



CapeClock Fingerprint Reader

- Verification -

Setup Guide

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Quick Startup Steps

Below are the basic steps to speedily enroll employees. These steps are described in more detail further in this guide.

To Enroll

1. Swipe the supplied Master Enroller tag.
2. Swipe the new User tag.
3. Tag User must register finger.
4. Repeat for each employee.

To Use

1. Swipe User tag.
2. Verify using finger.



The CapeClock Fingerprint Reader combines Biometric fingerprint verification and proximity card reader technology to prevent unauthorized access by matching the fingerprint of the person seeking entry to the identity of the card-holder. This eliminates any concerns with respect to stolen, loaned or compromised proximity cards.

Features

- Self-contained reader performs enrollment, verification and stores up to 4000 fingerprints
- Provides dual-factor authentication - a proximity tag 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

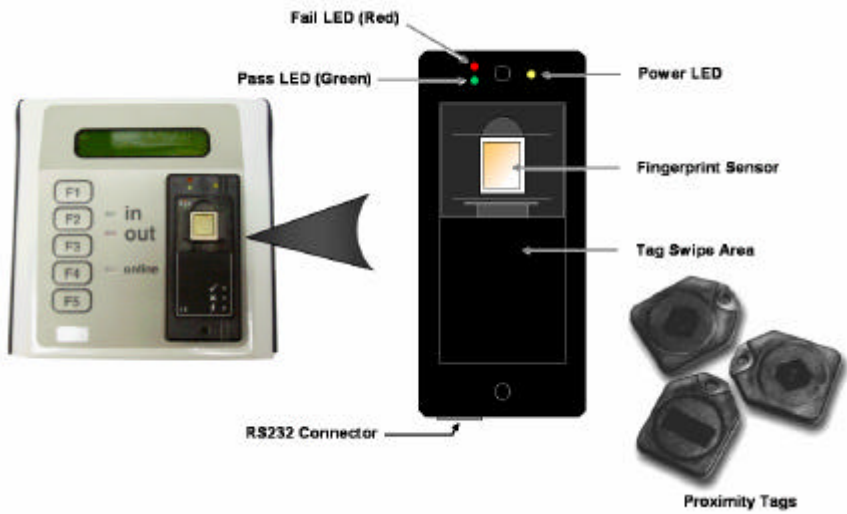
Enrollment is the operation of assigning a tag ID, scanning a fingerprint, determining the quality of the fingerprint scan, and storing a good template with associated data within the memory of the reader.

Verification is the operation of entering a PIN number (user tag), 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 (Comm's port).
3. Run CapeClock Setup Program.
4. Set up Clock as per normal using **General** Tab.



*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**.*

5. Connect Computer (Comm's port) to connector at bottom of Fingerprint Reader.



6. Select the **Biometric** toolbar option.

Preparing Tags

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

Tag Definitions

Enroller Tags

These tags are used to enroll (create) tags.

Deleter Tags

These tags are used to delete (remove) enrolled tags.

User Tags

Used. These tags are used by users (employees) to gain access at particular reader(s).

Operation. When the User tags are used, the user is required to swipe the tag and then place their finger on the fingerprint reader to gain access (verification).

Creation. These tags can be created (enrolled) or deleted using the respective Master and/or Supervisor tags.

Supervisor Enroller and Deleter Tags

Used. These tags are used by an authorised “supervisor” to respectively enroll or delete User tags.

Operation. When the authorised person uses a Supervisor Enroller or Deleter tag, they must swipe the tag and then place their finger on the fingerprint reader and gain verification before they can enroll or delete a User tag.

Creation. These tags are created using the respective Super tags.

Master Enroller and Deleter Tags

Used. These tags are used to create or delete the respective User tags. The Master Deleter tag is also used to delete Supervisor tags.

Operation. The Master Enroller / Deleter tag only needs to be swiped before it can be used to enroll or delete a User tag.

Creation. These tags are created using the CapeSoft Setup software.

Super Enroller and Deleter Tags

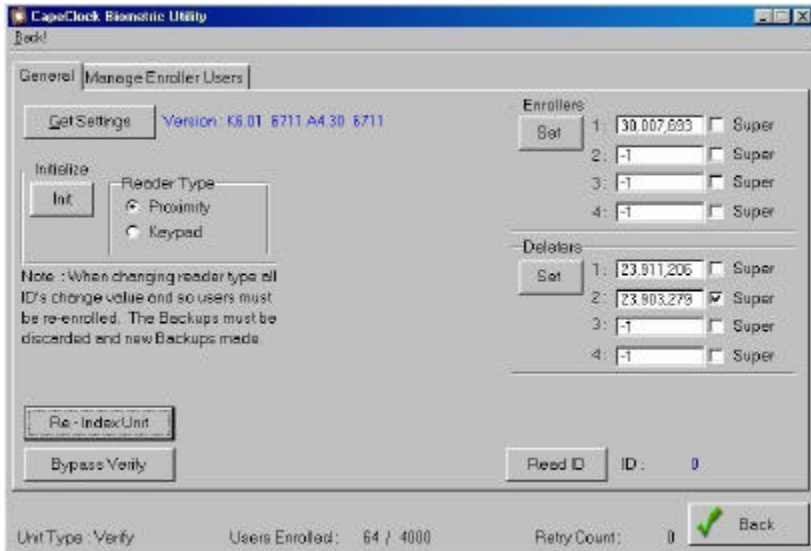
Used. These tags are used to create the respective Supervisor tags.

Operation. The Super Enroller and Deleter tags only needs to be swiped before it can enroll the respective Supervisor tag.

Creation. These tags are created using the CapeSoft Setup software.

Prepare Super and/or Master Enroller Tag(s)

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



1. Using the CapeSoft Setup software **General** tab, select the type of reader that is being used (Verify).
2. If setting up for the first time, select the **Initialize** button (Init).
3. Select the **Get Settings** button and check that the *Enrol 1* to *4* text boxes have a value of **-1** (only if initialising for the first time). If Enroller tags have already been prepared, these text boxes will show the particular tag's ID numbers.
4. Select the **Read ID** button and swipe the tag to be used as an Enroller tag across the reader. The Tag ID will then be displayed in blue to the right of the Read ID Tag button. Using the mouse cursor, select this Tag ID and drag and drop it into the appropriate Enrol number text box.
5. Repeat step 4 for each Enroller tag that is to be prepared (maximum of 4 Enroller tags).
6. If an Enroller tag is to be that of a Super tag, select the **Super** tick box for that tag (will show a tick mark when selected).
7. Once the required Enroller tags have been assigned, select the **Enrollers Set** button.

Prepare Super and/or Master Deleter Tag(s)

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

1. Select the **Get Settings** button and check that the *Del 1 to 4* text boxes have a value of **-1** (only if initialising for the first time). If Deleter tags have already been prepared, these text boxes will show the particular tag's ID numbers.
2. Select the **Read ID** button and swipe the tag to be used as a Deleter tag across the reader. The Tag ID will then be displayed in blue to the right of the Read ID Tag button. Using the mouse cursor, select this ID and drag and drop it into the appropriate Del number text box.
3. Repeat step 2 for each Deleter tag that is to be prepared (maximum of 4 Deleter tags).
4. If a Deleter tag is to be that of a Super tag, select the **Super** tick box for that tag (will show a tick mark when selected).
5. Once the required Deleter tags have been assigned, select the **Deleters Set** button.



A single tag cannot be used as both an Enroller and Deleter tag.

Bypass Verify Option

The **Bypass Verify** button available from the Biometric tab is used to set up a reader to allow access using only the User tags (the fingerprint scanner is disabled). Using the **Enable Verify** button will again enable the tag and fingerprint verification 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.



*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.*

Prepare Supervisor Enroller Tag(s)

To prepare a Supervisor Enroller tag using a Super Enroller tag, proceed as follows:

1. At the clock where the Supervisor Enroller tag is to be used, swipe the Super Enroller tag. The Green LED will then flash.
2. Swipe the new Supervisor Enroller tag. The Red and Green LEDs will now be illuminated.
3. The user who is authorised to use this new Supervisor tag 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 User tags using this Supervisor Enroller tag.

Prepare Supervisor Deleter Tag(s)

To prepare a Supervisor Deleter tag using a Super Deleter tag, proceed as follows:

1. At the clock where the new Supervisor Deleter tag is to be used, swipe the Super Deleter Tag. The Green LED will then flash.
2. Swipe the new Supervisor Deleter tag. The Red and Green LEDs will now be illuminated.
3. The user who is authorised to use this new Supervisor Deleter tag 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 User tags using this Supervisor Deleter tag.

Delete a Super or Master Tag

To delete a Super or Master Enroller or Deleter tag 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** tab.
3. Using the cursor, select and highlight the Tag ID (listed in the appropriate text box) to be deleted and then type in the value **-1**.
4. Once the required Tag ID's have been changed select the **Set Enroller/Deleter** button respectively.

Delete a Supervisor Tag

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

1. At the reader where the Supervisor Enroller or Deleter tag is to be deleted, swipe a Master Deleter tag. The Red LED will flash.
2. Swipe the Supervisor tag to be deleted and when the tag has been deleted the Green LED will illuminate for a short duration and then switch off.

Enrolling a User Tag

To enroll a User tag, proceed as follows:

1. At the Fingerprint Reader where the new User tag is to be used, first swipe an Enroller tag.
2. Depending on the type of Enroller tag used:
 - a. If a Super or Master Enroller tag is used, the Green LED will then flash.
 - b. If a Supervisor Enroller tag is used, the Green and Red LED's will illuminate. The authorised user of the Supervisor Enroller tag 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. Swipe the new User tag 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.



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.

Deleting a User Tag

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

1. At the Fingerprint Reader where the User tag information is to be deleted, swipe the Deleter tag.
2. Depending on the type of Deleter tag used:
 - a. If Super or Master Deleter tag is used, the Red LED will flash.
 - b. If a Supervisor Deleter tag is used, the Green and Red LED's will illuminate. The authorised user of the Supervisor Deleter tag must now place their finger on the fingerprint reader. If verified, the Green LED will switch off and the Red LED will flash.
3. Swipe the User tag to be deleted and if the tag has been deleted the Green LED will illuminate for a short duration and then switch off.

Using a User Tag

To gain access using a User tag, proceed as follows:

1. Swipe the User tag across the reader. The Green and Red LED's will illuminate.



If the tag is not recognized, the Red LED will flash for a short duration and then switch off.

2. Place your finger on the fingerprint reader.
 - a. If verified (Access granted), the Red LED will switch off and the Green LED will remain illuminated for a short duration before switching off. Also if set, the CapeClock will beep once.
 - b. If the fingerprint was not verified (Access denied), the Green LED will switch off and Red LED will remain illuminated for a short duration and then switch off. Also if set, the CapeClock will give a No Access beep (normally two short beeps).

Possible Verification Problems

Reason	Correction
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 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.

