USER MANUAL

B2000

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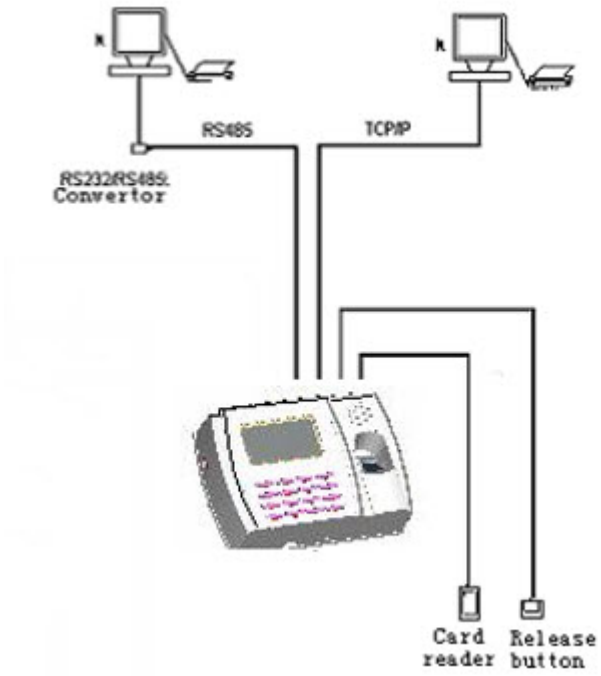
Chapter 1: Device Overview

1.1 System Construction



This device supports RS232 and TCP/IP connections to the PC.

1.2 Device Interface

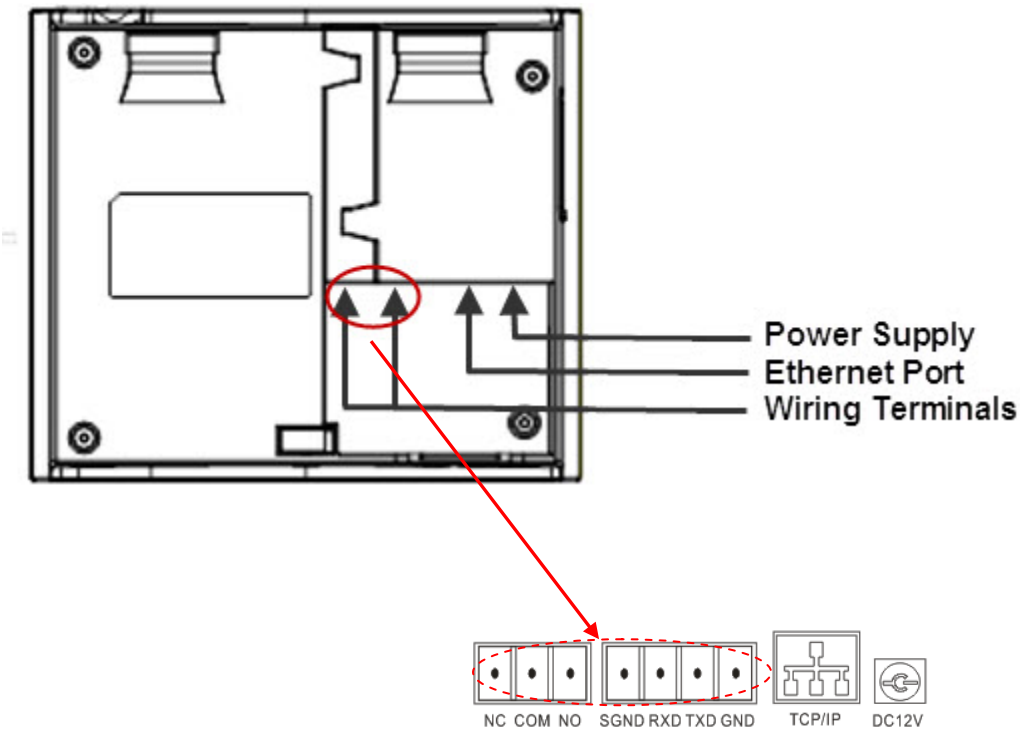
Front View:

- **Led Indicator:**

Status Indicator	
Blinking Green	Normal State
Solid Green (three seconds)	Verification Successful
Solid Red (three seconds)	Verification Failed

- **Speaker:** Plays the beep sound and voice prompts.
- **Screen**: Displays all visual information, including time and menu screens for operation prompts.
- **Fingerprint Scanner:** Used to enroll or verify user identities.
- **Keyboard:** Used to input information to the device or execute the menu operation.
- **Power Button:** The 0 key acts as the power and restart button. To power on the device, press the 0 key. To turn off the device, press and hold down the 0 button for three seconds.

Back View:



- **Power Supply:** Use to connect to the power supply.
- **Ethernet Port:** Connect the device to the Internet or connect directly to the PC.
- **Wiring Terminals:** Use to connect with the external ring, door lock or RS232 communication (or connect with the printer.

Note: You cannot use RS232 communication and connect to a printer at the same time.

Side View:

- **USB Port** – You can use the U disk to download or upload user information and verification records.

- **Reset Function** – If the device is not working properly, you can use the Reset function to restart it. To reset, open the black rubber cap, then use a sharp tool (less with 2mm tip) into the Reset button hole.

Chapter 2 – Introduction to Fingerprint Recognition Technology

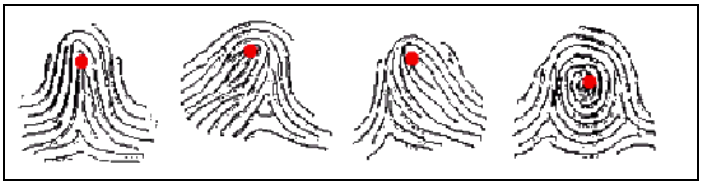
Prior to operating the B2000, it is essential to understand how fingerprint recognition technology works. Adding and verifying fingergprints is the core function of the B2000. Once a thorough understanding of fingerprint recognition technology is obtained, you will find your experience with the B2000 to be very productive and rewarding.

2.1 How Fingerprint Recognition Technology Works

When the user places his/her finger on a Fingerprint Recognition Device (i.e.the B2000) for the first time, the fingerprint is scanned and converted into a computer-generated “biometric Template”. The templates can only be recognized by each respective biometric manufacturer’s devices. Also note that these “templates” are NOT actual fingerprint images. “Real” fingerprint images cannot be re-generated from these templates.

All fingerprints contain a number of unique physical characteristics called minutiae. Minutiae include certain visible aspects of fingerprints such as ridges, ridge endings and bifurcation (forking) of ridges. Most of the minutiae are found in the core points of fingerprints, and the core points themselves are found near the center of the fingerprint on the fleshy pad of the finger.

The figure below shows the positions of core points within fingerprints. The core points are represented by the red dots in the figure below.



A core poirnt is defined as the topmost point on the innermost upward recurring ridge line.

A user is considered “enrolled” in the B2000 after his/her fingerprint(s) or password has been successfully registered in the clock’s database.

When the user places his/her finger on the B2000 fingerprint sensor during the enrollment process, the B2000 takes a picture of that finger’s key minutiae points. The B2000 then uses its proprietary mathematical algorithm and converts that picture into a unique mathematical template which is comparable to a 60-digit password. This unique template is then encrypted and stored in the B2000 database.

IMPORTANT NOTE:

Privacy issues should never be a concern when using the B2000 as **no real image of a user's fingerprint is actually stored**. In stead, **ONLY** the minutiae-based **templates** are actually stored.

Each time a user's fingerprint is scanned, the B2000 searches its database for a matching fingerprint. If the B2000 finds the user's matching fingerprint, then his/her "attendance" is recorded in the B2000 "audit log" and will be noted in subsequent reports.

2.2 Achieving Good Fingerprint Images

The quality of fingerprint images is relative to the number of minutiae points captured by the B2000's sensor. Fingerprint images not possessing an adequate number of minutiae points may be unreadable. For those users whose fingerprint images lack sufficient minutiae points and cannot be read by the sensor, it is advised to issue a password instead.

The images below show poor-quality fingerprints, characterized by smudged, faded or otherwise distorted areas on the fingerprint. These conditions can be caused by excessive dryness or wetness, excessive or insufficient pressure, or scarring of the skin at the fingertip.

The B2000 fingerprint matching algorithm is often capable of extracting the correct minutiae even without the benefit of a perfect print. However, the positioning of the finger and the relative moisture and pressure of the fingerprint when it is placed on the sensor are important contributing factors in achieving a good, consistent fingerprint match.

2.3 Correcting Wet or Dry Fingerprint Images

When the temperature is very cold or just after washing hands, fingerprints often become very dry. In this case, the user should moisturize his/her fingerprint simply by breathing on the fleshy pad of his/her fingertip prior to placing the finger on the sensor. The moisture from his/her breath should improve the recognition of his/her fingerprint.

Conversely, if the fingerprint is too wet, the ridges and valleys are rendered indistinguishable. The lack of recognizable minutiae causes wet fingerprints to be rejected by the B2000. This can be remedied simply by swiping the finger on a clean, dry towel or cloth.

2.4 How Much Pressure is Required for a Good-Quality Fingerprint?

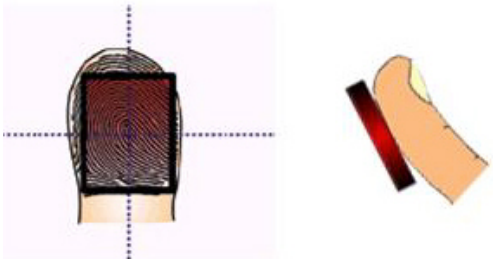
If too much pressure is applied when pressing down on the fingerprint sensor, the finger's ridges become pressed together and create an indistinguishable image. Applying too much pressure (similar to fingerprints that are too wet) will create a "blurred" image which the B2000 sensor might not recognize.

If too little pressure is applied, the resulting image will be similar to the dry fingerprint.

Be sure to maintain contact with the fingerprint sensor for 2 full seconds, until the B2000 responds. The B2000 has both audio and visual indicators which respond when the B2000 senses a finger.

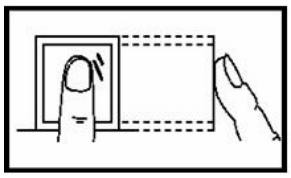
2.5 Proper Finger Placement

The user's finger should completely cover the sensor. The finger should be placed flat and in the center of the sensor. The finger should cover at least 80% of the sensor as shown below:

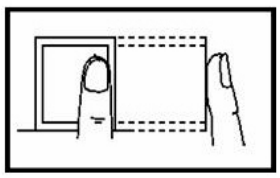


The finger should NOT be placed in the following positions:

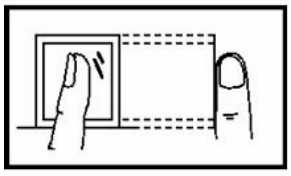
Not flat



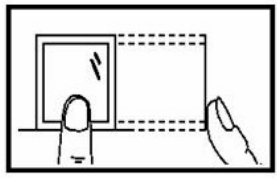
Not centered



Not flat



Not centered



Chapter 3: Identity Verification

This B2000 will NOT record an employee's attendance OR allow door access UNTIL the individual's identity is verified.

The B2000 uses various means to verify a user's identify:

- Fingerprint Matching
- Password Matching
- Card Matching (optional)

3.1 Fingerprint Matching

The B2000 supports two methods of fingerprint matching, **1:N** and **1:1**.

3.1.1 1:N Fingerprint Matching

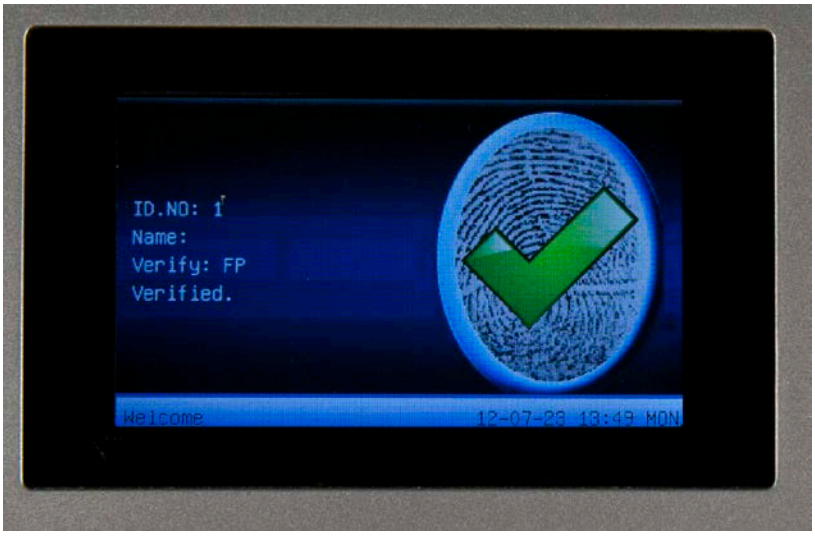
When using 1:N Fingerprint Matching, the B2000 will place the fingerprint ("1") in its temporary memory and then compare it to ALL ("N") the fingerprint templates stored in the B2000 database (up to 2800 templates).

By using 1:N matching, the user enjoys the convenience of not having to additionally enter his/her User ID number prior to placing his/her finger on the sensor. 1:N is the fastest and easiest method of fingerprint matching.

Using 1:N Fingerprint Matching

Start from the **Main** screen:

Properly place the finger on the sensor. A confirmation screen similar to the following will appear:



The clock will also respond “Thank you” when the user has successfully verified his/her identify. If the B2000 responds “Please Try Again”, the operation must be repeated.

3.1.2 1:1 Fingerprint Matching (ID. NO + Fingerprint)

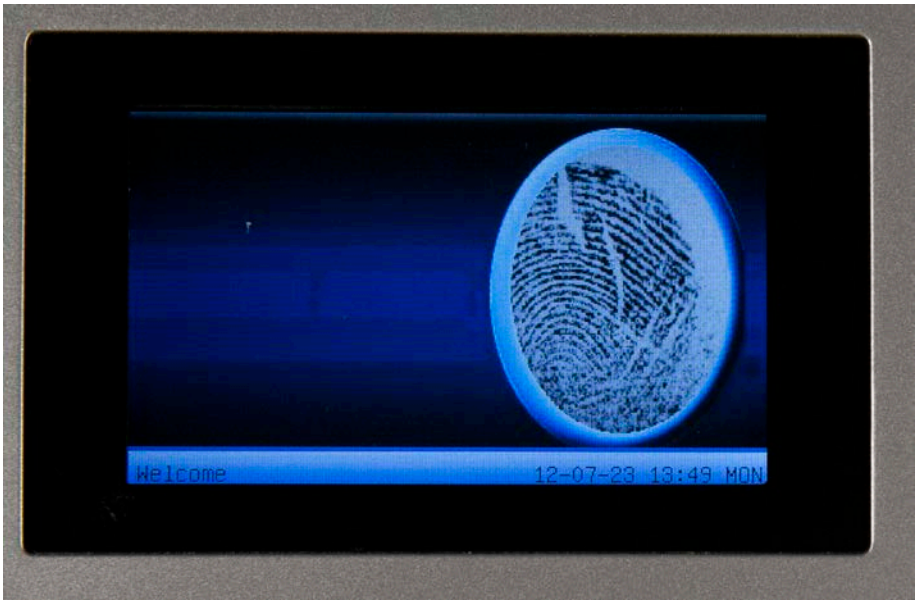
The B2000 can perform 1:1 fingerprint matching. 1:1 requires the additional step of first entering the user’s ID. No. 1:1 matching is more consistent then 1:N matching.

Using 1:1 Fingerprint Matching

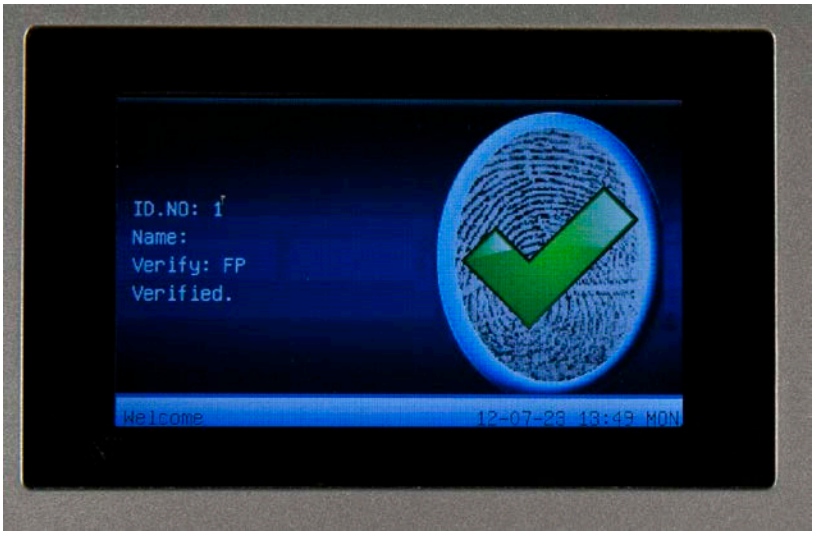
Prior to placing his/her finger on the B2000 sensor, the user must FIRST enter his/her ID number and press the M/OK key. If the fingerprint template registered with his/her user ID (“1”) matches his/her finger (“1”), the user’s identity has been successfully verified using 1:1 fingerprint matching.

Start at the **Main** screen.

Enter the **User ID No** and press the **M/OK** key. The screen will appear as follows:



The user places his/her finger on the sensor. If the B2000 recognizes the user's fingerprint, the screen will look similar to the following:



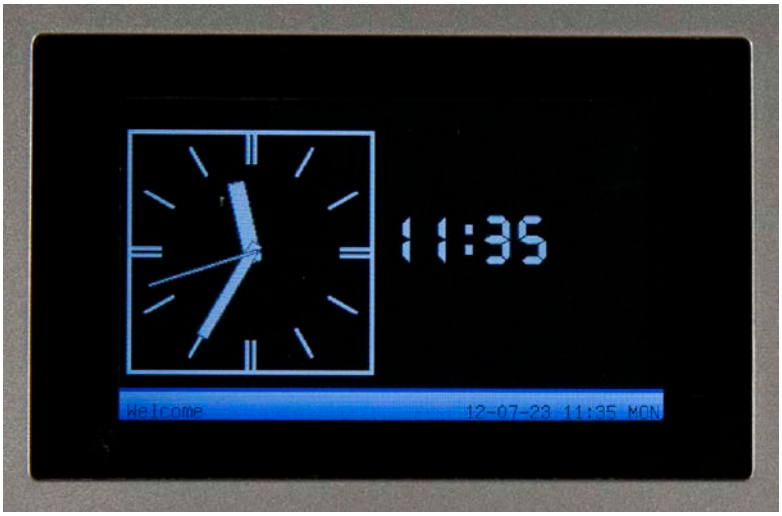
The clock will also respond "Thank you" when the user has successfully verified his/her identify. If the B2000 responds "Please Try Again", the operation must be repeated.

3.1.3 Password Matching

If too many users have difficulty with fingerprint matching, you can register them with passwords instead of fingerprints.

Using Password Matching

Start at the **Main** screen.



Enter the **User ID No** and press the **M/OK** key. The screen will prompt for a password.

If the screen does not prompt for a password, the user has not been enrolled with a password. If the B2000 prompts “Error Enroll No”, the incorrect ID number has been entered.

After entering the User Id, the user will enter his/her password and press the **M/OK** key. If a match is made, the screen a confirmation screen will appear.

The clock will also respond “Thank you” when the user has successfully verified his/her identify. If the B2000 responds “Error Password”, the operation must be repeated.

Chapter 4 – User Management

4.1 User Management

To limit the privileges of administrators on the device and to avoid an unauthorized person changing the settings or damaging the data of the device, there are three privilege levels of users: user, enroller and administrator.

- **Users** are people whose identify must be verified to gain access to a facility or to have their attendance recorded.
- **Enrollers** are authorized to enroll new users or delete users from the system.
- **Administrators** can perform the same functions as enrollers and all other operations.

User Verification: The device provides two types of verification modes for a user – Password Verification and Card Verification. These will be discussed later in this document.

Administrator Verification: Press the **M** button. At the device prompt **[Admin Affirm]**, input the Administrator ID and press the **OK** button. Hold your administrator card to the card reader or input the password.

Note: If there is no administrator in the device, the user can enter the menu without Administrator Verification.

4.2 Administrator Enrollment

To enroll an administrator, follow the steps below:

1. There is no administrator in the device by default. Press the **M** button to enter the menu of the device.

   The **Menu** screen will appear:

2. Highlight the **User Mng** icon (see screen above) and press the **M** button.

   The **User Mng** menu appears:

3. Highlight the **New User** icon and select the **M** button. The **New User** screen appears.

4. Enter an ID number for the Admin user. By default, the system assigns the next, unused number.

5. Since this clock does not have an Alpha keyboard, skip the **Name** field by using the down arrow on the keypad.

6. Select an enrollment type. You have two options for enrollment:

    a. **Enroll** – Enrolls the user with **Card Verification** only.

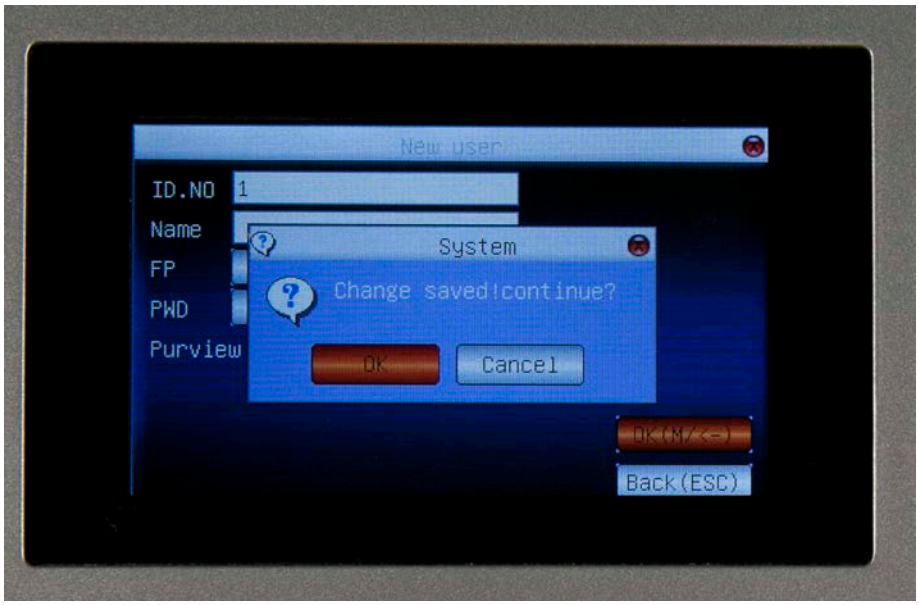
    b. **Enroll PWD** – Enrolls the user with **Password Verification**.

    To select an option, use the arrow key to highlight it, then press the **M** key.

    Please see section 2.3 for details on enrolling each option.

7. Arrow down to the **Role** field. Use the left and right arrow keys on the keypad to select **Admin**.

8. Arrow down to the **OK** (M/ <-) field and press the **M** key. A screen similar to the following appears:



9. Use the arrow keys to highlight **OK** and press the **M** key.

4.3 User Enrollment

There are two types of user enrollment: **Fingerprint Enrollment** and **Password Enrollment**. Each one is detailed separately in this section.

Please Note: Users should be added to WaspTime using the PC. Changes made to users (such as changing passwords or screen names) via the clock will NOT be synced back to WaspTime. Any edits to passwords, screen names, etc. should be made using WaspTime and pushed to the clocks.
Set up your users in WaspTime, push them to the clock, then enroll fingerprints for those users.

4.3.1 Fingerprint Enrollment

1. Press the **M** button to enter the menu of the device.

   The **Menu** screen will appear:

2. Highlight the **User Mng** icon and press the **M** button. The **User Mng** menu appears:

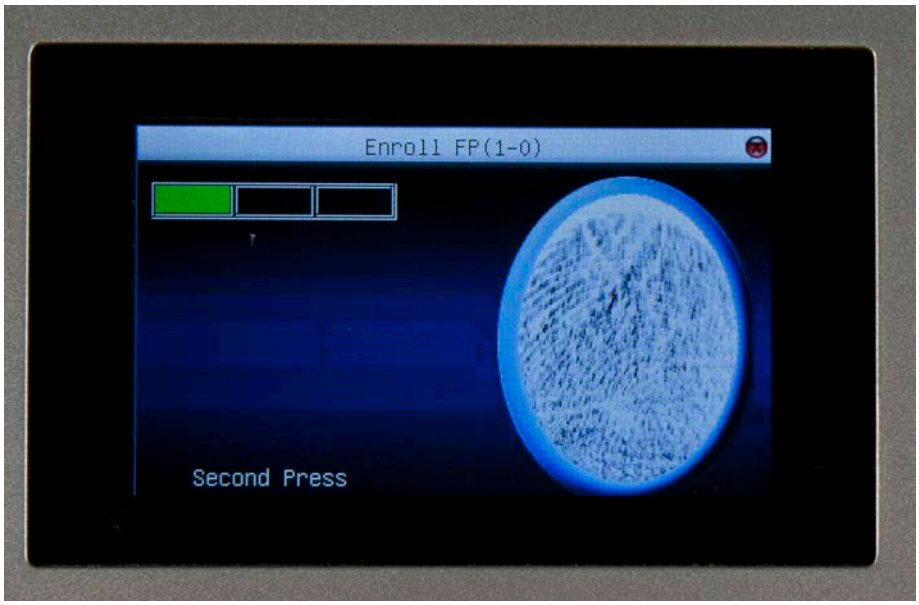
3. Highlight the **New User** icon and select the **M** button. The **New User** screen appears.

4. Enter an ID number for the user. By default, the system assigns the next, unused number.

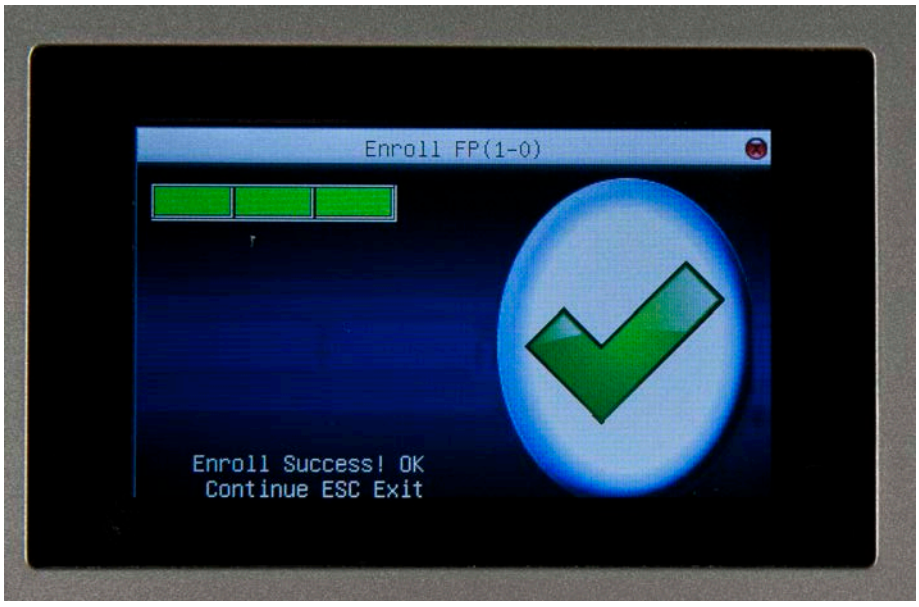
5. Since this clock does not have an Alpha keyboard, skip the **Name** field by using the down arrow on the keypad. You will need to send the name information from WaspTime at the next data upload.

6. Highlight **FP** and press the **M** key. T he **Enroll FP (1-0)** screen shown below appears:

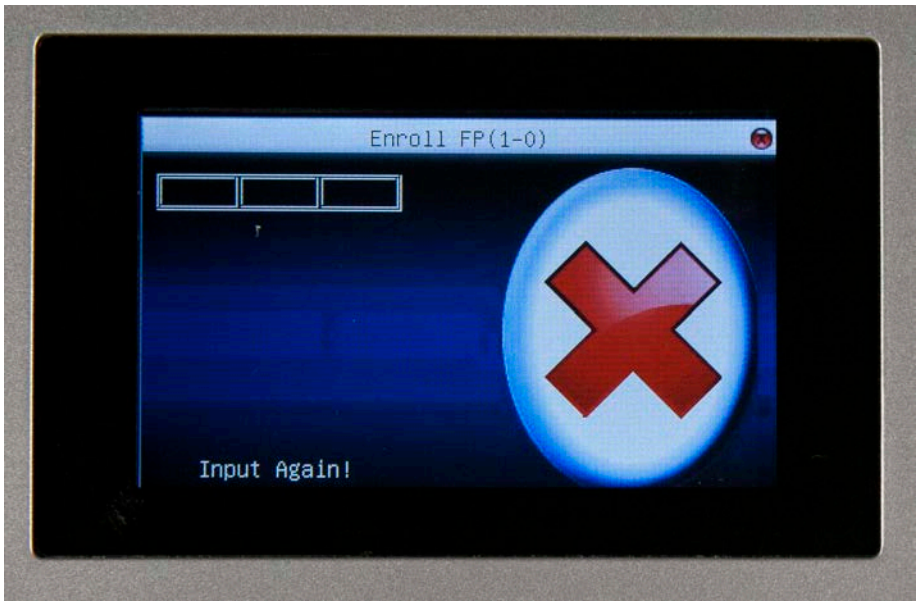
Hold the user's finger to the fingerprint scanner. The device will audibly beep and one square will display green on the screen if the fingerprint is read correctly.



7. Hold the same finger to the fingerprint scanner two more times. If a good scan is captured, the screen will display as follows:



If a good scan is not captured, the screen will display as follows:

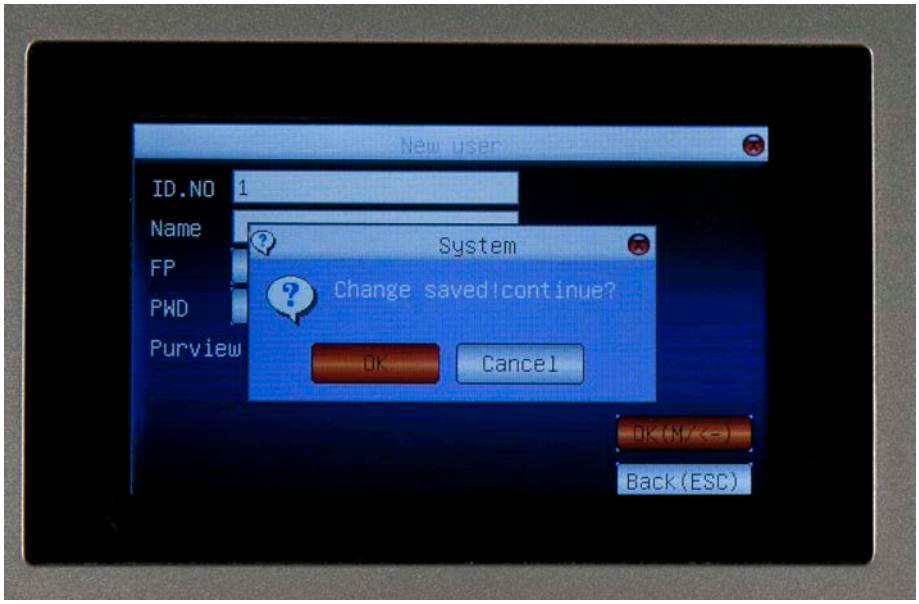


Repeat the fingerprint scanning procedures again to try to capture a good scan.

8. Press the ESC key when you have captured a good fingerprint scan. You can enroll up to three different fingers.

9. Use the left or right arrow key to scroll through the options and select the **Purview** (User Type). Options are Enroll or Admin.

10. Arrow down to the **OK** (M/ <-) field and press the **M** key. A screen similar to the following appears:



11. Use the arrow keys to highlight **OK** and press the **M** key.

4.3.2 Password Enrollment

1. Press the **M** button to enter the menu of the device. The **Menu** screen will appear:

2. Highlight the **User Mng** icon and press the **M** button. The **User Mng** menu appears:

3. Highlight the **New User** icon and select the **M** button. The **New User** screen appears.

4. Enter an ID number for the user. By default, the system assigns the next, unused number.

5. Enter a name in the **Name** field. You can also send the name information from WaspTime at the next data upload.

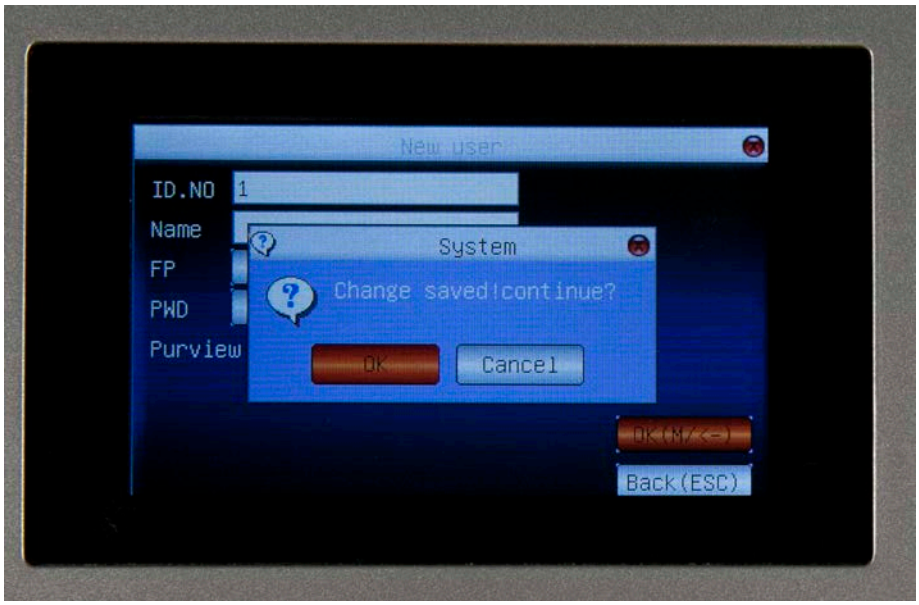
6. Use the down arrow key to highlight Enroll Pwd, then select the **M** key. The **Password** screen appears:

7. Enter the user's password (up to 8 digits) using the keyboard, then use the down arrow to go to the PWD Affirm field.

8. Re-enter the same password you just entered, then arrow down to the OK (M/ <-) field and press the **M** key.

9. The **New User** screen reappears.

10. Arrow down to the **OK** (M/ <-) field and press the **M** key. A screen similar to the following appears:



11. Use the arrow keys to highlight **OK** and press the **M** key.

Note: In the user ID number, the last letter, "P", indicates ID password enrollment.

4.4 Delete User

Follow the steps below to delete a user from the device:

1. Press the **M** button to enter the menu of the device. The **Menu** screen will appear:

2. Highlight the **User Mng** icon and press the **M** button. The **User Mng** menu appears:

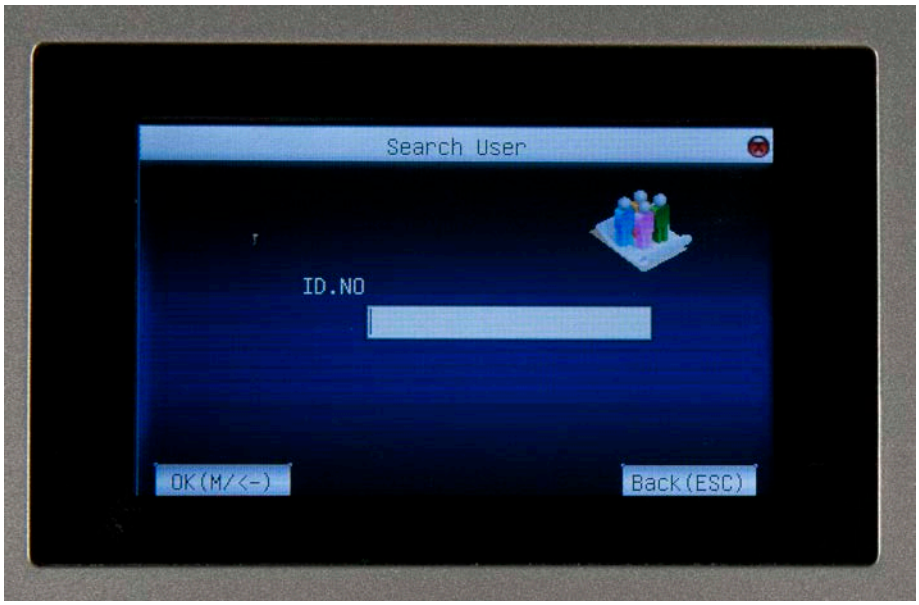
Use the right arrow key on the keypad to highlight the **Manage** icon.

A list of all users entered into the device will appear.

3. Use the arrow keys on your keypad to scroll to the user you want to delete. With the desired user highlighted, select the **M** key. A pop up menu will appear:

4. On the pop up menu, use the arrow keys on your keypad to highlight **Del User**, then select the **M** key.

   The **Del User** screen appears:

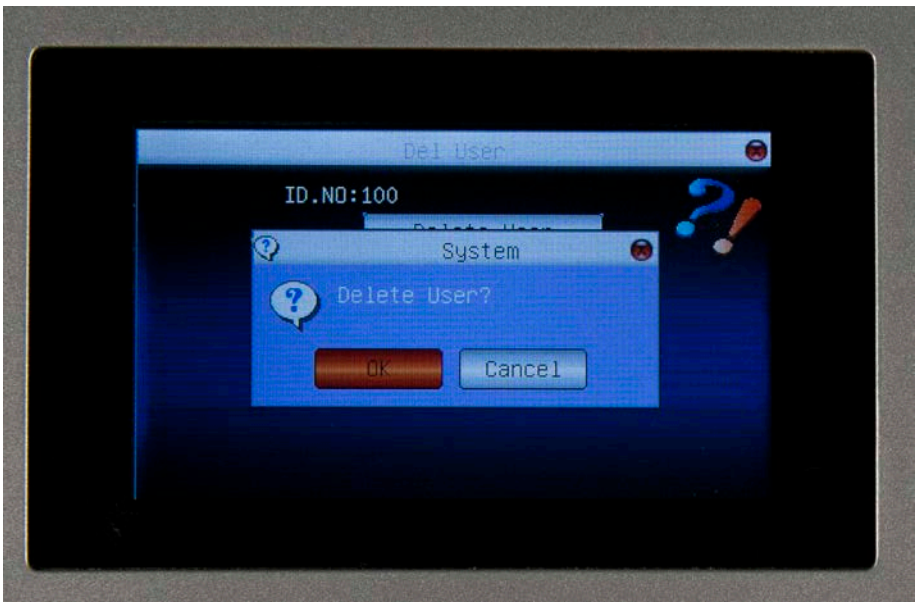


5. You have several options for deletion. Highlight the desired option, then press the **M** key. Your options are:

   a. **Delete User** – Select this option to delete the user and all associated information. A confirmation message will appear. Highlight **Yes** on the confirmation message and press the **M** key to delete the user.
   b. **Delete Password** – Select this option to delete the user's password. A confirmation message will

appear. Highlight **Yes** on the confirmation message and press the **M** key to delete the password.

c. **Delete ID Card Only** – Select this option to delete the user's card id. A confirmation message will appear. Highlight **Yes** on the confirmation message and press the **M** key to delete the ID card.

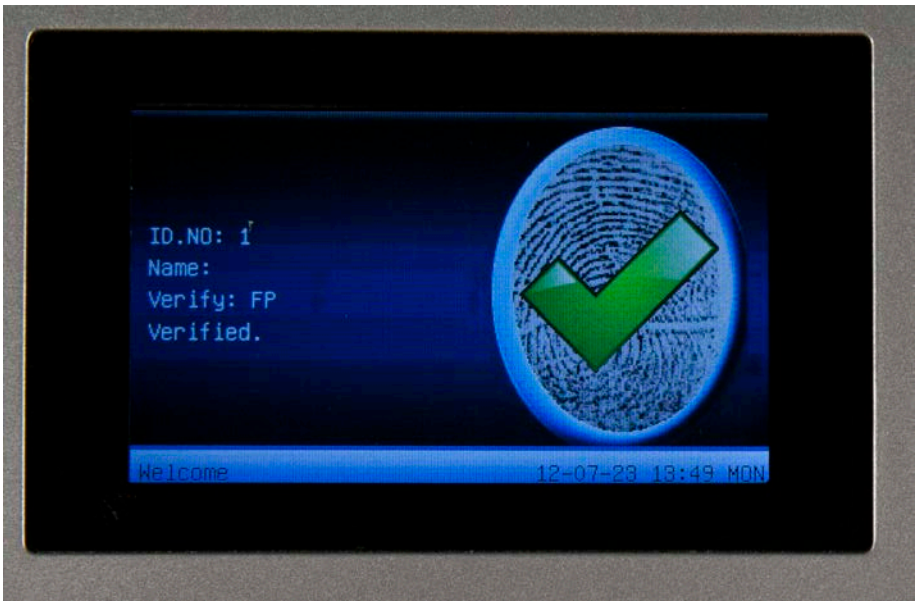


6. Press **ESC** to return to the **User Mng** menu.

4.5 Verification Mode

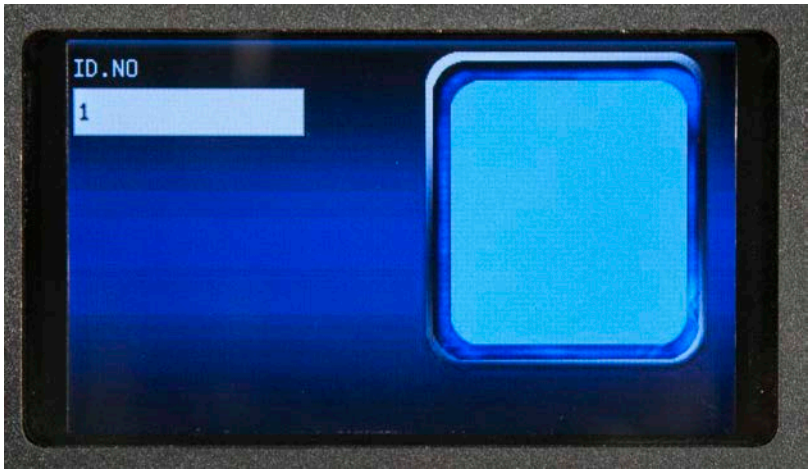
4.5.1 Fingerprint Verification

If you have enrolled a fingerprint in the device, press the finger to the fingerprint reader. I f the fingerprint is read correctly and matches an fingerprint enrolled in the system, you will hear a “Thank You and a verification screen similar to the following will appear:

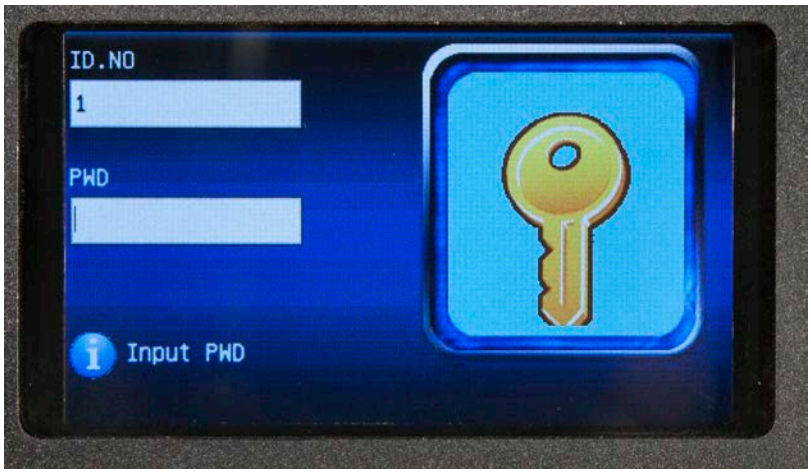


4.5.2 Password Verification

1. At the home screen of the device, use the keypad to enter the User ID. It will display on the screen:



2. Press the **M** key. A **PWD** field will appear:



3. Enter the password in the **PWD** field. You will hear a “Thank You” and a verification screen will display. If the verification process fails, you will hear “Incorrect Password” and a warning screen will briefly display. The **PWD** screen will reappear allowing you to re-enter the password.

4.6 Browse Attendance Records

You can browse the users' attendance records on the device without having to connect to the PC.

4.6.1 Inquiry Methods

The device supports two methods to view the records:

Method 1:

1. Press the **M** button to enter the menu of the device. The **Menu** screen will appear:

2. Highlight the **User Mng** icon and press the **M** button. The **User Mng** menu appears:

3. Use the right arrow key on the keypad to highlight the **Manage** icon.

A list of all users entered into the device will appear. Note that a Key icon in the PWD field indicates the user has been enrolled with a password. A Lock icon before the user's ID number indicates the user is a System Administrator.

4. Highlight the user for whom you want to view the attendance log, then select the **M** key. A pop up menu will appear:

5. On the pop up menu, use the arrow keys on your keypad to highlight **Record**, then press the **M** key. The screen will display all time entries for the selected user.

Method 2:

After user verification succeeds, before the device returns to the home screen, press the **M** key. The attendance record for the user who just punched in or out will display.

4.6.2 To browse attendance records:

Attendance records are displayed newest to oldest. By default, the records are displayed in “compact” form.

Multiple punches on the same day are listed together in line. To view details on one day’s punches, highlight the line for which you want to view details, then press the **M** key. Only the selected day’s punches will appear.

Chapter 5 – Communication

The B2000 can communicate via the Network (Ethernet), RS/232 or RS485.

5.1 Network (Ethernet) Connection

1. Press the **M** button to enter the menu of the device. The **Menu** screen will appear:

2. Use the right arrow to highlight the Comm. icon, then press the **M** key.

The **Communication** menu appears:

3. Highlight the **Network** icon and press the **M** key. The Network screen appears:

The following network options are available:

Clock IP Address: The default IP address is 192.168.1.239. You can modify this address. Do NOT use an IP address that is already being used by another network device.

SubnetMask: The default mask is 255.255.255.0. You can modify the subnet mask.

Gateway Address: The Default gateway address is 0.0.0.0. You can modify the gateway address.

Network Speed: There are three options for your network speed: Auto, 10M and 100M.

4. Scroll with the up and down arrows to place your cursor in the desired field. Enter you preferred network communication settings.
5. After making changes, press the **M** key. A confirmation screen will appear.
6. Highlight the **OK** button on the confirmation screen and press the **M** key.

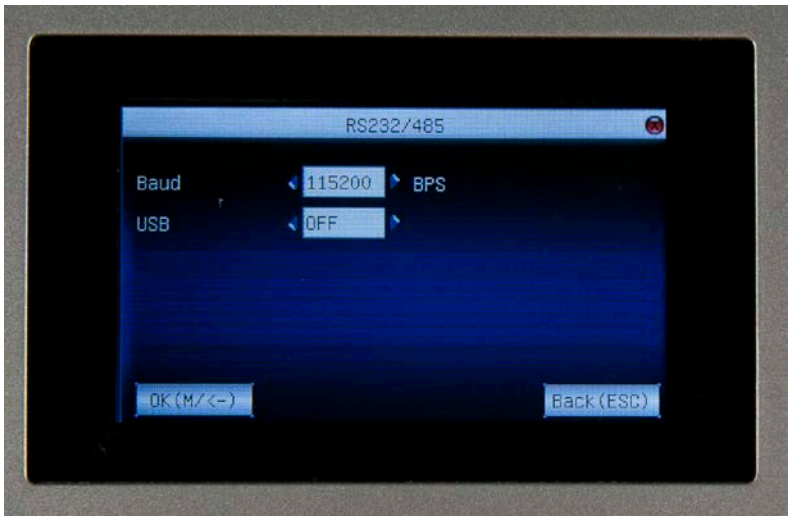
5.2 RS232/485 Connection

1. Press the **M** button to enter the menu of the device. T he **Menu** screen will appear:

2. Use the right arrow to highlight the **Comm**. icon, then press the **M** key.

3. The **Communication** menu appears. Highlight the RS232/485 icon, then press the M key.

The **RS232/485** screen appears;



The settings available on this screen are:

Baud – Sets the baud rate. Use the left and right arrow keys to set the rate.

USB – Turns the USB capability off and on.

3. Use the up and down arrow key to place your cursor in the desired field.
4. Make any needed changes, then press the **M** key. A confirmation screen will appear.
5. Highlight the **OK** button on the confirmation screen and press the **M** key.

5.3 Security

This feature is not currently utilized by WaspTime.

5.4 Web Setup

This feature is not currently utilized by WaspTime.

Chapter 6 – System Options

1. Press the **M** button to enter the menu of the device. The **Menu** screen will appear:

2. Use the right arrow key to highlight the **System** icon, then press the **M** key.

The **System** menu displays.

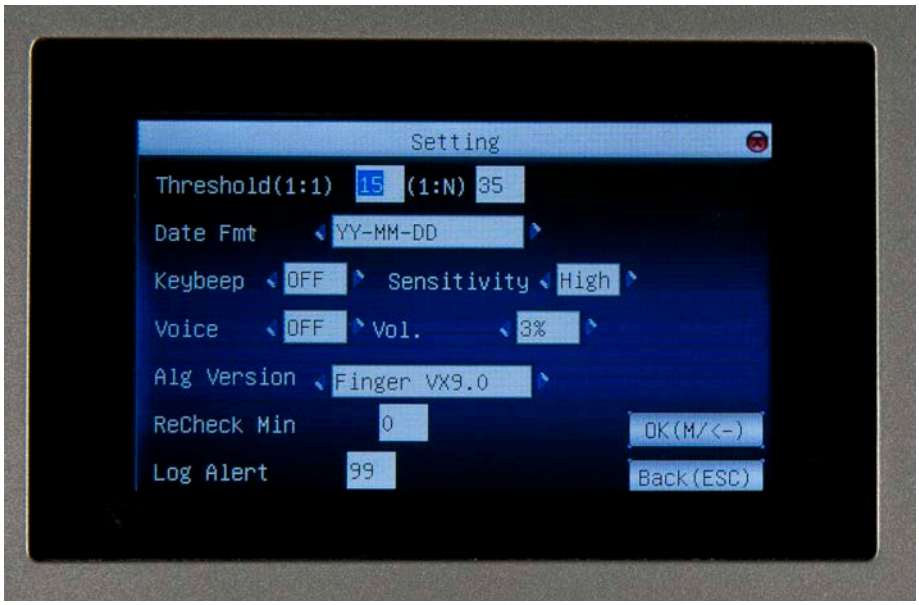
You have seven options on this menu:

- **System** – Controls the date format, key beep on/off, Voice on/off, volume, recheck minutes and Log Alert.
- **Data Mng** – Data management allows you to delete the attendance log, photos, BL-photos, clear roles or delete pictures.
- **Update** – Updates the firmware on the device.
- **Display** – Controls the number of times a user can try to re-enter a password, the clock mode and picture/clock delay.
- **Reset** – Resets all functions to their default settings, reset all keyboard settings (function keys) or resets other parameters.
- **Bell** (not supported on this device)
- **Misc. Set** – Controls the sleep time and lock power on/off.

6.1 System Menu

1. Highlight the **System** icon and press the **M** key.

The **Setting** screen appears:



2. You can make changes to the settings on this screen as needed. Your options are:

- **Date Fmt** – Use the left and right arrow keys on the keypad to change the way the date is displayed on the device. By default the date format setting is YYYYMMDD. Scroll through the options to change the format. There are ten date format options:

  YY-MM-DD
  YY/MM/DD
  YY.MM.DD
  MM-DD-YY
  MM/DD/YY
  MM.DD.YY
  DD-MM-YY
  DD/MM/YY
  DD.MM.YY
  YYYYMMDD

- **Keybeep** – Use the left and right arrow keys on the keypad to turn the keybeep on and off. When turned on, the device will emit a sound when a key is pressed. The default setting is on.

- **Voice** – Use the left and right arrow keys on the keypad to turn the voice sound on and off. When turned on, the device will provide audible confirmation when user verification succeeds or a warning when verification fails. The default setting is on.

- **Vol** – Use the left and right arrow keys on the keypad to adjust the volume of the keyboard sound and voice confirmation. Volume is set by percentage.

- **ReCheck Min** – Sets the amount of lag time, in minutes, within which multiple punches will not be recorded. For example, with the ReCheck Min set to 1, if a user swipes their card twice within one minute, only the first swipe is recorded on the device.
- **Log Alert** – Enter the number 0 – 99, of verifications you want to store in the attendance logs. When the set capacity if reached, the device will warn you to download the data.

6.2 Data Management Menu

1. Highlight the **Data Mng** icon and press the **M** key.

The **Data Mng** screen appears:

2. You can make changes to the settings on this screen as needed. Your options are:

Delete Attlog – Delete all attendance records on the device.

Delete Photo – Deletes all photos uploaded to the device.

Delete BL Photo -

Delete All – Deletes all information uploaded to the device.

Clear Purview – Clears all user roles.

Delete Picture

6.3 Upload Firmware

If you want to upgrade the firmware on the device, use the Upload Firmware feature. New firmware is put on a USB drive and uploaded to the clock. Contact Technical Support if you need to update the firmware in the clock.

1. Plug a USB connection into the port on the side of the device. See graphic on page 4.

2. Highlight the **Upload** icon and press the **M** key.

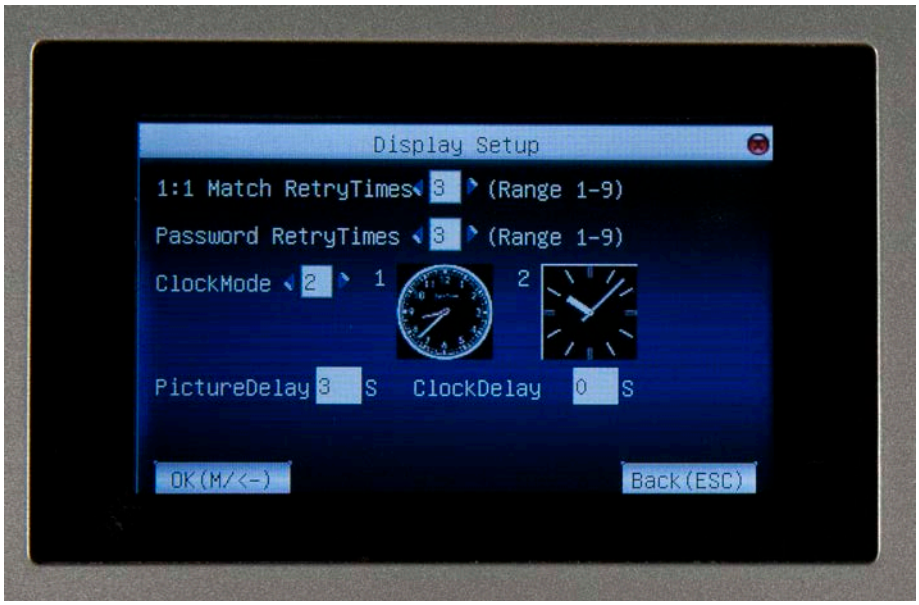
3. A confirmation message will appear.

6.4 Display

The **Display** feature allows you to set Password Retry Times, ClockMode, PictureDelay and ClockDelay.

1. Highlight the **Display** icon and press the **M** key.

The **Display** screen appears:



2. Set the options as needed on the **Display** screen. Options are:

- **Password Retry Time** - Use the left and right arrow keys to set the number of times a user can re-enter their password before the device times out. The default is 3, maximum is 10.

- **ClockMode** – Chose between 2 styles (round or square).

- **PictureDelay** – Determines how often the picture on the Clock-In screen will change (picture/slide loop).

- **ClockDelay** – Determines how long the clock will remain displayed when it appears during “Clock-in”.

3. After you have made changes, press the **M** key. A message will appear stating “*Setup Success. Press OK to go back!*”

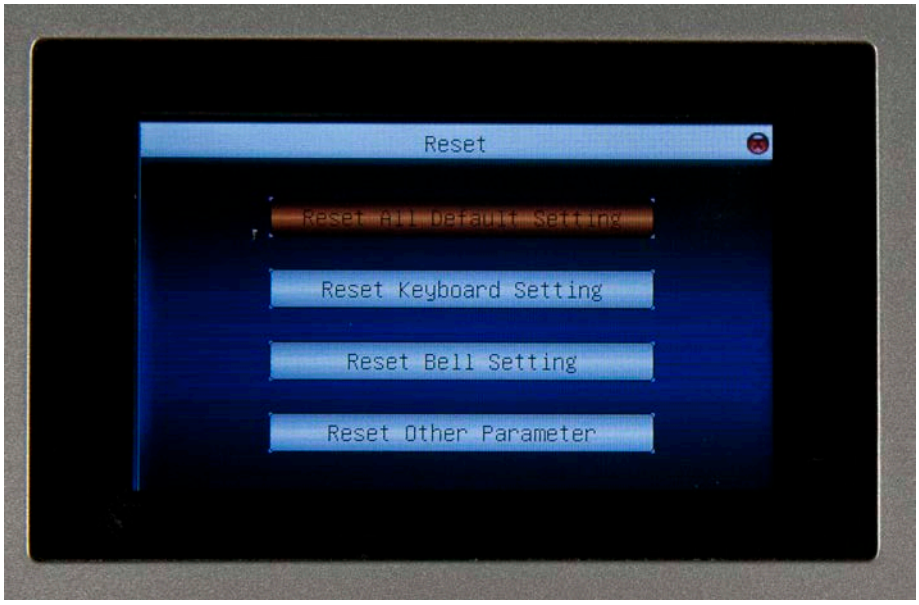
4. Press the **M** key to return to the **System** menu.

6.5 Reset

This option resets the device to its factory default settings. Reset does not erase user information or attendance records.

1. Highlight the **Reset** icon and press the **M** key.

The **Reset** screen appears:



2. Use the up and down arrow keys to scroll to the desired option. Options are:

- **Reset All Default Settings** – Resets all parameters to default.
- **Reset Keyboard** – This function does not apply to this device.
- **Reset Bell Settings** – This function does not apply to this device.
- **Rest Other Parameters** – Resets all other parameters that have been changed from default.

3. After you have made changes, press the **M** key. A message will appear stating "*Reset Complete!*".

4. Press the **M** key to return to the **Reset** screen.

5. Press the **ESC** key to return to the **System** menu.

6.6 Bell

This function does not apply to this device.

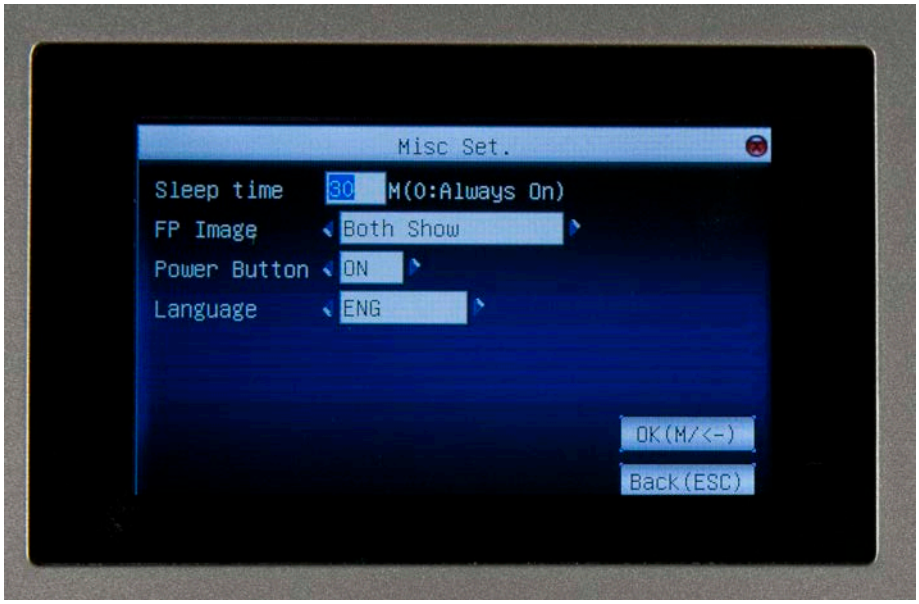
6.7 Misc. Set

The functions under Misc. Settings, Sleep Time and Lock Power, help prolong the life of the device.

This option resets the device to its factory default settings. Reset does not erase user information or attendance records.

1. Highlight the **Misc. Set** icon and press the **M** key.

The **Misc. Set** screen appears:



2. Use the up and down arrow keys to scroll to the desired option. Options are:

- **Sleep Time** – Enter the number of seconds the device should be idle before it enters “Sleep Mode” to conserve power. Enter “0” to set the device to “Always On”.
- **Lock Power** – This function does not apply to this device.

3. After you have made changes, press the **M** key. A message will appear stating “*Changes Saved Successfully!*”.

4. Press the **M** key to return to the **Reset** screen.

5. Press the **ESC** key to return to the **System** menu.

Chapter 7 - Date/Time

This screen allows you to manually set the date and time.

1. On the Main Menu, highlight the **Date/Time** icon and press the **M** key.

The **DateTime** screen appears:

2. Use the up and down arrow keys to put your cursor in the desired field.

3. Use the right and left arrow keys to set the date (year, month and date) and/or time (hour, minute and second).

4. Use the right and left arrow keys to select the **Time Format**. Options are 12 hour or 24 hour.

5. Use the right and left arrow keys to turn DLST (Day Light Savings Time) on or off. If DLST is turned on, you have several additional options to select:

    a. **Date Mode** – Use the left and right arrow keys to select how you want the date to display. Options are

MM-DD hh:mm or MM-WS-WK hh:mm.

b. Enter **Start** and **End** times. T he allowed range for number of weeks (WS) is 1-6. The allowed range for day of the wk (WK) is 0-6. 0 = Sunday, 1=Monday, etc.

6. After you have made changes, press the **M** key. A message will appear stating "*Changes Saved Successfully!*".

7. Press the **M** key to return to the **Main** Menu.

Chapter 8 - Pen Drive

This feature allows you to manually upload and download data (i.e. fingerprint templates, attendance records/transaction logs and pictures/images) between the device and a USB disk/PenDrive.

1. Insert the USB PenDrive into the device.

2. On the Main Menu, highlight the **PenDrive** icon and press the **M** key.

The **USBDrive** screen appears.

3. Use the up and down arrow keys to highlight the desired option. Options are:

   - **Download** – Copies data from the device to the USB disk/PenDrive.
   - **Upload** – Copies data from the USB disk/PenDrive to the device.

4. After highlighting the desired option, press the **M** key. Your options will vary depending on whether you selected **Download** or **Upload**.

   Download Options:

   - **Download Attlog** – Copies attendance records/audit logs from the device to the USB disk/PenDrive. The following files are copied to the USB disk/PenDrive:
     - **X_attlog.dat** (attendance log)
     - **X_oplog.dat** (management log)
     - **X_user** (User information including templates.)

Note: The X represents the machine number from which the data file(s) originated.

- **Download User** – Copies users' information (including templates) from the device to the USB disk/PenDrive.
- **Download SMS** – Copies Short Message(s) from the device to the USB disk/PenDrive. Not all devices support the use of SMS messaging.
- **Download Photo** – Copies any photos from the device to the USB disk/PenDrive.

Upload Options:

- **Upload User** – Copies users' information from the USB disk/PenDrive to the device.
- **Upload SMS** – Copies Short Message(s) from the USB disk/PenDrive to the device. Not all devices support the user of SMS messaging.
- **Upload Pictures** – Copies pictures from the USB disk/PenDrive to the device. K

5. Use the up and down arrow keys to select the desired option, then press the **M** key.

6. A confirmation message will appear when the upload/download is successfully completed.

7. Press the **M** key to close the confirmation screen.

8. Press the **M** key to return to the **Main** menu.

Chapter 9 - Auto Test

This device has a built-in Auto Test feature that allows you to quickly verify major system functions are operating properly.

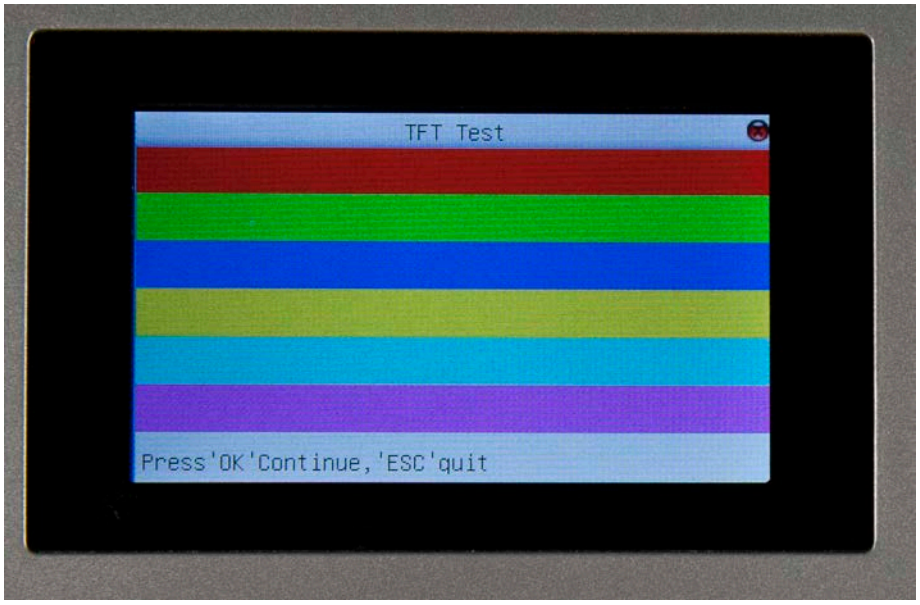
1. From the **Main** menu, highlight the **Auto Test** icon and press the **M** key.

The **Auto Test** screen appears:

2. Use the up and down arrow keys to scroll to the desired test. Options are:

- **All Test** – Performs all test in succession.

- **TFT Test** – Tests if all TFT colors are displaying properly. When this option is selected the following screen appears:



Press the **M** key. T he all-white screen appears.

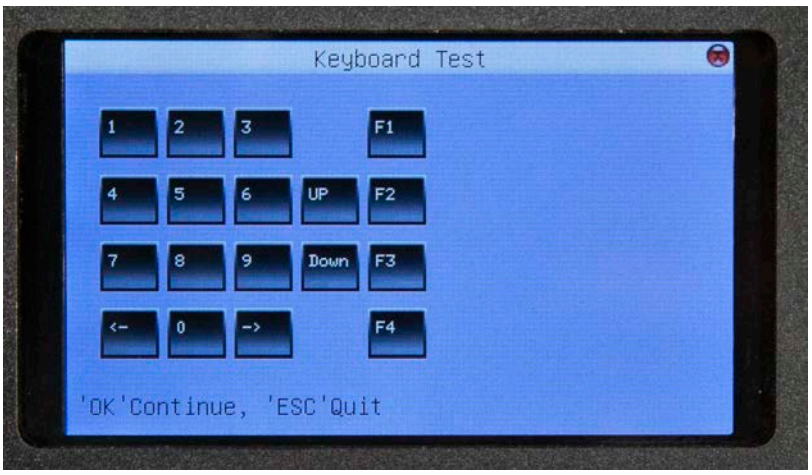
Press the **M** key. T he all-black screen appears.

These screens indicate that all colors are displayed and the device's color TFT screen is operating properly.

- **Audio Test** – This option allows you to test if all of the device's pre-recorded voice messages are correct (i.e. *Thank you*, *Please try again*, etc.)

Press the **M** key. A recorded message will play. Keep pressing the **M** key to hear all recorded messages on the device.

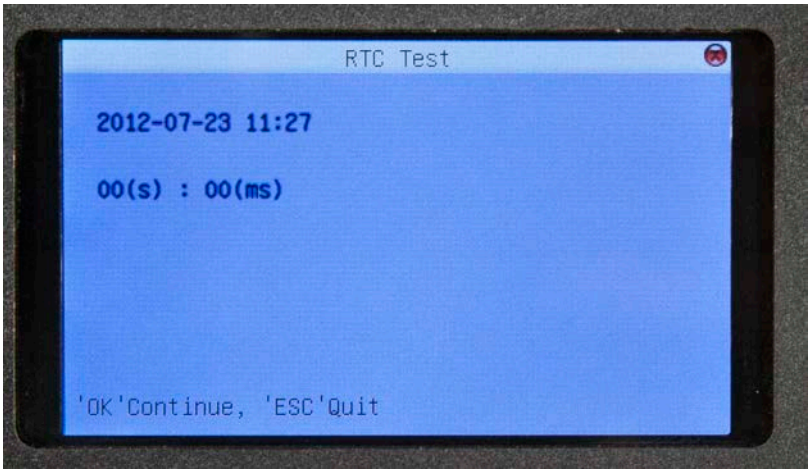
- **Keyboard Test** – This feature allows you to ensure that each key on the keypad is responding properly. When this option is selected the following screen appears:



This screen displays the keys for every corresponding key on the device keyboard. As you touch each "keypad key", its corresponding key on the screen display will highlight in red. If the key is not working properly, it will highlight in gray/black.

To exit the **Keyboard Test** screen and return to the Auto Test menu, press the **M** key or press **ESC**.

- **RTC Test** – The Real-time clock (RTC) test allows you to ensure the clock is operating normally, down to the millisecond. When this option is selected the following screen appears:



The **Date** (YYYY-MM-DD) and **Time** (HH:MM). Beneath the date/time the seconds and milliseconds appear – 00(s) : 08(ms).

Press the **M** key once and the seconds and milliseconds advance in real-time, as does a stop watch. Each time you press the **M** key, the "stop watch" will reset to zero, then start again.
Press the **ESC** key to return to **the Auto Test** menu.

Chapter 10 – Record (Attendance/Audit Logs)

The device stores user attendance/door-access records. These records can be viewed directly from the device screen display.

1. From the **Main** menu, highlight the **Record** icon and press the **M** key.

The **Record** screen appears:

2. Enter the ID number of the user for which you want to view attendance records in the **ID No** field. If you want to view records for all users, leave this field blank.

3. Use the down arrow key to scroll to the **Start** date field. Enter an (optional) start date for the record.

4. Use the down arrow key to scroll to the **End** date field. Enter an (optional) end date for the record.

5. Press the **M** key. An example of an attendance record is shown below:

Chapter 11 – System Information

This menu provides information regarding the device's storage utilization and firmware.

1. From the **Main** menu, highlight the **Sys Info** icon and press the **M** key.

The **Sys Info** screen appears:

2. The **Sys Info** screen is divided into two tabs: **Records** and **Device**. You can scroll between the tabs using the left and right arrow keys.

- **Records Information** – An example of the **Records** tab is shown above. This tab displays:
  - o Total enrolled users
  - o Total enrolled managers
  - o Total enrolled passwords
  - o Total fingerprint storage capacity.
  - o Total attendance log storage capacity.

- **Device Information** – An example of the **Device** tab is shown below. This tab displays:
  - o Device Name
  - o Serial Number
  - o MAC Address
  - o Firmware Version number
  - o Vendor
  - o Manual Time

Appendix I – Troubleshooting

Trouble	Cause & Measure
Power LED is off	**Cause**: No power or lack of voltage. **Solution** : Check and examine the connection of power supply. Measure the supply voltage, ensure that it is 12VDC.
Device is unable to connect with PC	**Cause**: The connection problem. **Solution**: Check and examine the connection of RS232 or TCP/IP.
When the device is powered on, it cannot enter the main menu	**Cause**: Chip-on-board is broken. **Solution**: Need to contact supplier and ask for repair.
The time display as “00:00” after restarting	**Cause**: The clock battery is broken. **Solution**: Contact the reseller to replace a battery.
Keystroke without sound	**Cause**: ①Trouble in the buzzer, loud- speaker or circuit. ②Set the parameter button beep to “N” in the device **Solution**: ①Need to replace the buzzer and loudspeaker. ②Enter the Menu - Options-System Opt - Adv Option - Button Beep, turn the parameter to “Y”

Appendix II – WiFi Function

This device has included WiFi functionality. WiFi modules can be built-in to the device.

WiFi is a type of WLAN (wireless local area network) that uses the 802.11b specification. The biggest advantage of WiFi is the high speed of wireless transmission, which is up to 11 Mbps. WiFi is compatible with most 802.11 DSSS devices. IEEE 802.11b wireless networking specification is a variant of IEEEE 802.11. The maximum bandwidth is 11 Mbps. If the signal is weak or there is interference, the bandwidth can adjust to 5.5Mbps, 2Mbps or 1Mbps. The automatic bandwidth adjustment can protect network stability and reliability effectively.

The main features are: high speed, high reliability, communication distance up to 305 meters in open areas, and communication distance of 76 to 122 meters in closed areas. WiFi is convenient, and network costs are lower than in existing wired Ethernet.

Appendix III – Environmental-Friendly Use Description

The Environment Friendly Use Period (EFUP) marked on this product refers to the safety period of time in which the product is used under the conditions specified in the product instructions without leakage of noxious and harmful substances.
The EFUP of this product does not cover the consumable parts that need to be replaced on a regular basis such as batteries and so on. The EFUP of batteries is 5 years.

Names and Concentration of Toxic and Hazardous Substances or Elements

Parts Name	Toxic and Hazardous Substances or Elements					
	Pb	Hg	Cd	Cr6+	PBB	PBDE
Chip resistor	×	○	○	○	○	○
Chip capacitor	×	○	○	○	○	○
Chip inductor	×	○	○	○	○	○
Chip diode	×	○	○	○	○	○
ESD components	×	○	○	○	○	○
Buzzer	×	○	○	○	○	○
Adapter	×	○	○	○	○	○
Screws	○	○	○	×	○	○

○: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.

×: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006.

Note: 80% of the parts in this product are manufactured with non-hazardous environment-friendly materials. The hazardous substances or elements contained cannot be replaced with environment-friendly materials at present due to technical or economical constraints.