*touch*Chip®

ESS Evaluator Quick Guide
Release: <2.1.0>

Table of Contents

1   Introduction

ESS (Embedded Strip Sensor) Evaluator application is designed to provide overview of the ESS functionality. It guides user through simplified categorized functional pages with possibility to switch to an advanced option.
Following text will describe particular pages and its purpose. For more information please refer to ESS API documentation.
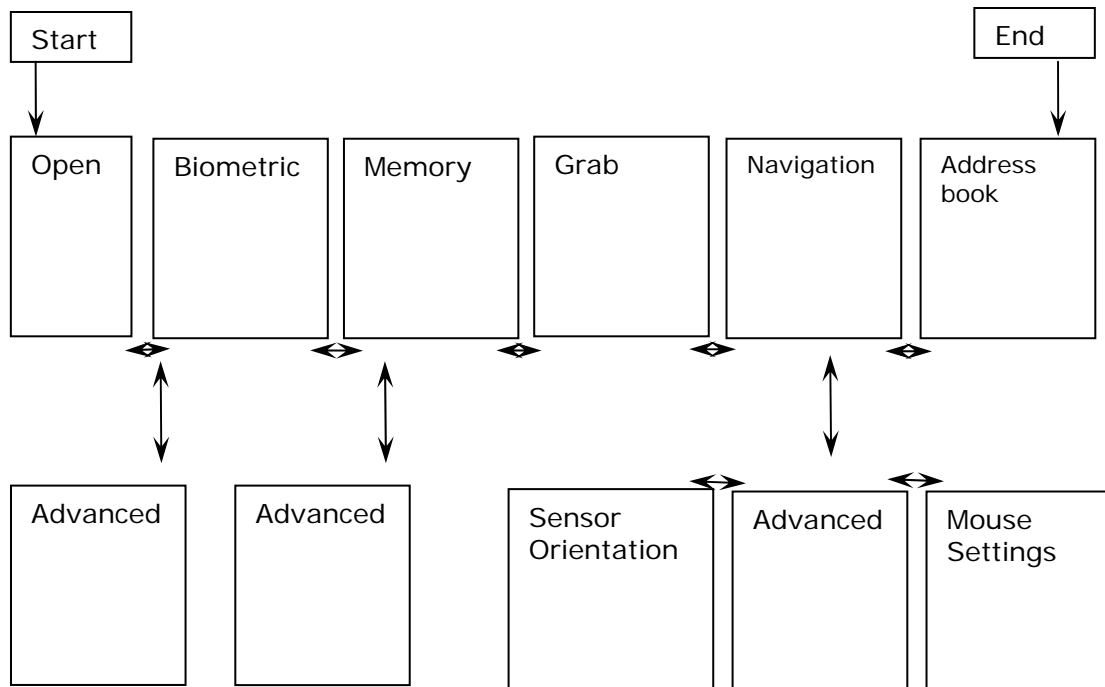
2   Quick start

After the ESS SDK installation attach your ESS development module to your PC. In case of USB connected device you will need to install a driver (can be found under "Program Files\STMicroelectronics\ TouchStrip Evaluation Tools\Drivers\ESS" directory).
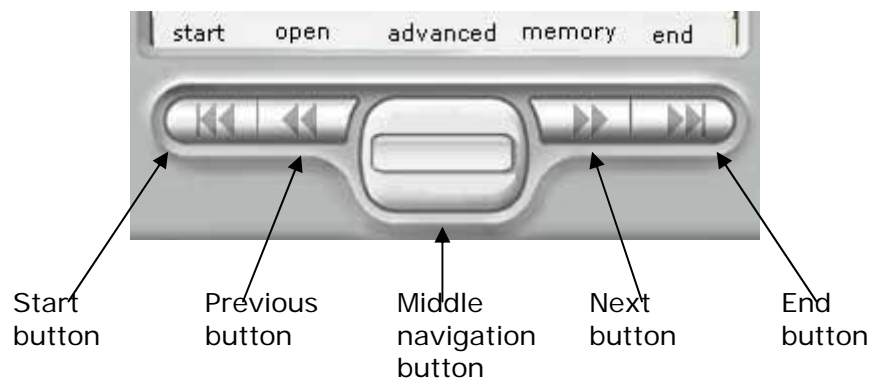Start the ESS Evaluator application.

In case the application doesn't successfully connect the module you will need to adjust the connection settings. Go to advanced page by clicking the navigation button in the middle. Please refer to the further text for the Open Advanced page details.

3   Application structure and control

The application functional pages are structured as shown on the scheme. On start the application opens on the page Open. Using the Previous and Next buttons (described below) you can shift between the pages back and forth. Pages Open, Biometric and Navigation have additional Advanced page, where you can get by clicking the middle navigation button at each respective page. It's necessary to return from the Advanced page (by clicking the middle navigation button again) before shifting between the functional pages again.

The meaning of each button is dynamically shown above it on the display.

4   Application walkthrough

Open page
Page open appears after the application start. It shows the module connection status and the API and module information. Additional information about the module firmware is reachable by clicking "***get info***" link. Exact description of the API and module information can be found in ESS API documentation.

If the module connection fails with the default settings, go to the **advanced Open page** and adjust the connection parameters to fit your currently attached module. Select the type of connection (USB or Serial) and in case of Serial connection select the right COM port, communication speed and timeout. Then click Open.

Opened connection can also be closed from this page.

In case your module is a new one, which hasn't been used before, it may need to be calibrated. In such case select "MANUFACTURING CALIBRATION" and calibrate the module. Other calibrating options are intended for special usage – please refer to the ESS API documentation for more information.

Biometric page
This page provides three basic biometric functions:
- Enroll
- Identify
- Verify

Enroll:
Enrolls a user's finger to the first empty slot in the ESS memory. The enroll is consolidated, that means it requires three swipes of the finger which are consolidated to one template.
In case the consolidation succeeds, application checks if the newly enrolled finger is not yet stored in the ESS memory. If the finger is found, duplicate storage is refused.
Each template can have two types of data attached and stored along with it in the ESS memory. Public data can be freely read when listing the memory contents. They can be also changed later as needed. Private data can only be entered during the enrollment and can't be changed later. Reading of the private data is possible only in case of successful match of the template they are attached to.

Enter either of the data boxes or both prior to clicking Enroll button to store desired data along with the enrolled fingerprint.

Identify:
Compares a live fingerprint scan with all templates stored in the ESS memory – identifies the user by the fingerprint.
In case of match, public and private data attached to the matching template are retrieved and displayed in appropriate text boxes.

Verify:
Compares the template stored in the selected slot in ESS memory with a live finger scan – verifies user.
In case of match, public and private data attached to the matching template are retrieved and displayed in appropriate text boxes.

Switching to **Advanced Biometric page** will offer *Capture* function as well as *Enroll* with possibility to select the purpose. For more information about the particular purpose selection options please refer to ESS API documentation. For both function you can specify timeout in milliseconds.
Enroll function can also attach public and/or private data to the template if the appropriate text box is filled.
Additionally, with Enroll it's possible to save the template to a selected file.

Memory page
Memory page lists all slots from the ESS memory where a template has been enrolled and displays attached public data.
You can *Delete* the selected slot contents or modify the attached public data.
Memory page has no advanced options.

Grab page
At this page a scanned fingerprint can be displayed. Select one of the possible grab formats in the drop-down menu and swipe your finger. For more information about the particular grab format selection options please refer to ESS API documentation.
When the picture appears you can save it in PGM format on the disk – click on the folder icon in the bottom right corner. To get back to the Grab page click the left arrow icon in the bottom left corner.
The Quality check box provides real-time visual fingerprint swipe quality feedback in case of bad quality swipe.

Grab page has no advanced options.

Navigation page
At this page the ESS navigation functionality can be tested. A sliding map of Prague is used for demonstration. Click **_Navigate_** to enter the navigation mode. Then the map will follow your finger movement across the strip sensor.
Check the **_ClickEnable_** box to perform mouse click (left button) with tapping on the sensor. When the tap is recognized, the map zooms in or back out. (Note: the zoom doesn't keep current focus.)
Check the **_As Mouse_** box to perform mouse movement instead of the map sliding while in navigation mode.

At the **Advanced Navigation page** the navigation can be calibrated. Select either MOVEMENT PHASE or TAP PHASE for calibration.
Both calibrations are implemented graphically, in movement phase you need to reach the cross with the UFO ship, in the tap phase you try to hit the UFO ship with a laser. This way is provided only to make the calibration more interesting and give the reason to move or tap. The performance like how fast you get the UFO in the cross or how many ships you hit doesn't affect the calibration at all.

Tap calibration can be saved for later use. Module can later change from the manufacturing calibration to the saved user calibration and vice versa. For more information about the navigation calibration options please refer to ESS API documentation.

In **Advanced Navigation** page is possible to enter a **Sensor Orientation** page. This page will let the user select the actual orientation mounting of the sensor on its board. This can affect the navigation as left and right will be swapped.

In **Advanced Navigation** page is also possible to enter Mouse Setting page.
In this page it is possible to adjust the click detection speed and the drag and drop setting. It is also possible to adjust some parameters regarding the navigation acceleration. The "threshold" slider lets you fine tune the navigation for small movements. The "acceleration" slider lets the user modify the acceleration factor.

CAUTION -   No operator-serviceable parts inside unit.

WARNING -   For reduced unwanted RF emissions, use a shielded power cord to connect AC power to the host computer.

FCC NOTICE
INFORMATION FOR THE USER
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1)   Reorient or relocate the receiving antenna.
2)   Increase the separation between the equipment and receiver.
3)   Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4)   Consult the dealer or an experienced radio/TV technician for help.

The user may find the following publication prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems" (Stock Number 004-000-00345-4).

Available exclusively from the Superintendent of Documents, Government Printing Office, Washington, DC 20402 (telephone 202-512-1800).

FCC WARNING
Changes or modifications not expressly approved by the party responsible for compliance to Part 15 of the FCC Rules could void the user's authority to operate the equipment.

CE NOTICE
INFORMATION FOR THE USER
This equipment has been tested and found to comply with the limits for a Class B or Class 2 digital device, pursuant to EN 55022 Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the expense of the user.

The user may find the following publication prepared by the Federal Communications Commission helpful:

> "How to Identify and Resolve Radio-TV Interference Problems" (Stock Number 004-000-00345-4).

Available exclusively from the Superintendent of Documents, Government Printing Office, Washington, DC 20402 (telephone 202-512-1800).

WARNING
Changes or modifications not expressly approved by the party responsible for compliance to EN 55022 Rules could void the user's authority to operate the equipment.

ICAN Class B Digital Equipment
This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences due Réglement sur le matériel brouilleur du Canada.

RegTP Declaration:

Pulver Laboratories Inc. and UPEK, Inc. hereby certify that the TouchStrip Professional Reader, TCRZ (Equipment, Type, Model Number) is in compliance with VFG 523/1969, DIN 57871 / VDE 0871 / 09.84, and DIN 57875 Part 1 A2 / 10.90 (product standards) and is RFI suppressed.

The marketing and sale of this equipment in Germany has been reported to the German Postal service. They have also been given the right to retest this equipment to verify compliance with product regulations.

Compliance with applicable regulations depends on the use of shielded cables. The user is responsible for procuring the appropriate cables.

This equipment has been tested concerning compliance with the relevant RFI protection requirements both individually and on a system level (to simulate normal operation conditions). However, it is possible that these RFI requirements are not met under certain unfavorable conditions in other installations. The user is responsible for compliance of his particular installation.

Pulver Laboratories Inc.
Testing and Certification Laboratories

UPEK, Inc.
Name of Manufacturer or Importer

Bescheinigung des Pulver Laboratories Inc. und UPEK, Inc. hiermit wird bescheinigt, dass die TouchStrip Professional Reader TCRZ in Übereinstimmung mit den Bestimmungen der VFG 523/1969, DIN 57871 / VDE 0871 / 09.84, und DIN 57875 Part 1 A2 / 10.90 (Amtsblattvertugung) funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Geräts angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Einhaltung mit betreffenden Bestimmungen kommt darauf an, dass geschirmte Ausführungen gebraucht werden. Für die Beschaffung richtiger Ausführungen ist der Betreiber Verantwortlich.

Dieses Gerät wurde sowohl einzeln als auch in einer Anlage, die einen normalen Anwendungsfall nachbildet, auf die Einhaltung der Funk-entstörbestimmungen geprüft. Es ist jedoch möglich, dass die Funk-entstörbestimmungen unter Ungünstigen Umständen bei anderen Gerätekombinationen nicht Eingehalten werden. Der Betreiber ist für die Einhaltung der funk-eutstörungsbestimmungen seiner gesamten Anlage verantwortlich, in der dieses Gerät betrieben wird.

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