

MULTIFUNCTIONAL DIGITAL COLOR SYSTEMS /  
MULTIFUNCTIONAL DIGITAL SYSTEMS

# Fingerprint Authentication Function

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**e-STUDIO2020AC/2520AC/2021AC/2521AC**

**e-STUDIO2525AC/3025AC/3525AC/4525AC/5525AC/6525AC**

**e-STUDIO2528A/3028A/3528A/4528A/5528A/6528A**

**e-STUDIO6526AC/6527AC/7527AC**

**e-STUDIO6529A/7529A/9029A**



# Preface

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Thank you for purchasing our product.  
This manual describes how to use the fingerprint authentication function.  
Read this manual so that you can fully understand this function to use it effectively.

## ■ How to read this manual

### □ Symbols in this manual

In this manual, some important items are described with the symbols shown below. Be sure to read these items before using this equipment.

 <b>WARNING</b>	Indicates a potentially hazardous situation which, if not avoided, could result in death, serious injury, or serious damage, or fire in the equipment or surrounding objects.
 <b>CAUTION</b>	Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury, partial damage to the equipment or surrounding objects, or loss of data.
<b>Note</b>	Indicates information to which you should pay attention when operating the equipment.
<b>Tip</b>	Describes handy information that is useful to know when operating the equipment.
	References describing items related to what you are currently doing. See these references as required.

### □ Target audience for this manual

This is a manual that is aimed at general users and administrators.

### □ Model and series names in this manual

In this manual, each model name is replaced with the series name as shown below.

Model name	Series name
e-STUDIO2020AC/2520AC/2021AC/2521AC	e-STUDIO6525AC Series
e-STUDIO2525AC/3025AC/3525AC/4525AC/5525AC/6525AC	
e-STUDIO2528A/3028A/3528A/4528A/5528A/6528A	e-STUDIO6528A Series
e-STUDIO6526AC/6527AC/7527AC	e-STUDIO7527AC Series
e-STUDIO6529A/7529A/9029A	e-STUDIO9029A Series

### □ Screens in this manual

In this manual, Windows 10 is taken for explanation purposes to describe the screens and operation procedures in Windows.

The details on the screens may differ depending on your model and how the equipment is used, such as the status of the installed options, the OS version and the applications.

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## □ Terms in this manual

The major terms of the fingerprint authentication functions used in this manual are as below.

- **Fingerprint image**

This is image data of a fingerprint scanned by a fingerprint reader. After a fingerprint template is created, the fingerprint image is deleted without it being stored in the equipment.

- **Fingerprint template**

This is a file created with a method which compliant with an international biometric standard (ISO19794-2) by extracting minutiae from a fingerprint image of a registered user. This is registered in the equipment as a file to be used for collating a fingerprint. No fingerprint image can be reconstructed from the fingerprint template.

- **Fingerprint database**

This is a user information group for logging into the equipment. Each fingerprint template is linked. The fingerprint database does not include fingerprint templates.

## □ Trademarks

For trademarks, refer to the **Safety Information**.

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## Fingerprint Authentication Function

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This function is for logging into the equipment by identifying a user using a connected fingerprint reader. When a fingerprint is registered, its image scanned by a fingerprint reader is converted into a fingerprint template and is stored in an internal storage device of the equipment. When fingerprint authentication is performed, a fingerprint image scanned by a fingerprint reader is converted into a fingerprint template in the memory of the equipment. The fingerprint template is collated with the one linked with the fingerprint database registered beforehand. When the fingerprint matches, the user can log into the equipment.

### Note

- To use the fingerprint authentication function, the installation of a fingerprint reader in an equipment is required. For details, contact your service representative.
- Do not disconnect the USB cable connecting the fingerprint reader and the equipment while fingerprint authentication or its setting is being performed. Data may be corrupted.
- A fingerprint image scanned by a fingerprint reader is converted into a fingerprint template in the memory of the equipment, but not is stored in it. Personal information related to a fingerprint will not be leaked from a scanned fingerprint image.
- If a fingerprint having rarely similar characteristics has already been registered, authentication may fail or another user may be identified. Therefore, this fingerprint authentication does not guarantee the complete identification and collation of the person. Moreover, if there is very little characteristic information for a fingerprint, user identification may be rejected, causing authentication to fail even though the user is the actual person registered for the operation. Toshiba Tec Corporation will not be responsible for any damages caused by an authentication failure and the use by a third person.
- This function is not available in some regions.

### Tip

Hamster Pro, Hamster Pro10 or Hamster Pro20 by SecuGen is recommended for a fingerprint reader. For details on how to use the fingerprint reader and scan a fingerprint, read its manuals and use it properly in accordance with the description.

## ■ Fingerprint Authentication Mode

You can choose the method between two types of Authentication Modes.

### Tip

The Authentication Mode method is set from TopAccess by logging into it with the administrator privilege.

 P.10 “Fingerprint authentication setting”

### 1 to 1 Authentication

This is the method to specify the user registered in the equipment with pinpoint accuracy at the shortest period. Enter the user name in the authentication screen displayed on the touch panel and place the user’s finger on a fingerprint reader.

### 1 to N / Filter Authentication

This is the method to specify the user by collating the ones in the fingerprint database in the equipment. Place the finger on a fingerprint reader without entering the user name in the authentication screen displayed on the touch panel.

In addition, the authentication period can be shortened by narrowing the users in the fingerprint database by entering the first letter of the user name.

### Tip

For the 1 to N / Filter authentication, it is recommended to run it by registering up to 100 users.

## ■ Logging into the equipment

By following the instructions displayed on the touch panel, place the finger used for the registration on the fingerprint reader.

### Tip

The authentication screen displayed on the touch panel differs depending on the authentication mode selected in [User Authentication Setting] on TopAccess. For details of the authentication mode, ask your administrator.

## □ Two-step authentication

In addition to the fingerprint authentication, you can log into the equipment by two-step authentication by means of the combination of different authentication settings such as PIN Code and IC Card ones.

### Note

Fingerprint Authentication and Mobile Authentication modes cannot be used together.

## ■ Restrictions

The following are restrictions to the features of this equipment when the fingerprint authentication function is used.

- External authentication such as Windows domain or LDAP authentication cannot be used.
- When [Enable] is set for [Shared User Management] of [User Authentication Setting] in [Authentication] under [Security] of the [Administration] on TopAccess, the fingerprint template is not included in data to be synchronized. To carry out fingerprint authentication in multiple units of the equipment, register fingerprints in each one. However, if the user whose fingerprint has been registered is removed from the secondary equipment with the synchronization performed, the fingerprint template is also deleted.
- When a fingerprint reader is being connected to the equipment, it will not be shifted into the Super Sleep mode.

# Fingerprint Authentication Function Setting

The setting for logging into the equipment by using the fingerprint authentication function can be configured from TopAccess.

**Note**

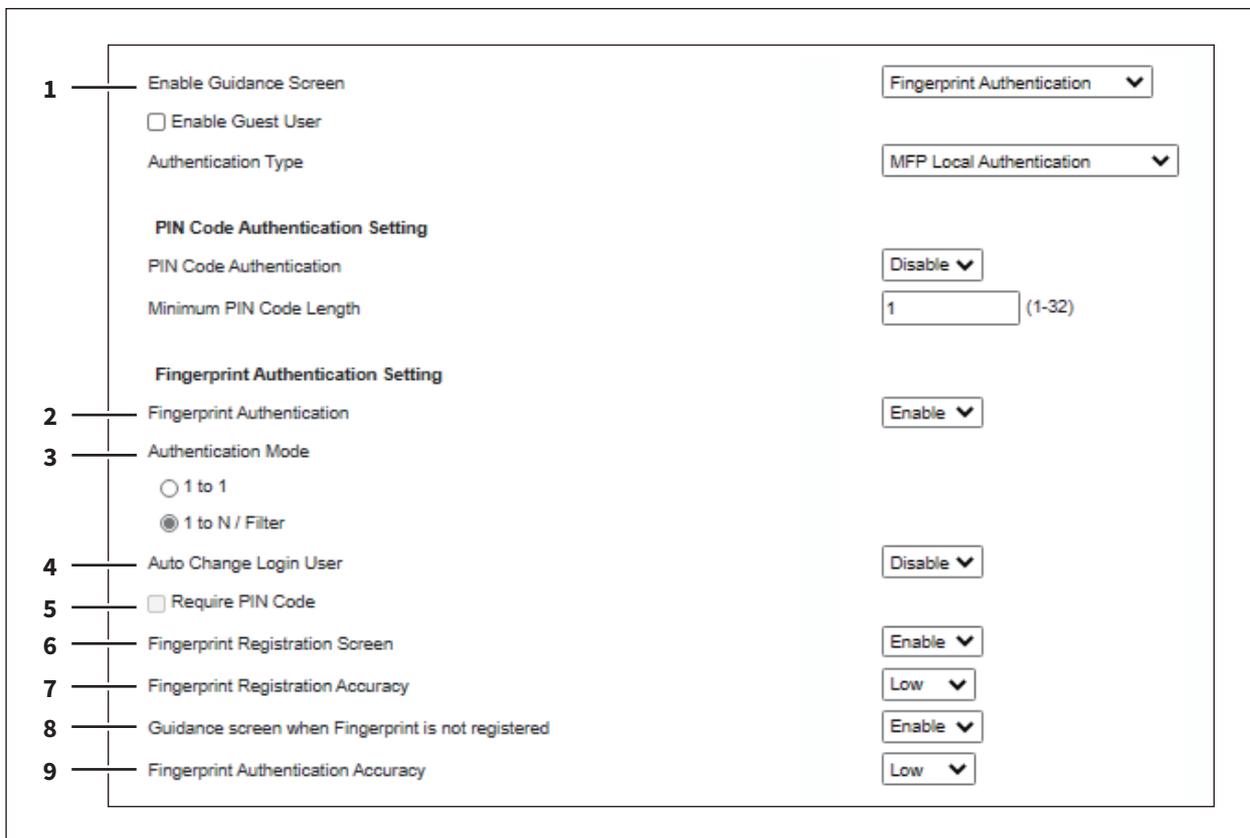
It is required to log into TopAccess with the administrator privilege. For details on how to operate TopAccess, see the reference below:  
Operator's Manual for **TopAccess**

## Fingerprint authentication setting

Log into TopAccess with the administrator privilege and select [Administration] > [Security] > [Authentication] > [Fingerprint Authentication setting]. Then configure the necessary settings.

**Note**

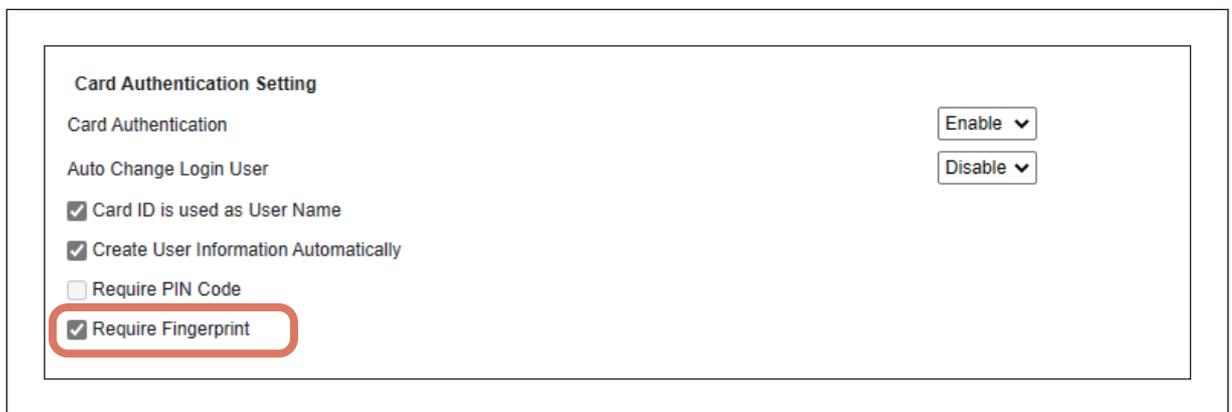
Card reader is required for authentication using an IC card and mobile terminal. For details, contact your service representative.



	Item name	Description
1	Enable Guidance Screen	<p>Selects [Fingerprint Authentication] to display the guidance screen on the log-in screen on the touch panel of the equipment. When [1 to 1] is set for [Authentication Mode], the fingerprint authentication guidance screen is displayed even if another such as IC Card, Mobile or PIN Code authentication is enabled.</p> <p><b>Note</b> When the [Require Fingerprint] check box of [Card Authentication Setting] is selected, the IC card authentication guidance screen is displayed even if [Fingerprint Authentication] is selected for Enable Guidance Screen.</p>
2	Fingerprint Authentication	<p>Selects [Enable] to use the fingerprint authentication function.</p> <p><b>Note</b> When [Disable] is selected, logging into the equipment will fail even if the finger registered is placed on a fingerprint reader.</p>
3	Authentication Mode	<p>Selects the fingerprint authentication method.</p> <ul style="list-style-type: none"> <li>• <b>[1 to 1]</b>   P.8 “1 to 1 Authentication”</li> <li>• <b>[1 to N / Filter]</b>   P.8 “1 to N / Filter Authentication”</li> </ul>
4	Auto Change Login User	<p>Selects [Enable] to make the setting so that the log-in user is switched if the equipment has already been logged into by another user.  P.16 “Logging into the equipment by authentication with fingerprint overwritten”</p>
5	Require PIN Code	<p>Selects this check box to perform two-step authentication using a PIN Code together.</p> <p><b>Note</b> Even if the [1 to 1] check box is selected for [Authentication Mode], the fingerprint authentication guidance screen for [1 to N / Filter] is displayed.</p>
6	Fingerprint Registration Screen	<p>Selects [Enable] to configure [Fingerprint Registration] on the User Account screen displayed on the touch panel. The fingerprint of the user logged into the equipment from the Fingerprint Registration screen on the touch panel can be registered and deleted.</p>
7	Fingerprint Registration Accuracy	<p>Selects the accuracy of the fingerprint registered to the equipment from [Low], [Middle] or [High]. When [High] is selected, fingerprint template with a high authentication accuracy are registered.</p>
8	Guidance screen when Fingerprint is not registered	<p>Selects [Enable] to make the Fingerprint Registration screen displayed when authentication is performed by a user whose fingerprint is not registered. To register the fingerprint, follow the instruction on the screen displayed by pressing [Fingerprint Registration].</p>
9	Fingerprint Authentication Accuracy	<p>Selects the authentication accuracy from [Low], [Middle] or [High] when the fingerprint image scanned at the time of logging in is collated with the registered fingerprint template. [Low]: The fingerprint of the person in charge becomes easy to be identified; however, that for another person also becomes easily identifiable. [High]: Impersonation by another user can be strictly prevented; however, the actual person in question tends to be rejected.</p>

Tip

- If fingerprint authentication is also performed during IC card authentication, select the [Require Fingerprint] check box of [Card Authentication Setting].



The screenshot shows a configuration window titled "Card Authentication Setting". It contains several options:

- Card Authentication**: Set to "Enable" (dropdown menu).
- Auto Change Login User**: Set to "Disable" (dropdown menu).
- Card ID is used as User Name**
- Create User Information Automatically**
- Require PIN Code**
- Require Fingerprint** (highlighted with a red circle)

- The fingerprint template and fingerprint database are not included in exported files. If the user whose fingerprint has been registered is removed during the import, the fingerprint template is also deleted.
- The fingerprint template is included in the data backed up and restored files.
- The fingerprint authentication setting, fingerprint template and fingerprint database are included in clone files created by means of the cloning function. The fingerprint template and fingerprint database are included in the [User Management] category of the clone file. The fingerprint authentication setting is included in the [Security] category of the clone file.

## Using Fingerprint Authentication Function

You can register the fingerprint, perform the login operation using fingerprint authentication and delete the registered fingerprint from the touch panel of the equipment.

### ■ Registering the fingerprint

In order to log into the equipment by means of fingerprint authentication, registration of the user's fingerprint is necessary.

To register the fingerprint, use a fingerprint reader.

#### Note

[Enable] is required to be selected for [Fingerprint Registration Screen] on TopAccess.

- 1 Log into the equipment by means of the authentication method configured in it.**
- 2 Press the user name displayed on the upper side of the screen.**
- 3 Press [Fingerprint Registration] on the User Account screen.**
- 4 Press [Registration] on the Fingerprint Registration screen.**
- 5 Register the fingerprint by following the instructions on the screen.**  
Press [Cancel] to stop the registration.

#### Tip

- When the registration has failed, remove your finger from the fingerprint reader and press [OK]. Place your finger again and reattempt the registration.
- It is recommended to register the fingerprint for 2 fingers per one user. If the registered fingerprint cannot be identified, register it again or do so for a different fingerprint.
- A fingerprint which is the same as one already existing cannot be registered.
- When [Enable] is selected for [Guidance screen when Fingerprint is not registered] on TopAccess and a user whose fingerprint is not registered attempts to log into the equipment, a message promoting the registration of a fingerprint is displayed. Register the fingerprint by following the instructions on the screen.

## ■ Logging into the equipment by fingerprint authentication

Place the finger used for the registration on the fingerprint reader. Once authentication has succeeded, the equipment becomes operable.

### Tip

The procedure to log into the equipment differs depending on the fingerprint authentication settings. For details of the fingerprint authentication settings, ask your administrator.

📖 P.14 “Logging into the equipment by the fingerprint authentication guidance screen”

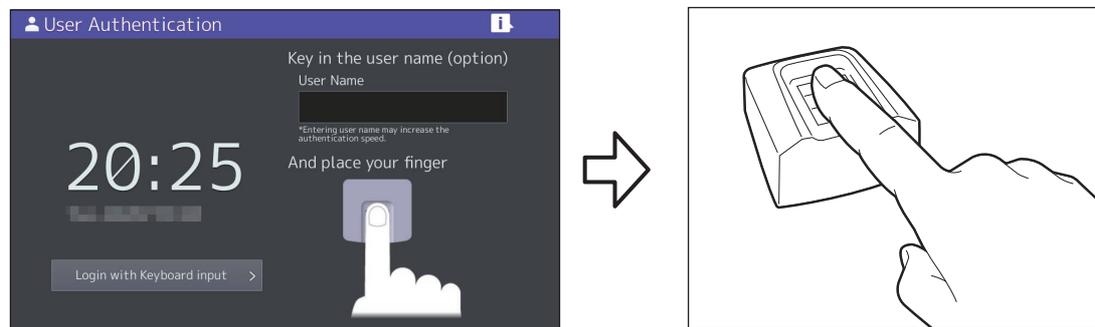
📖 P.15 “Logging into the equipment by two-step authentication”

📖 P.16 “Logging into the equipment by authentication with fingerprint overwritten”

📖 P.16 “Logging into the equipment by user authentication in each function”

## □ Logging into the equipment by the fingerprint authentication guidance screen

When the fingerprint authentication guidance screen is displayed, enter the user name and place the finger used for the registration on the fingerprint reader.



### Note

To make this screen display, [Fingerprint Authentication] is required to be selected for [Enable Guidance Screen] on TopAccess.

For details about the setting, see the reference below:

📖 P.10 “Fingerprint authentication setting”

## ❑ Logging into the equipment by two-step authentication

You can log into the equipment using IC Card authentication or PIN Code authentication together while fingerprint authentication is being carried out.

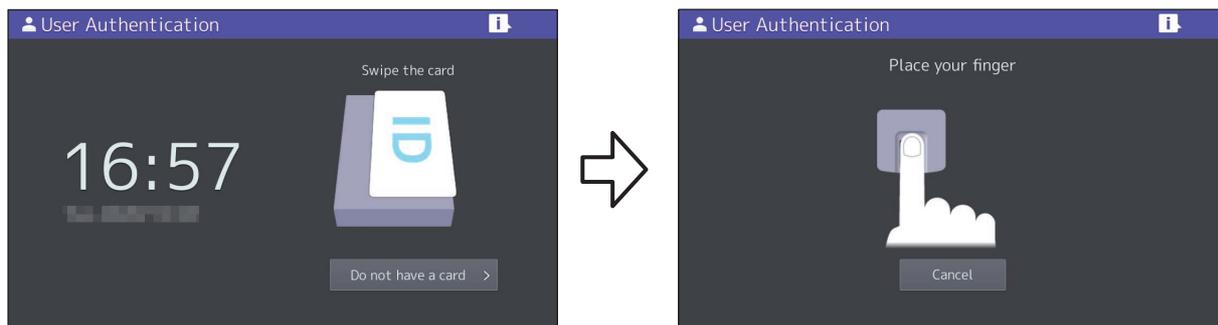
Perform authentication by following the instructions on the screen.

### Note

- Only IC Card authentication and PIN Code authentication can be used together with fingerprint authentication. Any other types of authentication are not available.
- If there is no fingerprint, register one by logging into the equipment with the user name and password entered.

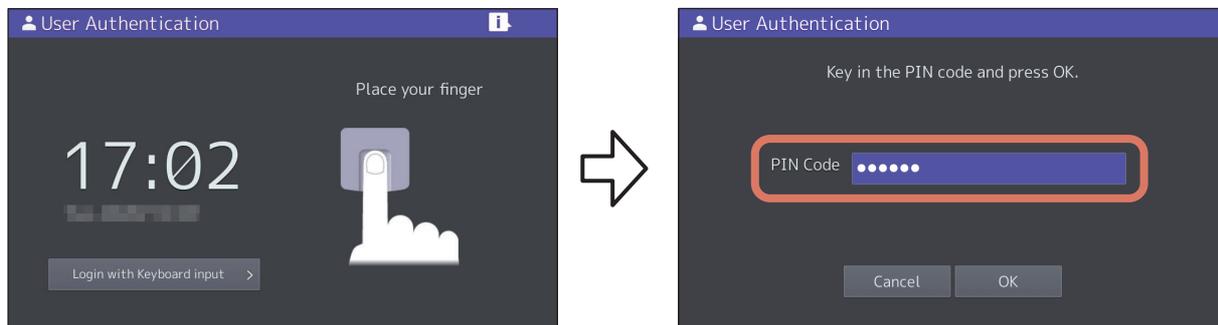
### IC Card authentication

Pass an IC card over a card reader and place the finger on the fingerprint reader. Authentication is performed.



### PIN Code authentication

Place the finger on the fingerprint reader. Enter a PIN code from the PIN code entry screen and press [OK]. Authentication is performed.



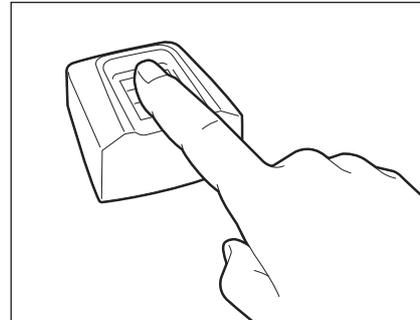
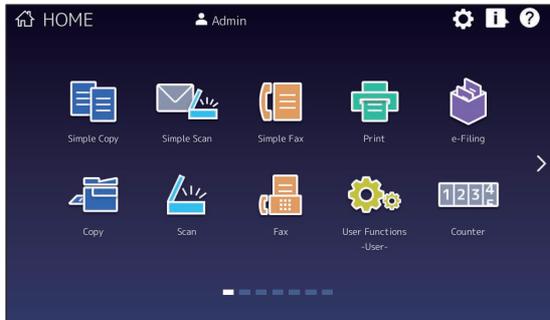
## ❑ Logging into the equipment by authentication with fingerprint overwritten

By selecting [Enable] for [Auto Change Login User] on TopAccess, a user who has already logged into the equipment with fingerprint authentication will be forcibly logged out when another user attempts fingerprint authentication in order to log into that equipment, the login user can be changed as a result.

For details about [Auto Change Login User], see the reference below:

📖 P.10 “Fingerprint authentication setting”

[HOME] screen which another user is being logged in



### Tip

When the user name entry screen is displayed after your finger is placed on the fingerprint reader, enter the user name and press [OK].

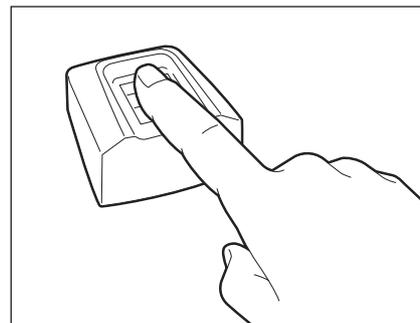
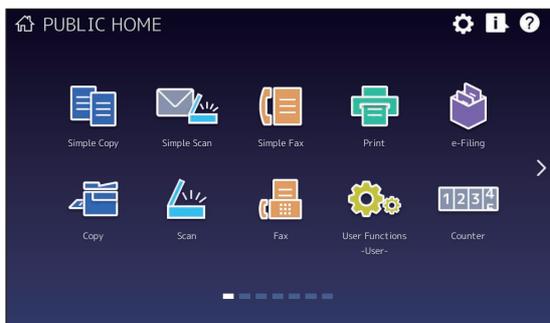
## ❑ Logging into the equipment by user authentication in each function

When [Enable] is selected for [User Authentication According To Function], you can log into the equipment with fingerprint authentication after the function button displayed on the touch panel is pressed.

For details about [User Authentication According To Function], see the reference below:

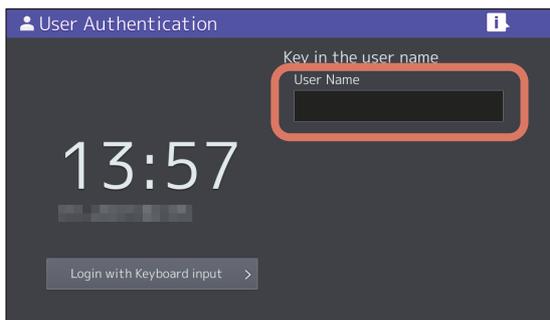
Operator’s Manual for **TopAccess**

### When your finger is placed on the fingerprint reader while the Home screen is displayed



### Tip

When the [1 to 1] check box is selected for [Authentication Mode], enter the user name to log into the equipment.



**When your finger is placed on the fingerprint reader after the function is selected on the Home screen**

The specified screen is displayed.

E.g.: When [Scan] is pressed

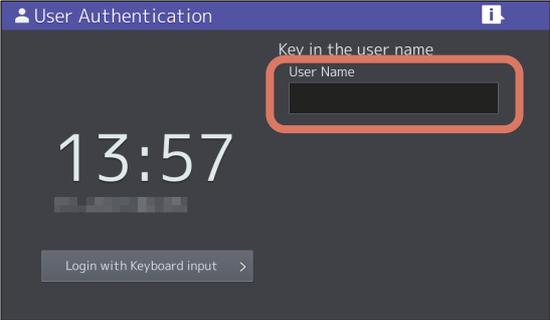


E.g.: When [Fingerprint Authentication] is selected for [Enable Guidance Screen] and the [1 to N / Filter] check box is selected for [Authentication Mode]



**Tip**

When the [1 to 1] check box is selected for [Authentication Mode], enter the user name and place your finger on the fingerprint reader to log into the equipment.



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## ■ Deleting the registered fingerprint

You can delete fingerprints registered in the equipment on the touch panel or TopAccess.

### Tip

- Deleting the fingerprint template on the touch panel  
📖 P.18 “Deleting from the touch panel”
- Deleting the fingerprint template on TopAccess  
📖 P.19 “Deleting the fingerprint template”  
📖 P.19 “Deleting only a log-in user’s own fingerprint templates”

## □ Deleting from the touch panel

Only a user’s own fingerprint templates logged into the equipment can be deleted.

- 1 Log into the equipment by means of the authentication method configured in it.**
- 2 Press the user name displayed on the upper side of the [HOME] screen.**
- 3 Press [Fingerprint Registration] on the User Account screen.**
- 4 Press [Delete] on the Fingerprint Registration screen.**
- 5 Press [OK] on the Fingerprint Deletion screen.**  
All fingerprint templates for the user logged into are deleted.  
Press [Cancel] to stop the operation and return to the [HOME] screen.
- 6 Press [OK].**  
The User Account screen is displayed.

### Note

For details about [Fingerprint Registration Screen], see the reference below:

- 📖 P.10 “Fingerprint authentication setting”

## ❑ Deleting on TopAccess

The registered fingerprint templates can be deleted on TopAccess.

### Deleting the fingerprint template

The registered fingerprint templates can be deleted by each user. All fingerprint templates registered for one user are deleted.

#### Note

For details on how to use TopAccess, see the reference below:  
Operator's Manual for **TopAccess**

- 1 Log into TopAccess with the administrator privilege (access policy mode).**
- 2 Click the [User Management] and [User Accounts].**
- 3 On the User Accounts screen, select the user whose fingerprint templates are deleted.**
- 4 Click [Delete Fingerprint].**  
The fingerprint templates for the selected user will be deleted.

#### Tip

When all the registered fingerprint templates are to be deleted in one operation, click [Delete All Fingerprint] on the User Accounts screen.

### Deleting only a log-in user's own fingerprint templates

You can delete your own fingerprint templates.  
From the [My Account], click [Delete Fingerprint] on My Account screen.

## Troubleshooting

When a trouble or error has occurred, a message is displayed on the touch panel. Moreover, the operation status is recorded on Messages Log on TopAccess. If you encounter a problem, check the message and log to solve it. If you do not know problem status and corrective actions, ask your administrator. As for any trouble in the fingerprint reader, check its operator's manual, too.

<b>Error code</b>	<b>Error message</b>	<b>Description</b>	<b>Corrective action</b>
6073 72C1	Failed fingerprint authentication. Fingerprint registration failed.	Fingerprint authentication or registration has failed.	Authentication has failed since no fingerprint is registered or the authentication accuracy of the scanned fingerprint is low. <ul style="list-style-type: none"> <li>Place your finger again or use another finger to register it and reattempt authentication. In the following cases, the authentication accuracy becomes lowered and thus authentication becomes difficult. <ul style="list-style-type: none"> <li>The finger is stained or injured.</li> <li>The fingerprint reader is stained.</li> </ul> </li> <li>When fingerprint authentication has failed, lower the level of [Fingerprint Authentication Accuracy] on TopAccess.</li> </ul>
72C2	Fingerprint registration failed because the same fingerprint is already registered.	Fingerprint registration has failed.	The same fingerprint has already been registered. Register the fingerprint by using another finger.
72C4 72C6	Fingerprint deletion failed. Failed to delete all fingerprints.	Fingerprint deletion has failed.	The deletion of a fingerprint has failed due to an internal error (internal storage device malfunction, database damage or hardware error). Contact your service representative.
72C9	Fingerprint DB was corrupted.	This error message is displayed.	A fingerprint database stored in an internal storage device is corrupted. Record the error log into TopAccess and attempt the recovery automatically. (Up to 3 times) When the recovery has succeeded, "Fingerprint DB was recovered." is displayed. When the recovery has failed, contact your service representative.
72CB	Fingerprint template was damaged.	This error message is displayed.	An internal storage device is corrupted or a fingerprint template file (fingerprint registered file) is broken. Delete all or a part of registered fingerprints and register them again. When the reregistration has failed or this message remains displayed, contact your service representative.
72CC	Fingerprint reading failed.	A fingerprint cannot be scanned correctly.	Check that the fingerprint reader is connected properly. If the error still persists, the fingerprint reader may be broken. Contact your service representative.

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DP-2528A/3028A/3528A/4528A/5528A/6528A  
FC-6526AC/6527AC/7527AC  
DP-6529A/7529A/9029A  
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**MULTIFUNCTIONAL DIGITAL COLOR SYSTEMS /  
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**Fingerprint Authentication Function**

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