



# CapeClock Fingerprint Reader

- Identification -

**Setup Guide**

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**Quick Startup Steps**

Below are the basic steps to speedily enroll employees.

**To Enroll**

1. Enter the supplied Enroller Quick Start Code (X X X X + #).
2. Enter new Supervisor’s key code (x x x + #).
3. New Supervisor must register finger – can now enroll Users.
4. Supervisor enters key code and is identified using finger.
5. New User enters a Key Code and registers using finger.
6. Repeat steps 4 and 5 for each employee.

**To Gain Access**

1. Identify using finger.



The CapeClock Fingerprint Reader uses Biometric fingerprint identification to prevent unauthorized access by identifying the fingerprint of the person seeking entry.

## Features

- Self-contained reader performs enrollment, identification and stores up to 200 fingerprints.
- Provides dual-factor authentication for enrollers - a key code and a biometric fingerprint.
- Simple and quick enrollment of fingerprints, less than 3 seconds.
- Provides access control with fast throughput and individual privacy.
- Advanced patented fingerprint algorithm maintains accuracy and is robust when faced with scarred, dirty, wet or dry fingers.
- Multiple administration options.
- Intuitive user interface with red and green LED's and tone signals.
- Proven technology.

## Performance

Enrollment time:	~ 3 seconds
Verification time:	~ 1 second (for a 1 to 1 comparison)
Identification time:	1 to 5 seconds
Allowable finger rotation:	± 12 deg
Allowable finger displacement:	± 5 mm
False Rejection Rate:	0.001 - 1 in 1000
False Acceptance Rate:	0.001 - 1 in 1000
Equal Error Rate:	0.001

## Template Storage

### Verify

Up to 4000 people

### Identify

Up to 200 people

## Operating Temperature Range

0 degrees to +60 degrees C

## Biometric Definitions

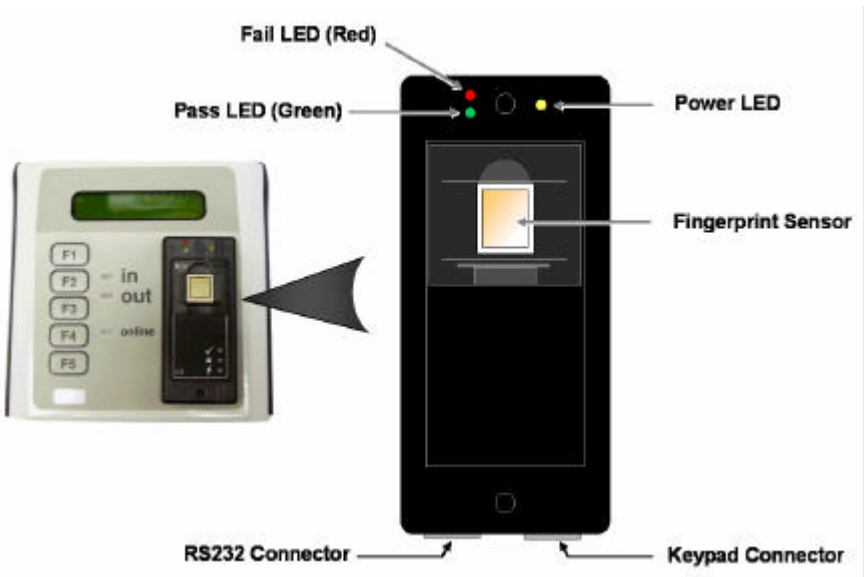
**Enrollment** is the operation of assigning a key code, scanning a fingerprint, determining the quality of the fingerprint scan, and storing a good template with associated data within the memory of the reader.

**Verification** is the operation of entering a key code, requesting the user to place their finger on the fingerprint reader, scanning the finger, comparing the current scan against stored fingerprint templates for that user, and then notification of a successful validation or a failure.

**Identification** is the operation of requesting the user to place their finger on the fingerprint reader, scanning the finger, comparing the current scan against all stored fingerprint templates (regardless of user), and, if the user is in the database, identifying the user.

**Fingerprint Template** is the term used to describe the data stored on the reader that mathematically represents the ridge pattern of an enrolled fingerprint.

## General Layout of the Fingerprint Reader



Correct finger placement using the Ridge-Lock device

## Preparing the CapeClock and Fingerprint Reader

1. Install CapeClock Setup Software.



2. Connect Clock and Computer (Comms port).
3. Run CapeClock Setup Program.
4. Set up Clock as per normal using **General** Tab.



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*It is important that when you are setting up the CapeClock to be used with the Fingerprint Reader, that the **Card Length (Diags tab)** for both **Mem** and **EEPROM** are set to **10**.*

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5. Connect Computer (comms port) to connector at bottom of Fingerprint Reader and also connect the keypad as shown below.



6. Select the **Biometric** toolbar option and then the **General** tab.

## Preparing Users

To follow the correct procedure required to prepare the correct types of Enrollers and Deleters to suite your system and security requirements, you first need to understand the different type of users that can be created.

### Definitions

#### Enroller

Used to enroll (create) users.

#### Deleter

Used to delete (remove) enrolled users.

#### User

**Definition.** These are the employees who need to gain access at particular reader(s).

**Operation.** To gain access, the user is required to place their finger on the fingerprint reader.

**Creation.** Users can be created (enrolled) or deleted by the respective Masters and/or Supervisors.

#### Supervisor Enroller and Deleter

**Definition.** An authorised person who can enroll or delete Users.

**Operation.** The authorised Supervisor Enroller or Deleter must enter their key code and then place their finger on the fingerprint reader before they can enroll or delete a User.

**Creation.** Created by the respective Supers.

#### Master Enroller and Deleter

**Definition.** Used to create or delete the respective Users. The Master Deleter is also used to delete Supervisors.

**Operation.** The Master Enroller / Deleter needs to enter their key code before they can enroll or delete a User.

**Creation.** Created using the CapeSoft Setup software.

#### Super Enroller and Deleter

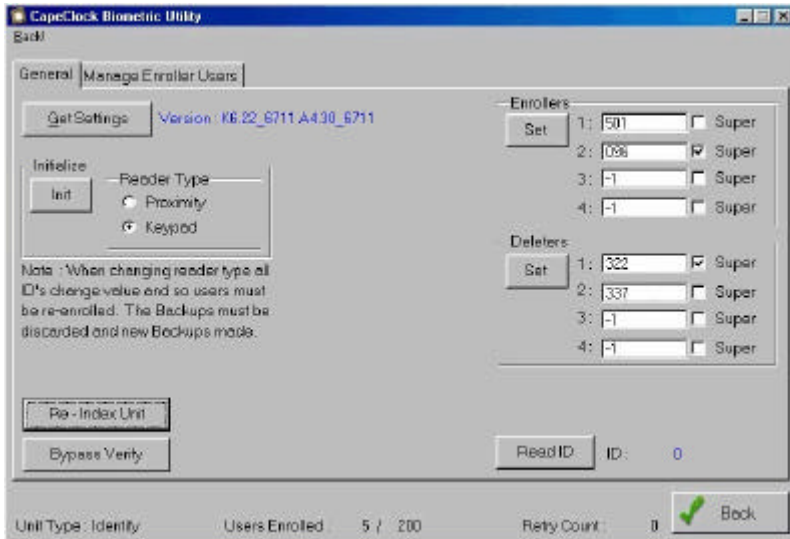
**Definition.** Used to create or delete the respective Supervisors.

**Operation.** The Super Enroller and Deleter needs to enter their key code before it can enroll or delete the respective Supervisors.

**Creation.** Created using the CapeSoft Setup software.

## Prepare Super and/or Master Enrollers

An Enroller is used when a new User is to be added to the system. To prepare an Enroller, proceed as follows:



1. Using the CapeSoft Biometric Utility, select the reader type being used (**Keypad**) and then select the **Get Settings** button.
2. If setting up for the first time, select the **Initialize** button (Init).
3. Check that the *Enrollers 1 to 4* text boxes have a value of **-1** (only if initialising for the first time). If Enrollers have already been prepared, these text boxes will show the particular ID key codes.
4. Select the **Read ID** button and using the keypad, enter an ID key code and then the hash key (#). The ID key code will be displayed in blue to the right of the button. Using the mouse cursor, select this ID key code and drag and drop it into the appropriate Enroller code text box.
5. Repeat step 4 for each Enroller that is to be prepared (maximum of 4 Enrollers).
6. If an Enroller is to be that of a Super, select the **Super** tick box for that user (will show a tick mark when selected).
7. Once the required Enrollers have been created, select the *Enrollers Set* button.

## Prepare Super and/or Master Deleters

A Deleter is used when a User is to be deleted from the system. To prepare a Deleter, proceed as follows:

1. Check that the *Deleters 1 to 4* text boxes have a value of **-1** (only if initialising for the first time). If Deleters have already been prepared, these text boxes will show the particular ID key code.
2. Select the **Read ID** button and using the keypad, enter the user ID key code to be used as a Deleter. The ID Key code will then be displayed in blue to the right of the button. Using the mouse cursor, select this ID key code and drag and drop it into the appropriate Deleter code text box.
3. Repeat step 2 for each Deleter that is to be prepared (maximum of 4 Deleters).
4. If a Deleter is to be that of a Super, select the **Super** tick box for that user (will show a tick mark when selected).
5. Once the required Deleters have been created, select the *Deleters Set* button.



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*A single ID Key code cannot be used as both an Enroller and Deleter.*

*The ID Key code can be between one and four numerals (max 4 numerical values, i.e. x to x x x x )*

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## Bypass Identify Option

The **Bypass Verify** button is used to set up a reader to allow access using only the User ID key code via the Keypad (the fingerprint scanner is disabled). Using the **Enable Verify** button will again enable the fingerprint identification process. This option can be used if the fingerprint reader becomes faulty.

The Setup is now complete and the RS232 cable can be removed from the Fingerprint Reader and the clock can be installed for use.



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*Using the **Manage Enrolled Users** tab, you are able to save fingerprint templates from a reader and also upload them to a reader from a saved file.*

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## Prepare Supervisor Enrollers

To prepare a Supervisor Enroller by a Super Enroller, proceed as follows:

1. At the clock where the Supervisor Enroller is to be used, enter the Super Enroller ID key code then press the hash key (#). The Green LED will then flash.
2. Enter the new Supervisor Enroller ID key code and then the hash key (#). The Red and Green LED's will now be illuminated.
3. The user who is authorised to be the new Supervisor must now place his/her finger on the fingerprint reader. If the fingerprint image is accepted by the system, the Red LED will switch off and the Green LED will remain illuminated for a short duration before switching off. If the Green LED switches off and the Red LED flashes for a short duration before switching off then the fingerprint image was not accepted and the procedure must be repeated.
4. Once created (enrolled), the authorised user can now enroll new Users using this Supervisor Enroller ID key code and fingerprint verification.

## Prepare Supervisor Deleters

To prepare a Supervisor Deleter using a Super Deleter ID key code, proceed as follows:

1. At the clock where the new Supervisor Deleter is to be used, enter the Super Deleter ID key code and then press the hash key (#). The Green LED will then flash.
2. Enter the new Supervisor Deleter ID key code and then press the hash key (#). The Red and Green LED's will now be illuminated.
3. The user who is authorised to be the new Supervisor Deleter must now place his/her finger on the fingerprint reader. If the fingerprint image is accepted by the system, the Red LED will switch off and the Green LED will remain illuminated for a short duration before switching off. If the Green LED switches off and the Red LED flashes for a short duration before switching off then the fingerprint image was not accepted and the procedure must be repeated.
4. Once created (enrolled), the authorised user can now delete Users using this Supervisor Deleter ID key code and fingerprint verification.

## Delete a Super or Master

To delete a Super or Master Enroller or Deleter that has been created using the CapeSoft Setup software, proceed as follows:

1. Connect the Computer's Comms port (that is running the CapeSoft Setup software) to the RS232 connector at the bottom of Fingerprint Reader.
2. Select the **Biometric** toolbar option and then the **General** tab.
3. Using the cursor, select and highlight the Key code (listed in the appropriate text box) to be deleted and then type in the value **-1**.
4. Once the required Key codes have been changed select the *Enroller* or *Deleter* **Set** button respectively.

## Delete a Supervisor

To delete a Supervisor that has been created using a Super Enroller or Deleter, proceed as follows:

1. At the reader where the Supervisor Enroller or Deleter is to be deleted, enter the Master Deleter ID key code and then press the hash key (#). The Red LED will flash.
2. Enter the ID Key code of the Supervisor to be deleted and when deleted the Green LED will illuminate for a short duration and then switch off.

## Enrolling a User

To enroll a User, proceed as follows:

1. At the Fingerprint Reader where the new User is to have access, first enter an Enroller ID key code and then press the hash key (#).
2. Depending on the type of Enroller:
  - a. If a Master Enroller, the Green LED will then flash.
  - b. If a Supervisor Enroller, the Green and Red LED's will illuminate. The Supervisor Enroller must now place their finger on the fingerprint reader. If verified the Red LED will switch off and the Green LED will flash. If the fingerprint was not verified, the Green LED will switch off and Red LED will remain illuminated for a short duration and then switch off.
3. Enter the new User ID key code and then press the hash key (#) and the Red and Green LEDs will be illuminated.
4. The new User must now place his/her finger on the Fingerprint Reader. If the fingerprint image is accepted by the system, the Red LED will switch off and the Green LED will remain illuminated for a short duration before switching off. If the Green LED switches off and the Red LED flashes for a short duration before switching off then the fingerprint image was not accepted and the procedure must be repeated.



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*To obtain the best fingerprint, with the finger raised, position the finger so that the Ridge-lock rests comfortably within the first indentation of the finger. Now lower the finger onto the sensor and apply very moderate pressure.*

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## Deleting a User

To delete a User from the system, proceed as follows:

1. At the Fingerprint Reader where the User is to be deleted, enter a Deleter ID key code and then press the hash key (#).
2. Depending on the type of Deleter:
  - a. If Super or Master Deleter, the Red LED will flash.
  - b. If a Supervisor Deleter, the Green and Red LED's will illuminate. The authorised Supervisor Deleter must now place their finger on the fingerprint reader. If verified, the Green LED will switch off and the Red LED will flash.
3. Enter the User ID key code to be deleted and then press the hash key (#). If the User has been deleted the Green LED will illuminate for a short duration and then switch off.

## Gaining Access

To gain access, proceed as follows:

1. Place your finger on the fingerprint reader.
  - a. If identified (Access granted), your personal ID key code will be displayed by the CapeClock and if set, the clock will beep once.
  - b. If the fingerprint was not identified (Access denied), there will be no response except if set up, the CapeClock will give a No Access beep (normally two short beeps).



*To gain access in the bypass mode, the user's ID Key code and then the hash key (#) is used.*

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## Possible Identification Problems

<b>Reason</b>	<b>Correction</b>
Finger movement while sampling.	Keep finger still while scanning.
Finger not positioned correctly.	To obtain the best fingerprint, with the finger raised, position the finger so that the Ridge-lock rests comfortably within the first indentation of the finger. Now lower the finger onto the sensor and apply very moderate pressure.
User might be pressing too hard.	Too much pressure on the sensor will blur the fingerprint ridges. Get the user to gently apply pressure when scanning.
User might not be pressing hard enough.	User must apply gentle pressure and the finger must lay flat on the sensor surface.
Finger too wet or moist.	Lightly dry the finger before attempting again.

## Cleaning the Fingerprint Sensor

### Introduction

The fingerprint sensor is a rugged solid-state device designed to provide years of trouble-free service. Although maintenance and handling requirements for the sensor are few, observance of a few basics in caring for it will help to ensure a high level of performance over the life of the sensor.

### Cleaning Instructions

Oily deposits from your finger accumulate on the surface of the fingerprint sensor after repeated use. These deposits can inhibit the functionality of the sensor. It is recommended that the sensor be cleaned at least once per week, but it should also be cleaned anytime an oily residue is visible on the sensor surface.

Use isopropyl alcohol (rubbing alcohol) and a clean cotton cloth or tissue paper to remove oily deposits. Do not use a soiled cloth or dirty tissue paper to clean the sensor. A clean cotton cloth or tissue paper will absorb the deposits, but a soiled cloth will smear the deposits over the sensor surface.

Rubbing alcohol is the preferred cleaning solution because it dissolves the oily residue and evaporates quickly.

The use of nylon brushes or scouring pads, abrasive cleaning fluids or powders, or steel wool is not recommended.

