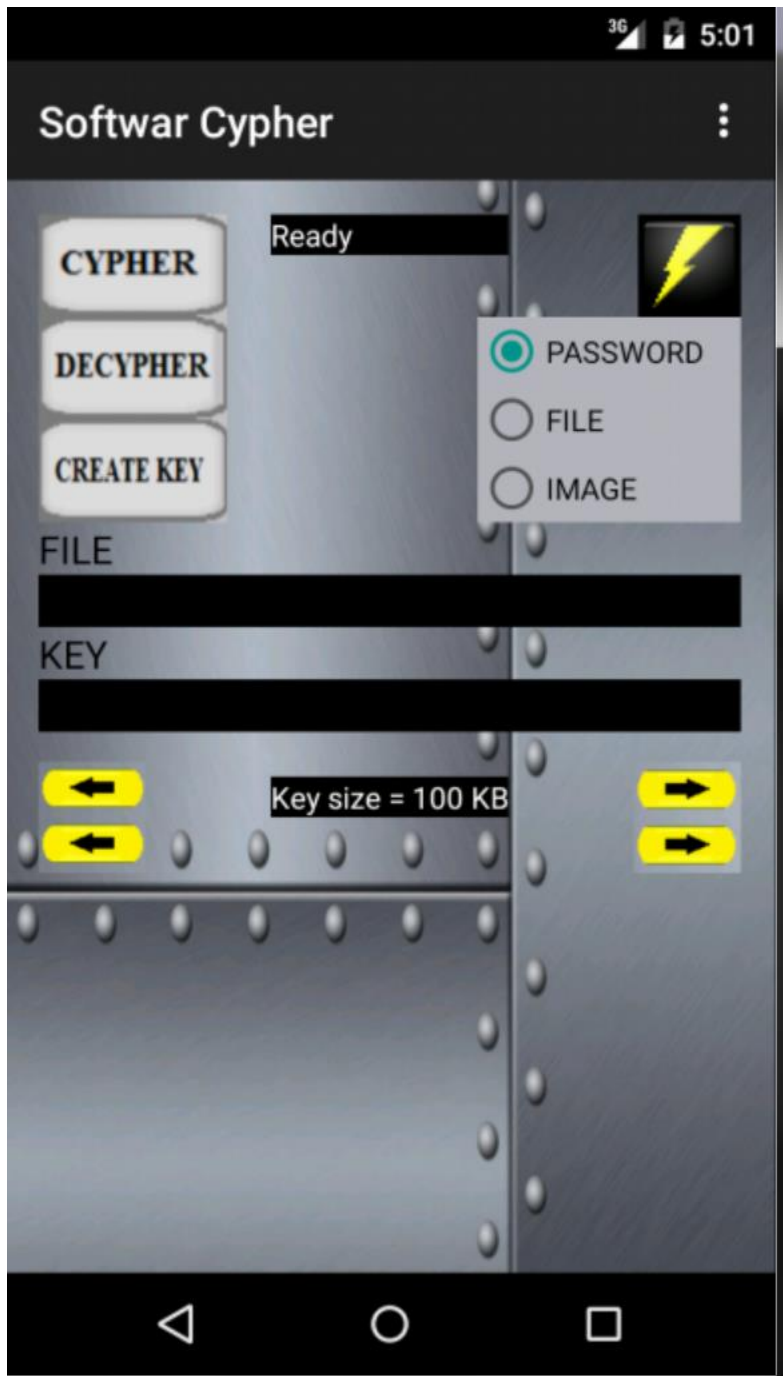
**SOFTWARE**

**SOFTWARE INC.  
PO Box 325  
Manquin, VA 23106**

**Information Security**

Software Cypher © 2015 Software Inc. all rights reserved.

CYPHER android personal security software.



The Cypher utility is designed to cypher and de-cypher any data file on an android system phone using key files or passwords created by the user. The android application is fully compatible with the Windows Cypher PC software. All data cyphered on the android application can be de-cyphered by the Windows Cypher software. All data cyphered by the Windows Cypher software can be de-cyphered by the android application.

**Password – First level security:**

Cypher and de-cypher using a personal password of no less than 6 characters.

**KEY FILES:**

Key files are as their name implies keys to lock and unlock any selected data. Key files come in 3 levels of security described below.

**User Key File – Second level security:**

Any file to be used as a key to cypher and de-cypher. The user selected key file can be any document, picture, music, text or work file. It is recommended that you do not use files that contain large amounts of repeating characters such as bitmap files. However, files that are compressed such as zip, jpeg, MP3 or other media files that have been compressed are acceptable. DO NOT pick a file that will change. Just as with a physical lock on a door, a key file must be the same used to cypher (lock) a file in order to successfully de-cypher (unlock) the same data.

**Crypto Key File - Third level security:**

This is a key file created by the Cypher key maker that utilizes the Pseudo-Random Number Generator (PRNG) to create a very large set of random numbers. The Crypto Key maker utilizes several system features such as time, key strokes, and many other variables to randomly seed and create large keys using a mathematical algorithm. The crypto key file is considered to be superior to the User key in that it is much more random than regular user data files.

**IMAGE Key File – Highest level security:**

The image key is created by using your android camera equipped phone to sample light in three basic colors – red, green and blue. This system is known as a True Random Number Generator (TRNG) because the key is generated by the light recorded by your camera. The image key is the most secure because it is created using quantum physics by recording the values of photons electronically. The image key is similar in performance to keys generated by sensors inside Atomic clocks that detect radioactivity.

**CYPHER Command:**

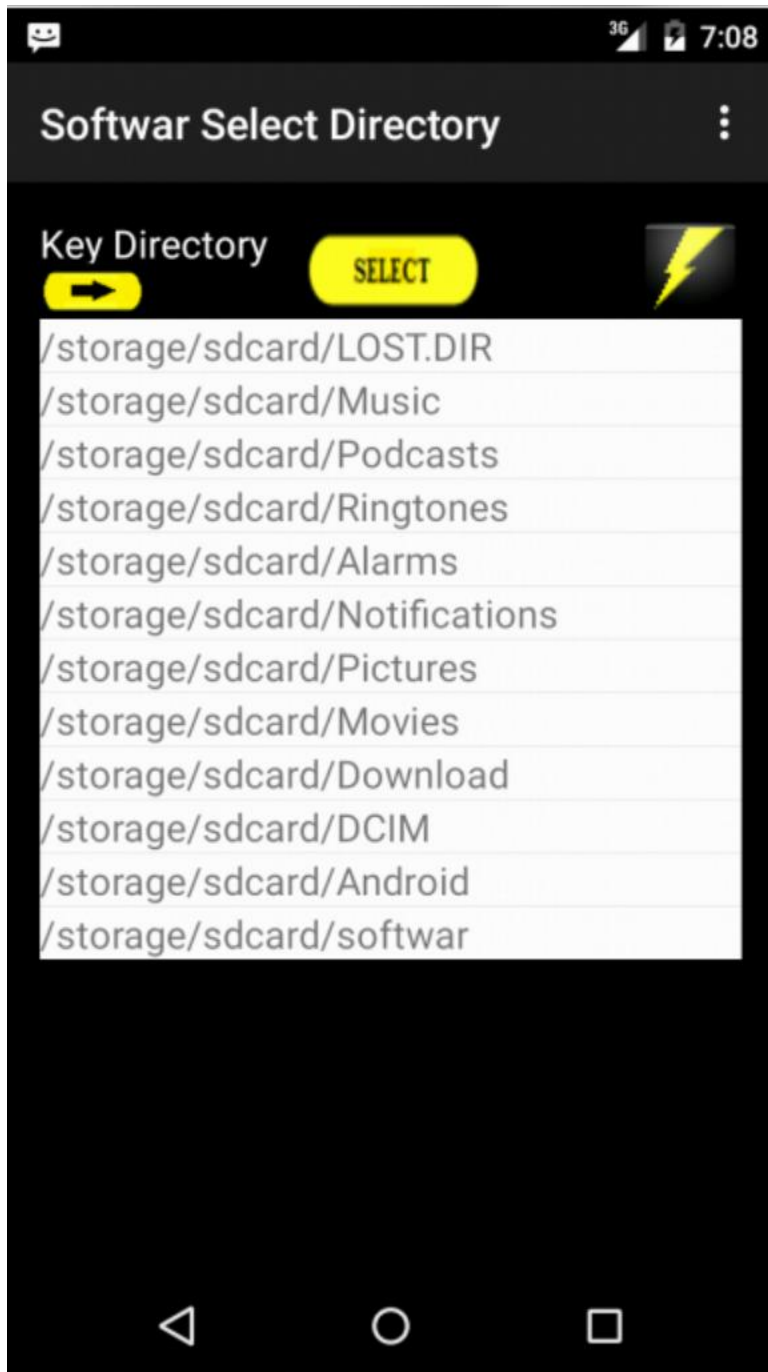
Select the method to cypher a file using the radio buttons on the main menu:


Password – enter a password in the space provided under the PASSWORD radio button.

File – any file selected on the system or a Crypto Key file created with the Pseudo-Random Number Generator (PRNG).

Image Key file - key file created with the cell phone camera True Random Number Generator (TRNG).


Select the file you wish to cypher by first using the directory selection menu.



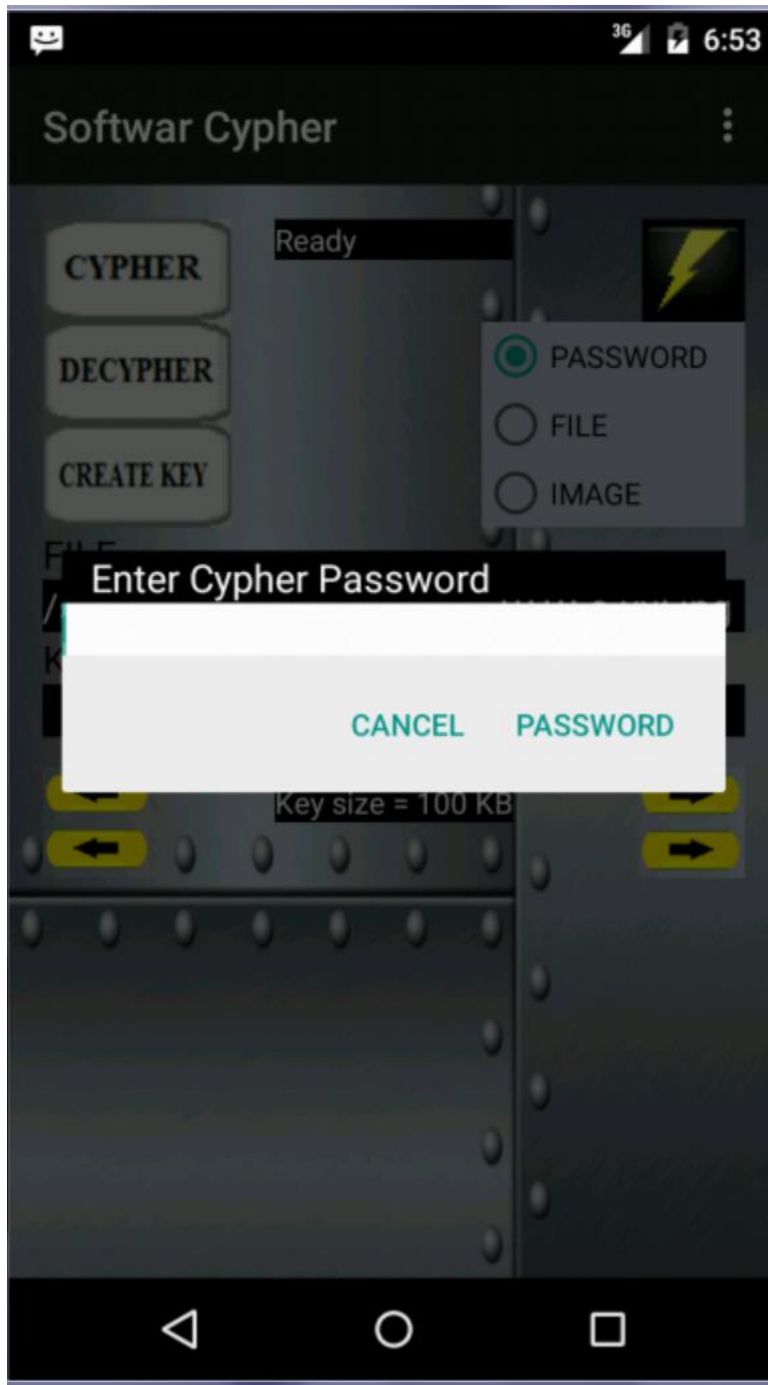
To view sub directories tap a directory entry and then hit the  arrow key.

Highlight a directory and hit the  select button to list the files.

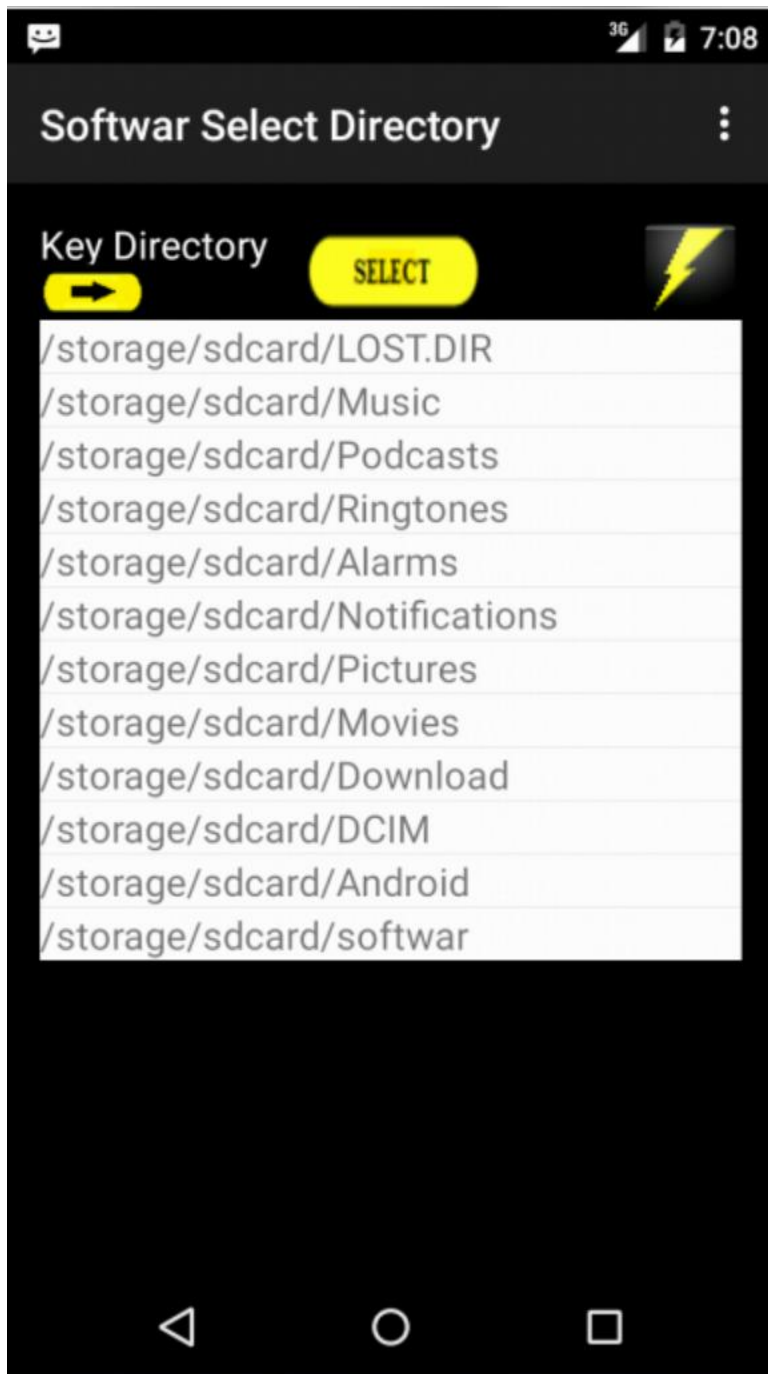



To select the file simply tap it to highlight the file name and hit the  button.

If you selected a password method to cypher then you will need to enter the password.

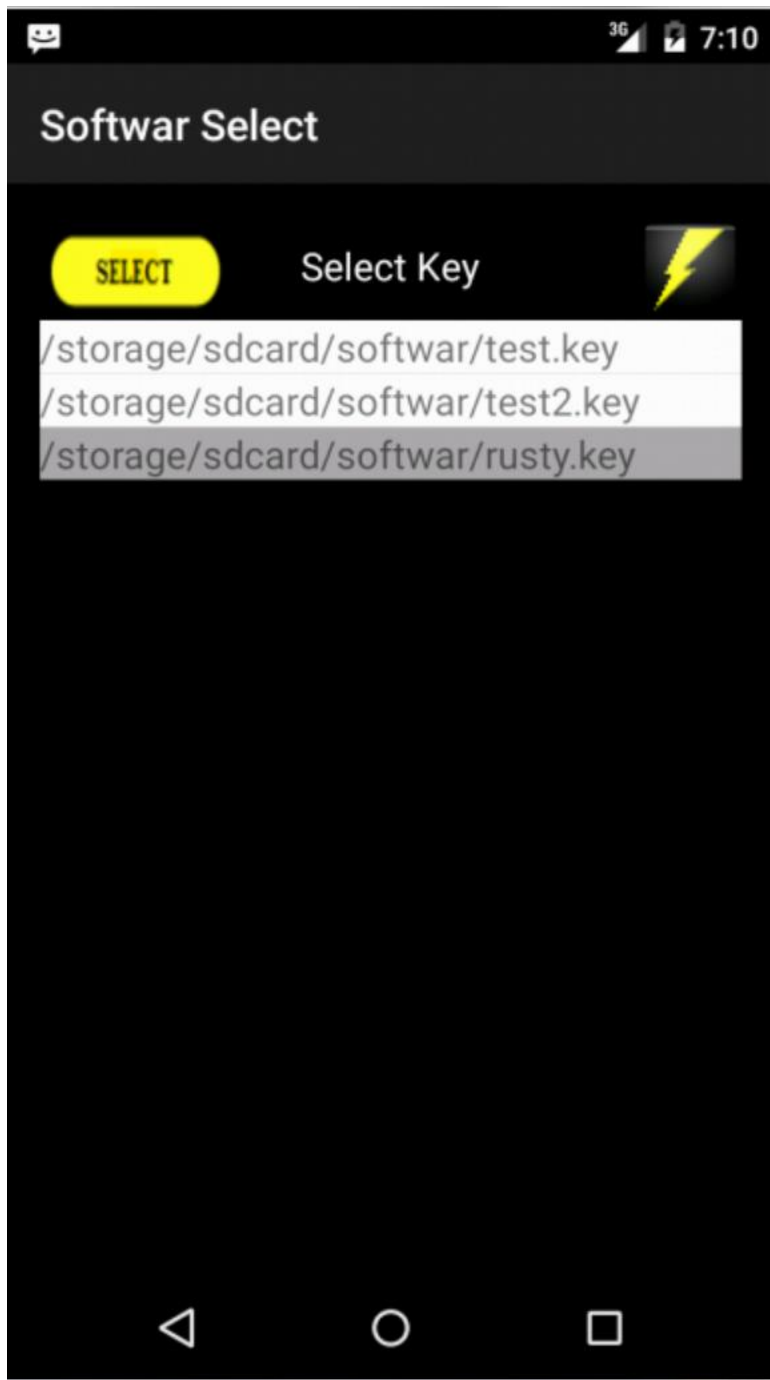



If you selected a key file method to cypher then you will need to select the key from the Key Directory and Key selection menus.



To view sub directories tap a directory entry and then hit the  arrow key.

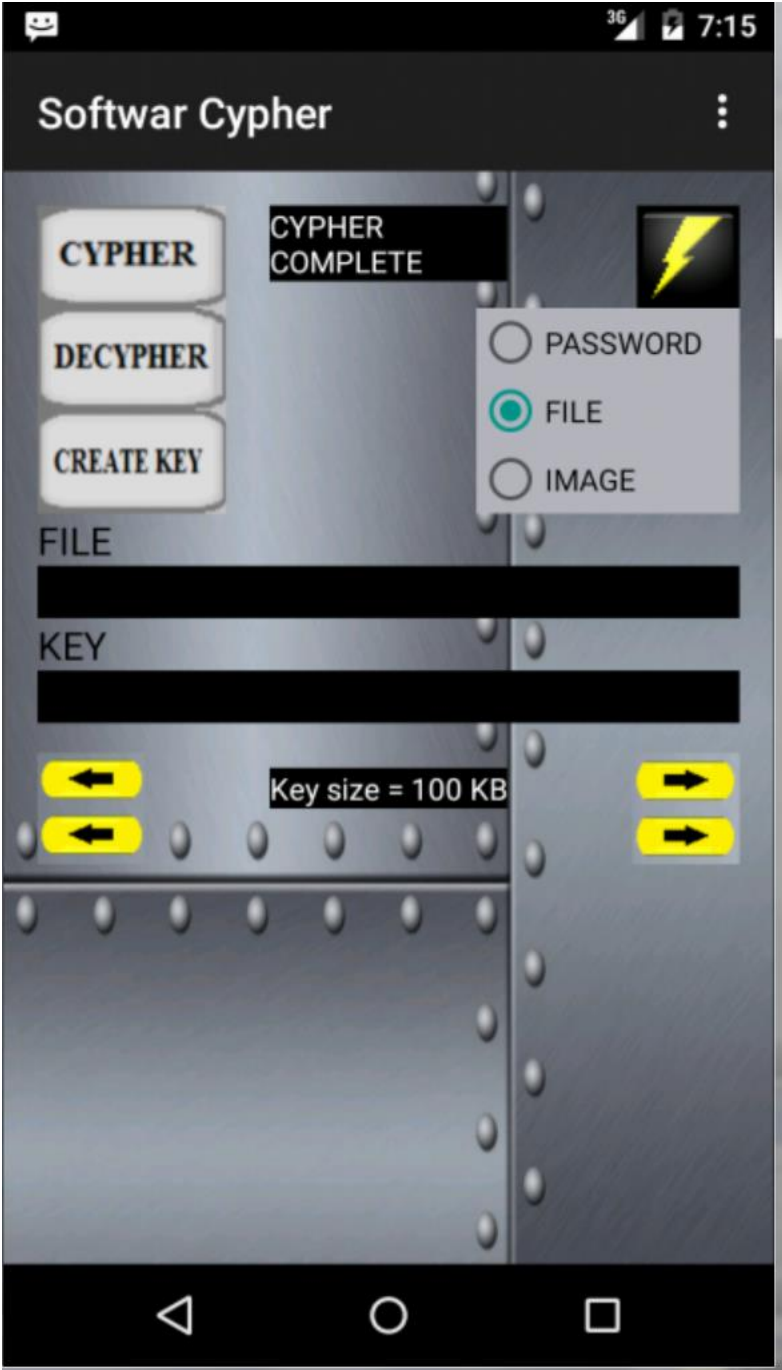
Highlight a directory and hit the  select button to list the key files.



To select the key file simply tap it to highlight the key file name and hit the  button.



The cyphering process will display a progress status message at the top of the main menu. Once the process is completed the status will note CYPHER COMPLETE.



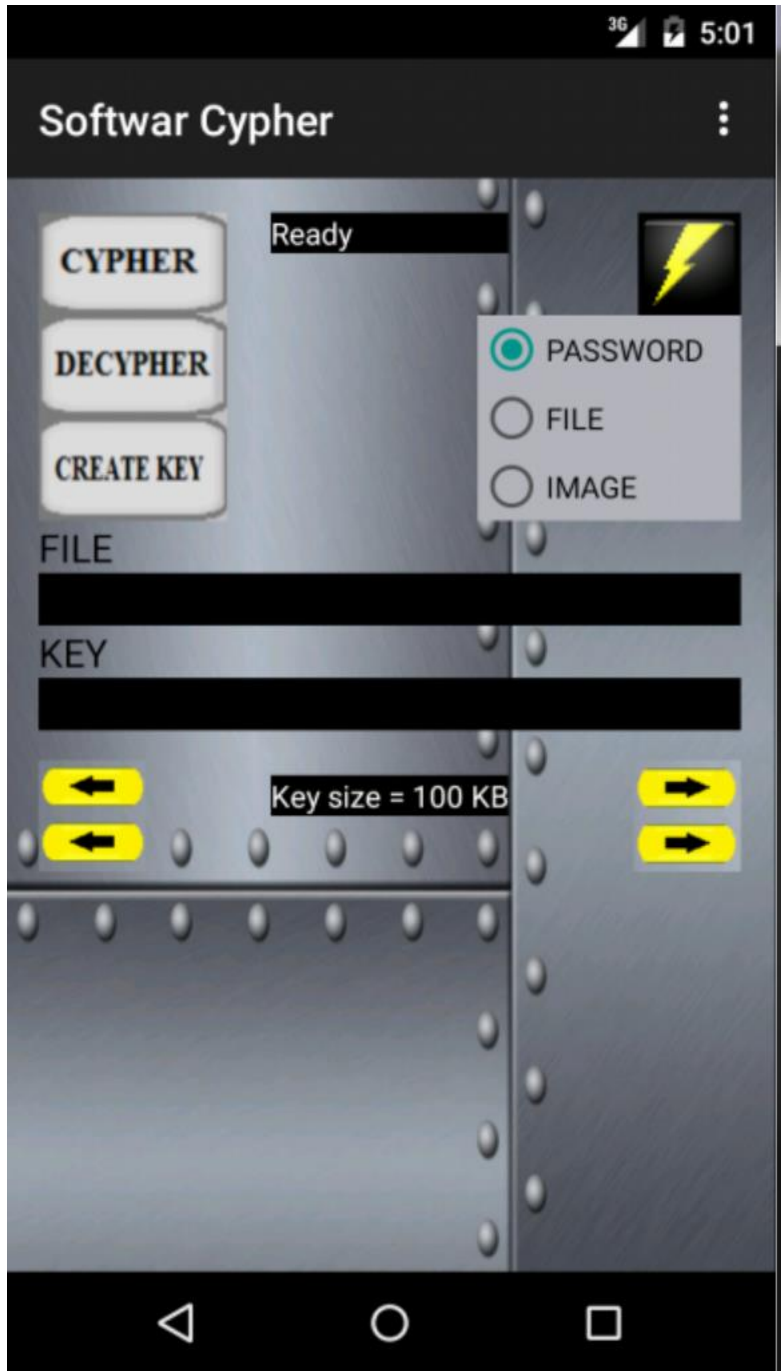
### DE-CYPHER Command:

Select the method to cypher a file using the radio buttons on the main menu:

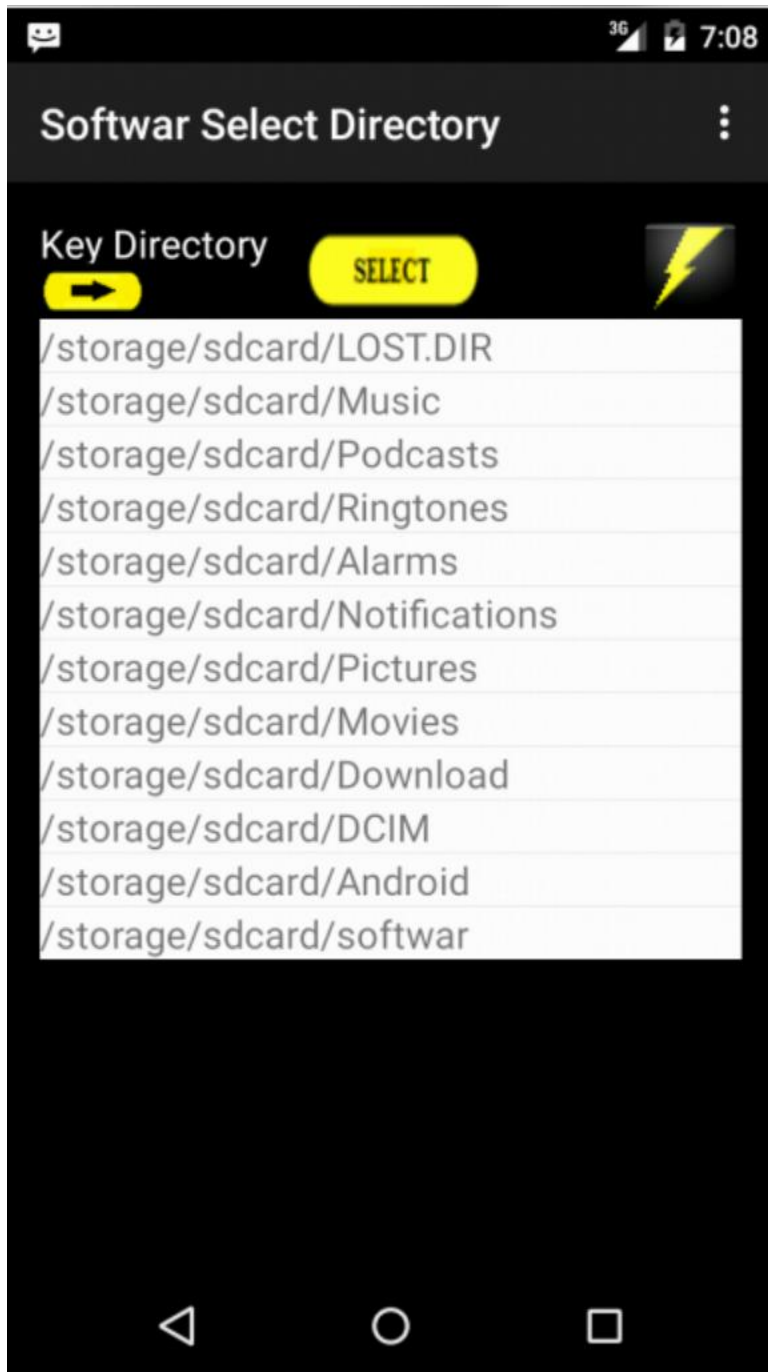
Password – enter a password in the space provided under the PASSWORD radio button.


File – any file selected on the system or a Crypto Key file created with the Pseudo-Random Number Generator (PRNG).

Image Key file - key file created with the cell phone camera True Random Number Generator (TRNG).




Select the file you wish to de- cypher by first using the directory selection menu.



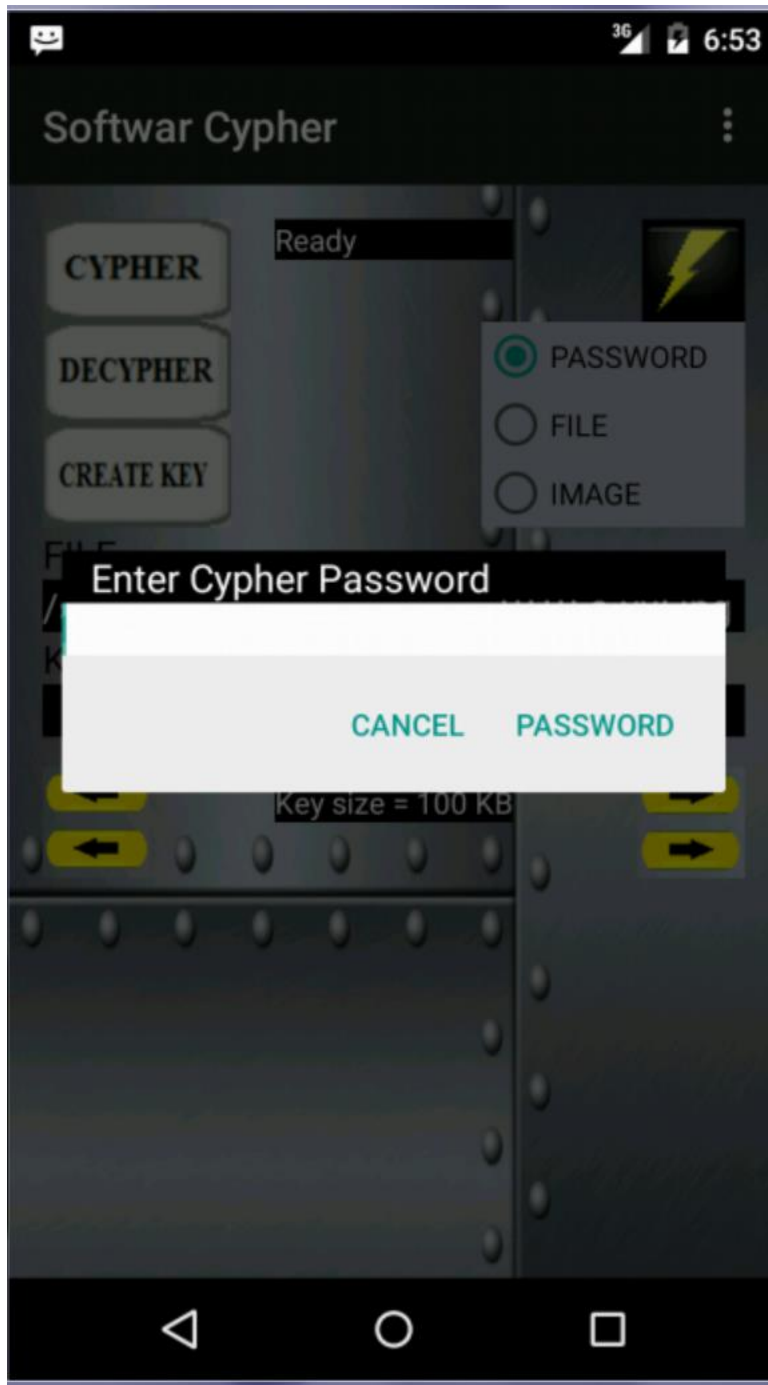
To view sub directories tap a directory entry and then hit the  arrow key.

Highlight a directory and hit the  select button to list the files.

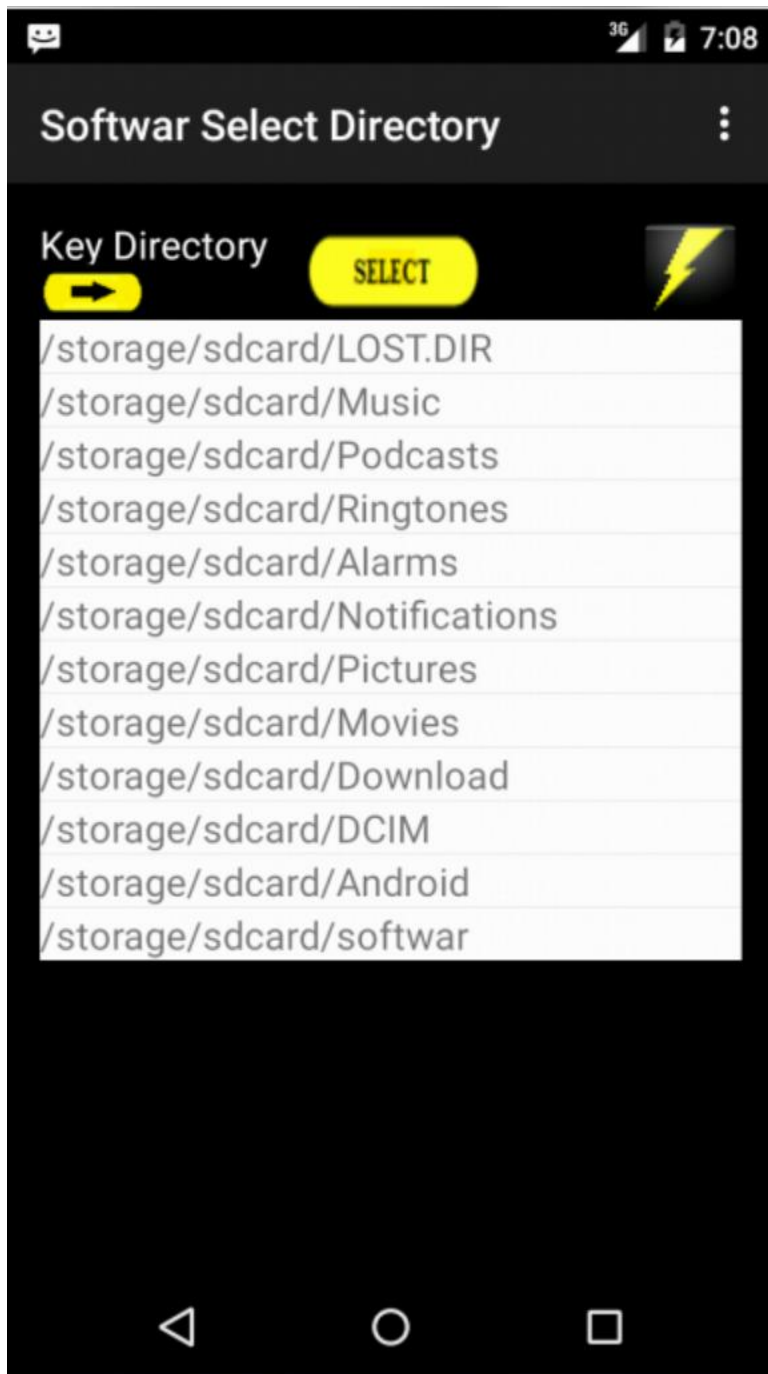



To select the file simply tap it to highlight the file name and hit the  button.

If you selected a password method to cypher then you will need to enter the password.

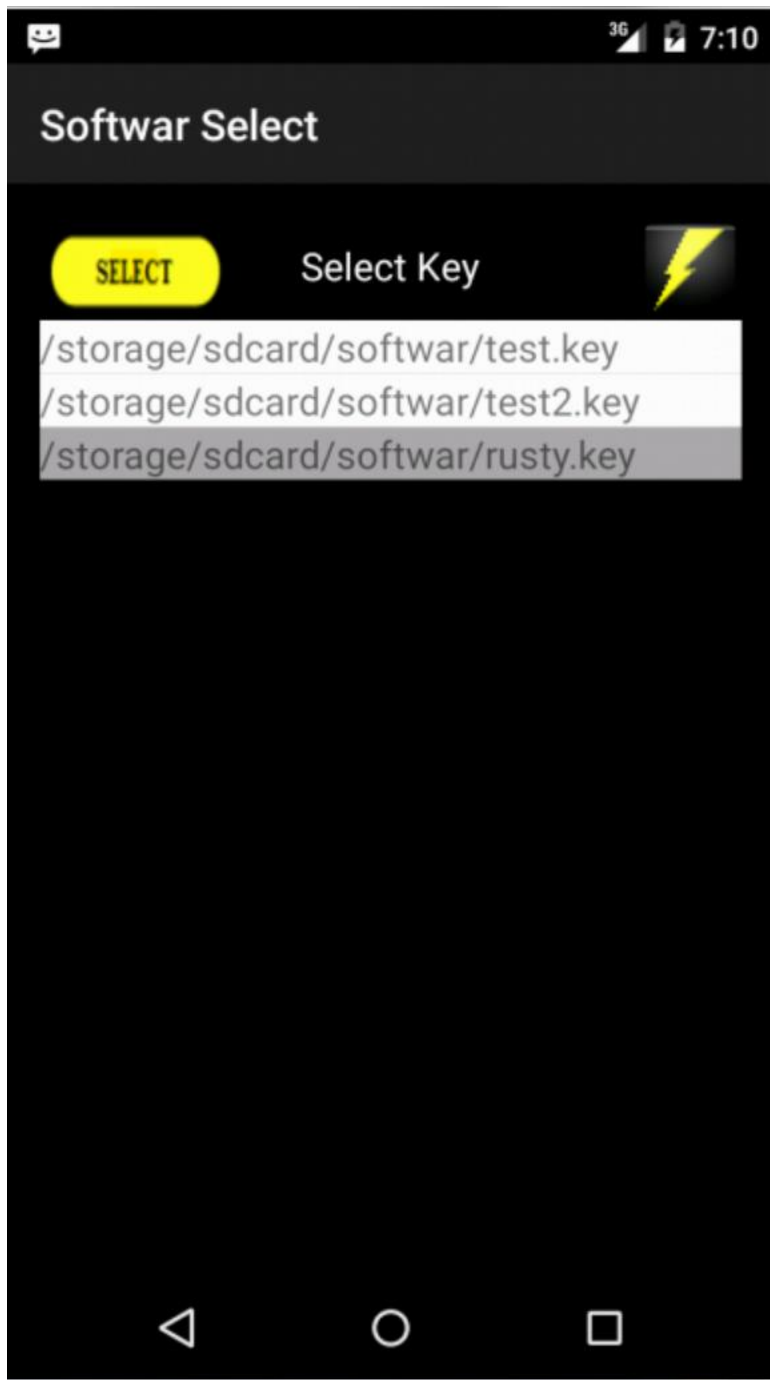



If you selected a key file method to de-cypher then you will need to select the key from the Key Directory and Key selection menus.



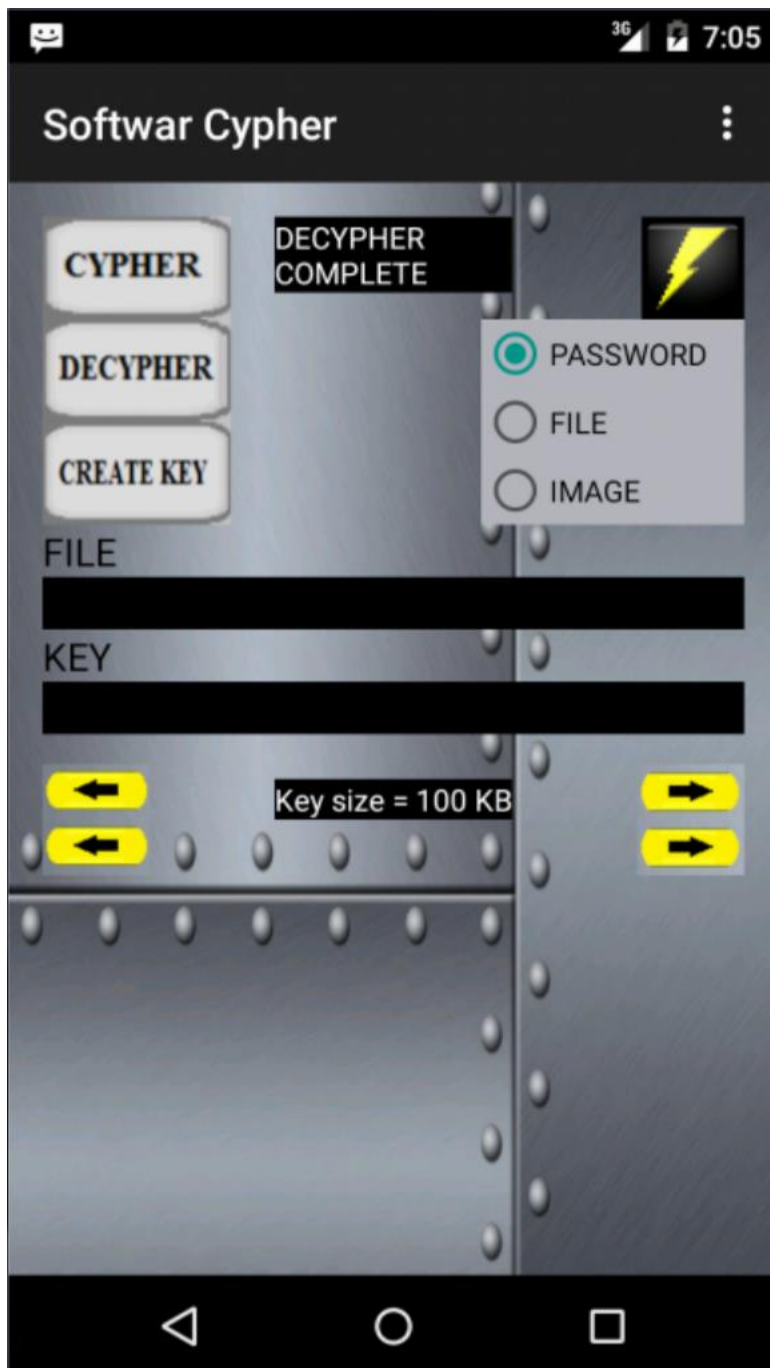
To view sub directories tap a directory entry and then hit the  arrow key.

Highlight a directory and hit the  select button to list the key files.



To select the key file simply tap it to highlight the key file name and hit the  button.

The de-cyphering process will display with a progress bar at the bottom of the main menu. Once the process is completed the status will note DECYPHER COMPLETE.

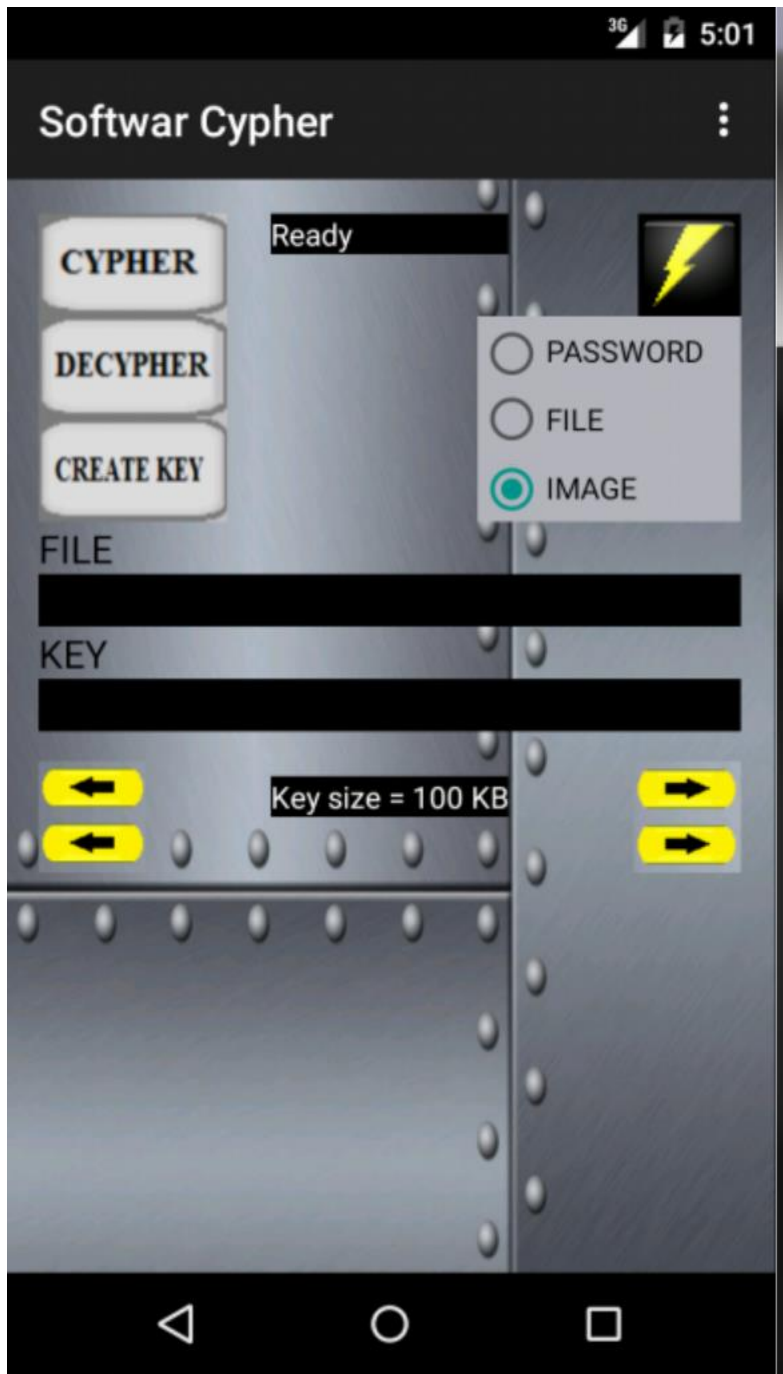




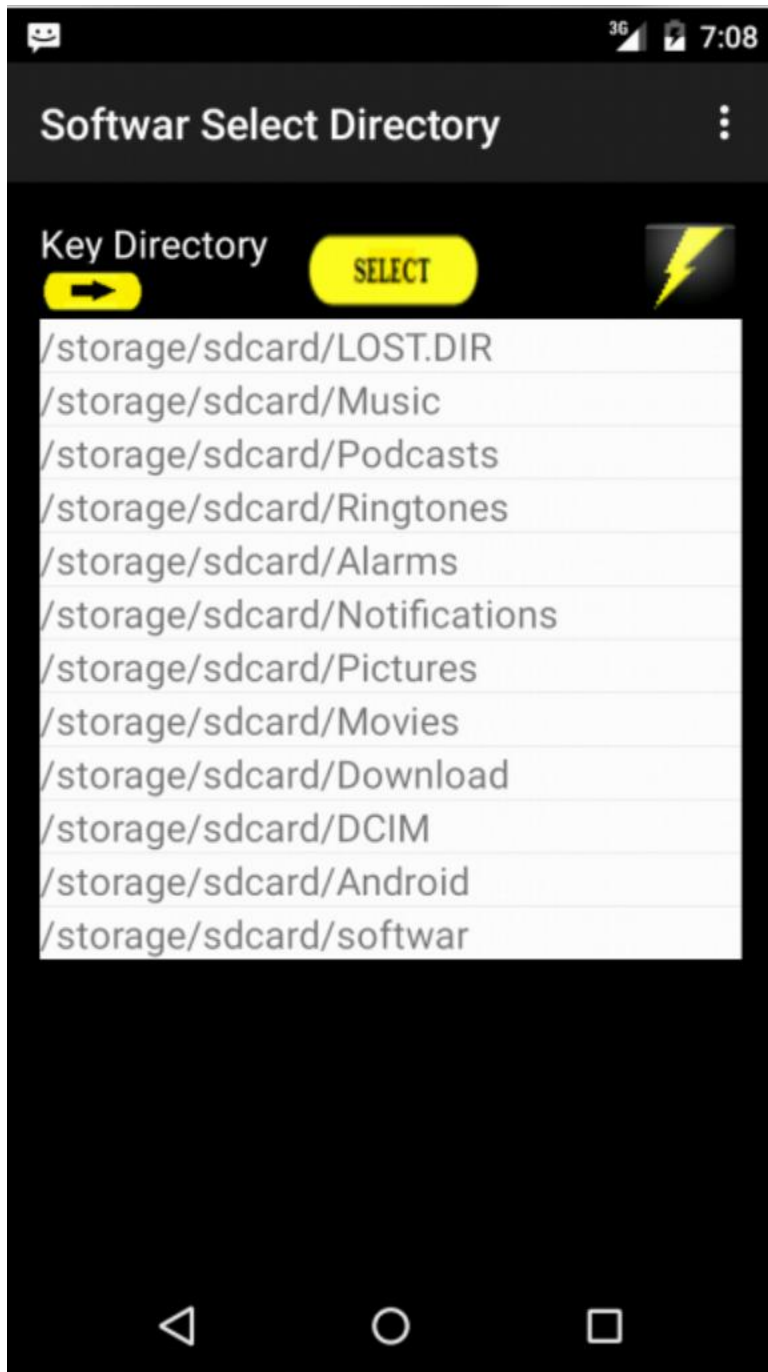
**CREATE KEY:**



There are two types of keys that you can make with cypher; File Keys and Image Keys. Select the type of key you wish to create using the File Key or Image Key File radio buttons on the main menu. Cypher will create a key 100 Kbytes in size. The minimum size is 16 Kbytes and the maximum is 1000 K bytes. You can change the key size by using the arrow buttons located on

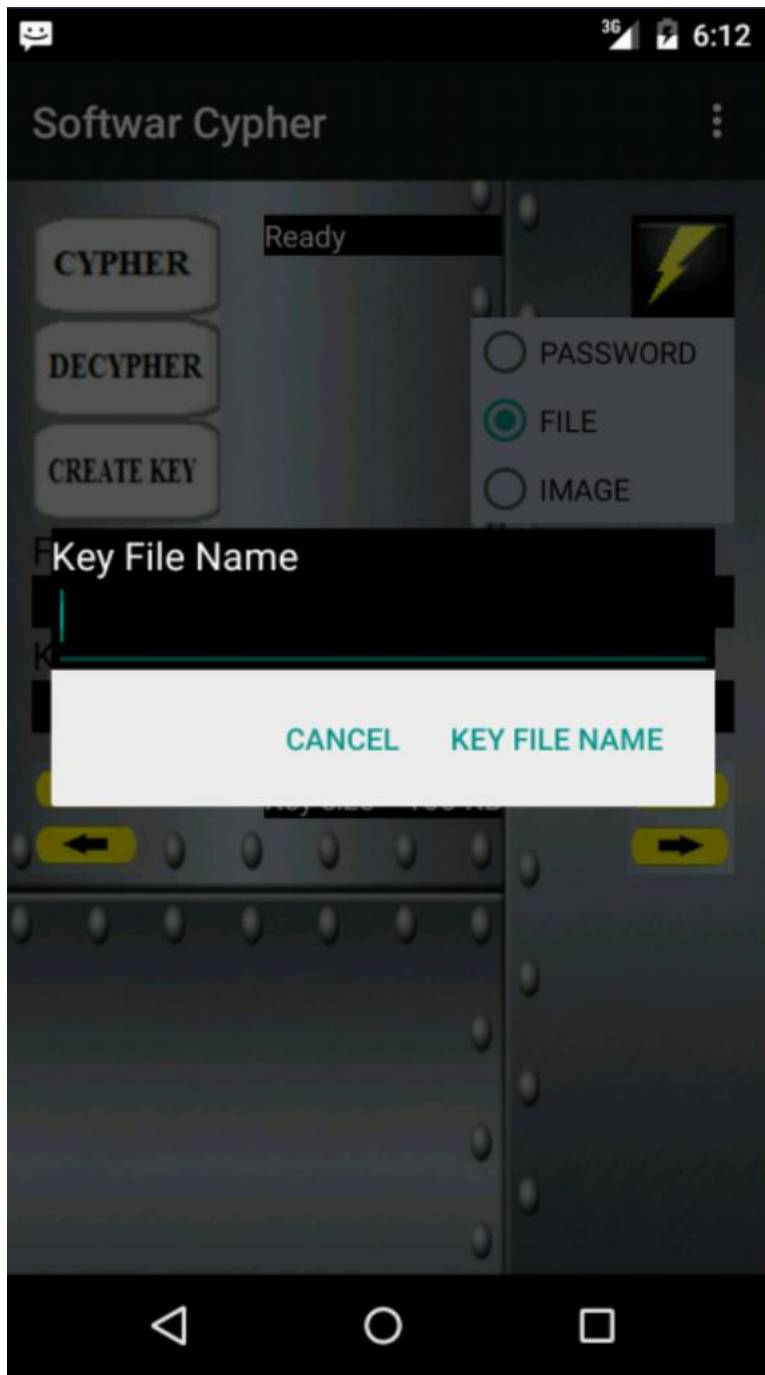
the main menu.  



Select a directory to store the key using the SELECT Directory menu.

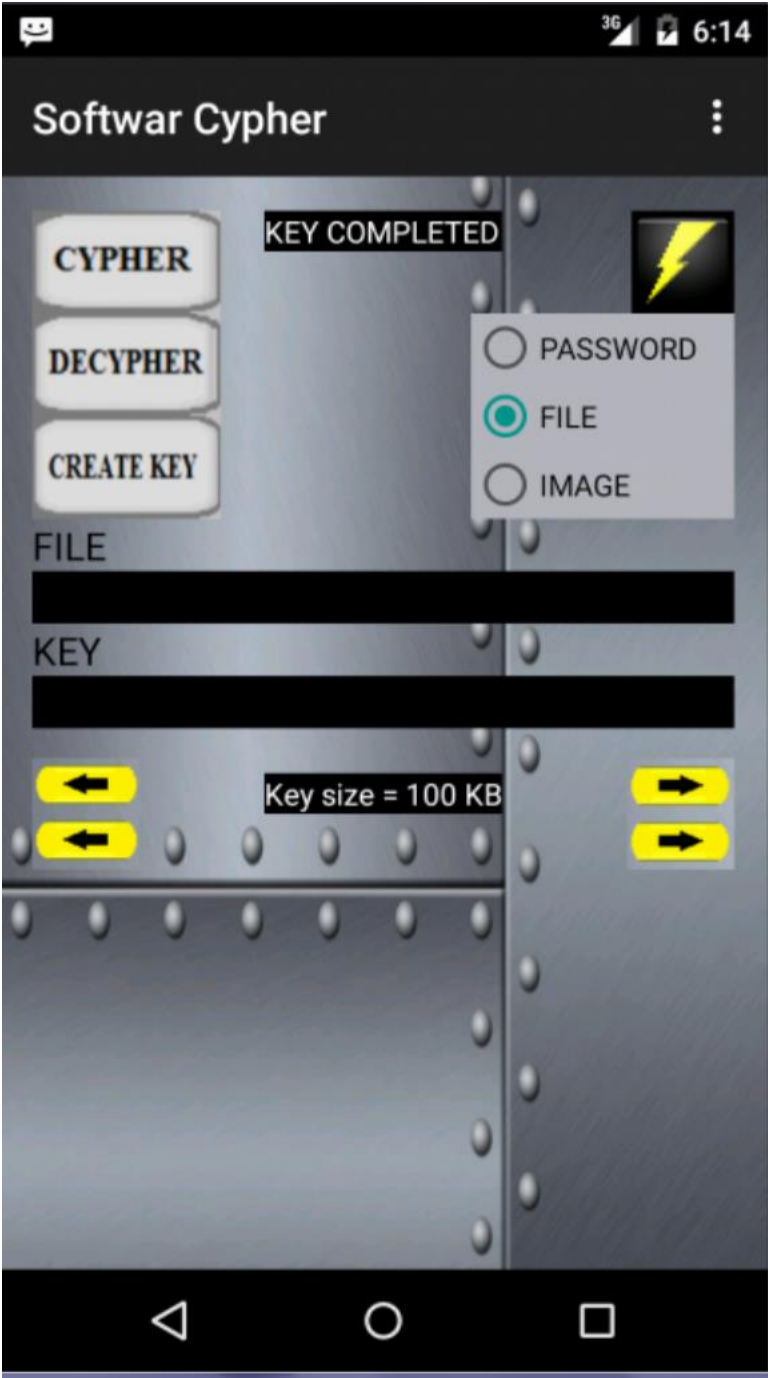


To view sub directories tap a directory entry and then hit the  arrow key. Highlight a directory and hit the  select button to select the directory to write the key files.



Enter a KEY FILE NAME in the main menu. The name can be any name plus extension, for example: test.key, myface.jpg, data.txt, Jeffery.doc.

The key creation process will display a progress status message at the top of the main menu. Once the process is completed the status will note KEY COMPLETED.



## IMAGE KEY:



The IMAGE key creator will display a preview image of the image you wish to convert into a key file. When you are satisfied with the preview image hit the CAPTURE button.

The IMAGE key creator will create a key to the size specified unless there is not enough data inside the image. If the image does not contain enough random data the creator will make a key as large as the data allows.

## IMAGE KEY TIPS:

It is desirable to use images that have a large variety of objects and colors. Images of a single color such as sky or walls will yield a low amount of random values while complex images of many objects will yield larger volumes of usable data.

## GOOD IMAGE



**NOT GOOD**



### **TECHNICAL SPECIFICATIONS**

Cypher is a symmetrical block cypher private key system that can be used in a ONE TIME PAD mode. This means that you must exchange keys with the individuals you wish to communicate to and use the entire key only ONE TIME. Private key systems are far more secure than any PUBLIC key encryption and the ONE TIME system has been used by US presidents to communicate with Moscow and by the US military to lock down nuclear weapons.

### **SYSTEM REQUIREMENTS:**

**Android 4.1.2 or later**

**Camera required for IMAGE key**

**External SD card 1 Gigabyte or more**

**CONTACT INFORMATION:**

<http://www.softwar.net>

Email : [softwar@softwar.net](mailto:softwar@softwar.net)

**Copyright notice:**

**Softwar Cypher © 2015 Softwar Inc. all rights reserved.**

**Trademarks:**

**Android is a registered trademark of Google Inc.**

**SOFTWARE End-User License Agreement**

BY INSTALLING OR USING THE LICENSED SOFTWARE AND HARDWARE FROM SOFTWARE INC. THE INDIVIDUAL IF ACTING ON BEHALF OF HIMSELF OR HERSELF ("INDIVIDUAL CUSTOMER") OR THE INDIVIDUAL WHO IS ACTING ON BEHALF OF AN EDUCATIONAL OR NONPROFIT INSTITUTION, GOVERNMENTAL AGENCY, OR OTHER ("ENTITY CUSTOMER", THE INDIVIDUAL CUSTOMER AND ENTITY CUSTOMER TOGETHER ARE "CUSTOMER") IS AGREEING TO BE BOUND BY THIS SOFTWARE LICENSE AGREEMENT ("AGREEMENT").

IF CUSTOMER DOES NOT AGREE TO THIS AGREEMENT, CUSTOMER MAY NOT INSTALL, COPY, OR USE THE LICENSED SOFTWARE.

THE "EFFECTIVE DATE" FOR THIS AGREEMENT IS THE DAY CUSTOMER INSTALLS THE SOFTWARE.

The export and re-export of Softwar Inc. products are controlled by the United States Export Administration Regulations and such software may not be exported or re-exported. This product is classified as information security encryption technology under Category 5, Part 2 in the U.S. Commerce Control List and IS NOT eligible for export outside the United States.

In addition, Softwar Inc. software may not be distributed to persons on the Table of Denial Orders, the Entity List, or the List of Specially Designated Nationals. By using an Softwar Inc. software product you are certifying that you are not a national of Cuba, Iran, Iraq, Libya, North Korea, Sudan, Syria, or any country to which the United States embargoes goods and that you are not a person on the Table of Denial Orders, the Entity List, or the List of Specially Designated Nationals.

Customer shall not, nor permit any person (including any Authorized User) to: (i) reverse engineer, reverse compile, decrypt, disassemble, or otherwise attempt to derive the source code of the Licensed Software (except to the extent that this restriction is expressly prohibited by law); (ii) modify, translate, or create derivative works of the Licensed Software; (iii) sublicense, resell, rent, lease, distribute, market, commercialize, or otherwise transfer rights or usage to the Licensed Software (except as expressly permitted under this Agreement); (iv) remove, modify, or obscure any copyright notices or other proprietary notices or legends appearing on or in the Licensed Software, or any portion thereof; (v) transfer, use, or export the Licensed Software in violation of any applicable laws, rules, or regulations of any government or governmental agency; (vi) use the Licensed Software or any system services accessed through the Licensed

Software to disrupt, disable, or otherwise harm the operations, software, hardware, equipment, and/or systems of a business, institution, or other entity, including, without limitation, exposing the business, institution, or other entity to any computer virus, trojan horse, or other harmful, disruptive, or unauthorized component; or (vii) embed the Licensed Software in any third-party applications, unless otherwise authorized in writing in advance by an officer of SOFTWARE INC.

IN NO EVENT SHALL SOFTWARE INC. HAVE ANY LIABILITY FOR ANY LOST REVENUE, LOST PROFIT, OR LOST OR DAMAGED DATA, BUSINESS INTERRUPTION, LOSS OF CAPITAL, ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT, REGARDLESS OF THE FORM OF THE ACTION, WHETHER IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT PRODUCT LIABILITY, OR OTHERWISE, EVEN IF ANY REPRESENTATIVE OF SOFTWARE INC. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND NOTWITHSTANDING THE FAILURE OF THE ESSENTIAL PURPOSE OF THIS AGREEMENT OR ANY LIMITED REMEDY HEREUNDER.

DISCLAIMER OF WARRANTIES: YOU AGREE THAT SOFTWARE INC. HAS MADE NO EXPRESS WARRANTIES TO YOU REGARDING THE SOFTWARE AND THAT THE SOFTWARE IS BEING PROVIDED TO YOU "AS IS" WITHOUT WARRANTY OF ANY KIND. SOFTWARE INC. DISCLAIMS ALL WARRANTIES WITH REGARD TO THE SOFTWARE, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, MERCHANTABLE QUALITY, OR NONINFRINGEMENT OF THIRD-PARTY RIGHTS.