

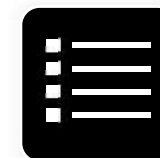
ULTIMA10

Workforce Data Collection Terminal



I n s t a l l a t i o n G u i d e

This guide provides installation instructions only. For information regarding actual operation and configuration of the **ULTIMA10** Time & Attendance terminal, refer to the user manual.



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Standard modules

WIFI

4G

GPS

Relay

Internal Optional Modules

POE+

Backup battery

Cameras:

F33 facial Recognition

OR 2MP Camera

Card modules:

RFID

OR MultiCard reader_MT30

External Optional Modules

Fingerprint Scanners:

Green-light Fingerprint

OR White-light Fingerprint

Card Readers:

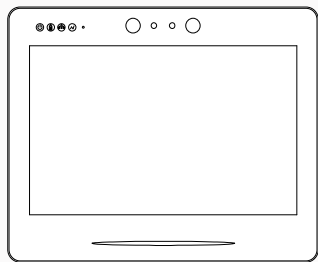
Magnetic

OR Barcode

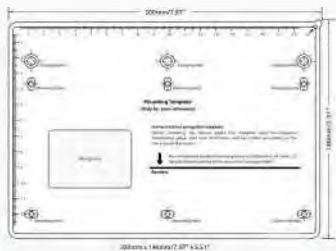
OR MultiCard reader_MT-PRO/MT-FULL



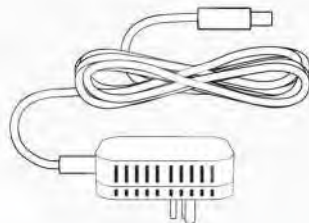
Packing list



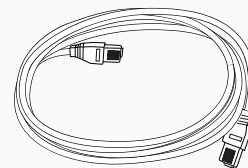
Terminal



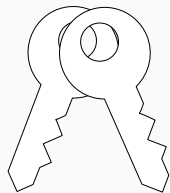
Mounting template



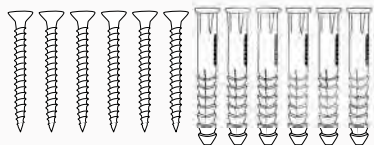
Power Supply



Network Cable



Keys (2)



Screws & Anchors



Relay connector 2-pin (1 x), 4-pin (1 x), 6-pin (3 x) soldered on mother board (Standard)

The contents of the package may vary depending on the modules that you choose.

Pre-Installation

Required tools



IMPORTANT

To avoid damaging the main board, always wear an anti-static wrist strap when touching the main board in any way, including connecting and disconnecting wires.

- Do not remove the cover assembly from its anti-static packaging until you are ready to install the device.
- Save the paper mounting template and any other printed documents.



Tape Measure



Level



Wire Cutter



Screwdrivers



Drywall Knife



Power Drill

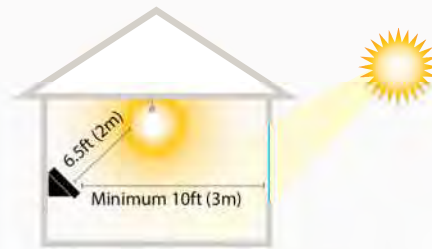
Note: Because of the small size of certain screws, we recommend that you use small screwdrivers with magnetic tips.



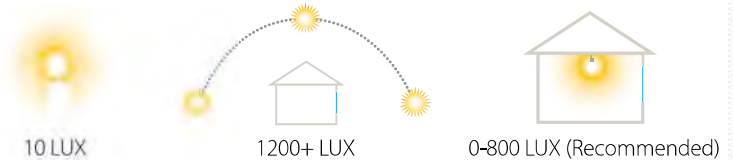
Installation Environment

Location

- Ultima is designed for any internal environment. In rare cases, user sites may contain agents in nature that can corrode the electronics assemblies in these devices. In the event of this situation, users must move the devices to a suitable environment.
- Install the Ultima in an area where the screen is not exposed to direct sunlight or other high-intensity lighting that could make the screen difficult to read.



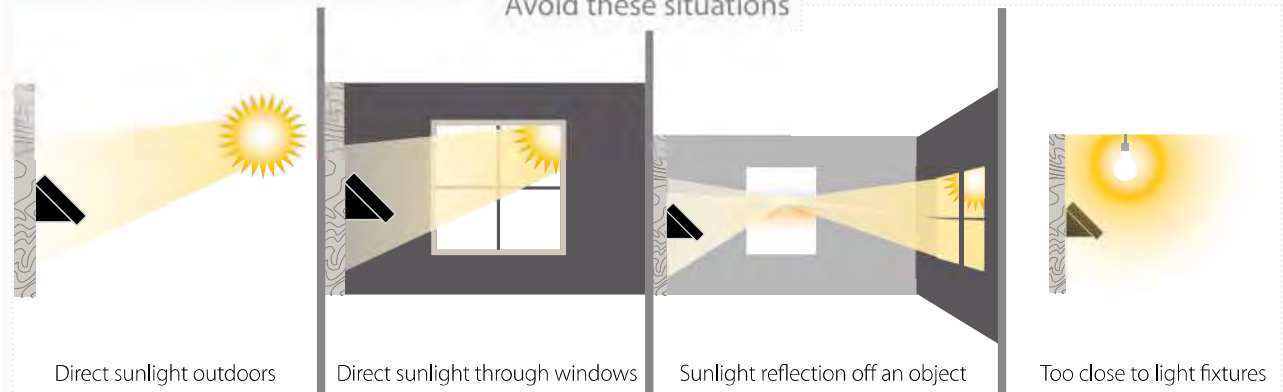
Lux References Guide



Recommended Locations

The device should only be installed indoors. The illuminance of the external light source is 0-8000LUX. Direct sunlight should be avoided. Install the device at least 10 feet (3m) away from windows, and 6.5 feet (2m) away from light fixtures.

Avoid these situations



Avoid direct sunlight, indirect sunlight reflected off mirrors, or bright artificial light.

Planning



WARNING Relay is rated for 12v only and **should not exceed the recommended voltage.**
If connecting a higher voltage device some extra components maybe necessary. Please consult ZKTechnology for further guidance before connecting to higher voltages.

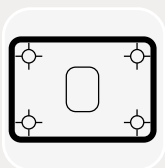
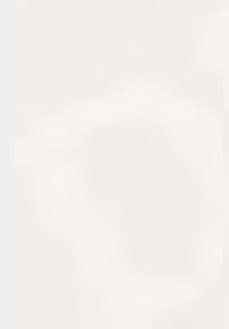


Required personnel

Depending on the modules that you purchased, and the implementation planned for your site, you will require the following:

- A licensed electrician to install or move AC outlets and power cables.
- A qualified person to run Ethernet cable.

One or more qualified installers to assemble the device and mount it on the wall (a second person may be necessary to hold the cover while the other person attaches components to the cover and base).



Mounting template

The packaging box includes a paper mounting template that you use to mark the wall with the following measurements and indicators:

- Where to screw the base of the unit into the wall
- Where cables enter the unit through access holes in the wall



Power sources and connections

Requirements:

- The AC power source must be grounded 100 to 240V AC, 50/60Hz input voltage.
- A licensed electrician must ensure that low-voltage wiring is routed securely away from high-voltage wiring.

Power source options:

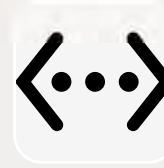
The following power supply methods are available:

- Mounted near an AC outlet, with power supply plugged in
- Power-over-Ethernet (PoE)

WARNING Power up your device AC Adapter **OR** Power-over-Ethernet (PoE)

DO NOT Connect simultaneously (It may damage the device)

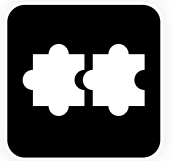
- Backup battery



Ethernet connection

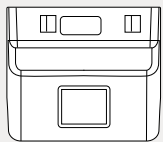
- Location - Plan to install the Ultima in a location that allows an easy and secure connection to an external network (for example, using the Ethernet cable).
- All cables must be in place before installing the Ultima.

Optional Modules



If you plan to install certain optional modules to the Ultima, follow the step-by-step instructions in this guide. Note the following:

- The optional modules have components and cables that must be attached to the Ultima in a certain order during specific stages of the installation.
- You can only choose one between the barcode and magnetic modules.
 - The modules combination can be as follows
 - Base+ Fingerprint & RFID module.
 - Base+ RFID module.
 - Base+ Facial Recognition module.
 - Base+ Barcode/Magnetic module.
 - Internal PoE Module.



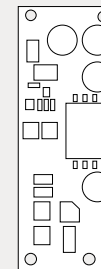
Fingerprint module



Card Reader



Battery



PoE module

Preparing the location



Determine the power source for your site

Before you start the installation, plan with your electrician (if required for the power option that you choose) how the Ultima will connect to the power at your site.

Choose from the following options and review the associated notes.

Power options

- Install near an AC outlet

Select a location where the distance from the wiring hole of the Ultima is not more than 5 feet (1.5 meters) from the AC outlet.

Note: Installing the device near an AC outlet does not protect against the AC power cord from being deliberately or inadvertently unplugged from the outlet.

- Power-over-Ethernet (PoE)

The device has a POE module in it. You can supply power to the device by connecting a network cable to the POE switch.

- Backup battery

When the power is off or in emergency, the backup battery can supply power to the device.

Notes:

- A licensed electrician must install the AC outlet and associated wiring before you install the Ultima.
- Do not connect the Ultima power line to circuits that are being used for electrical devices that draw large amounts of power, such as air conditioning units, electrical motors, and compressors.
- Avoid running a communications cable near devices that interfere with data transmission.

Installation

Marking holes

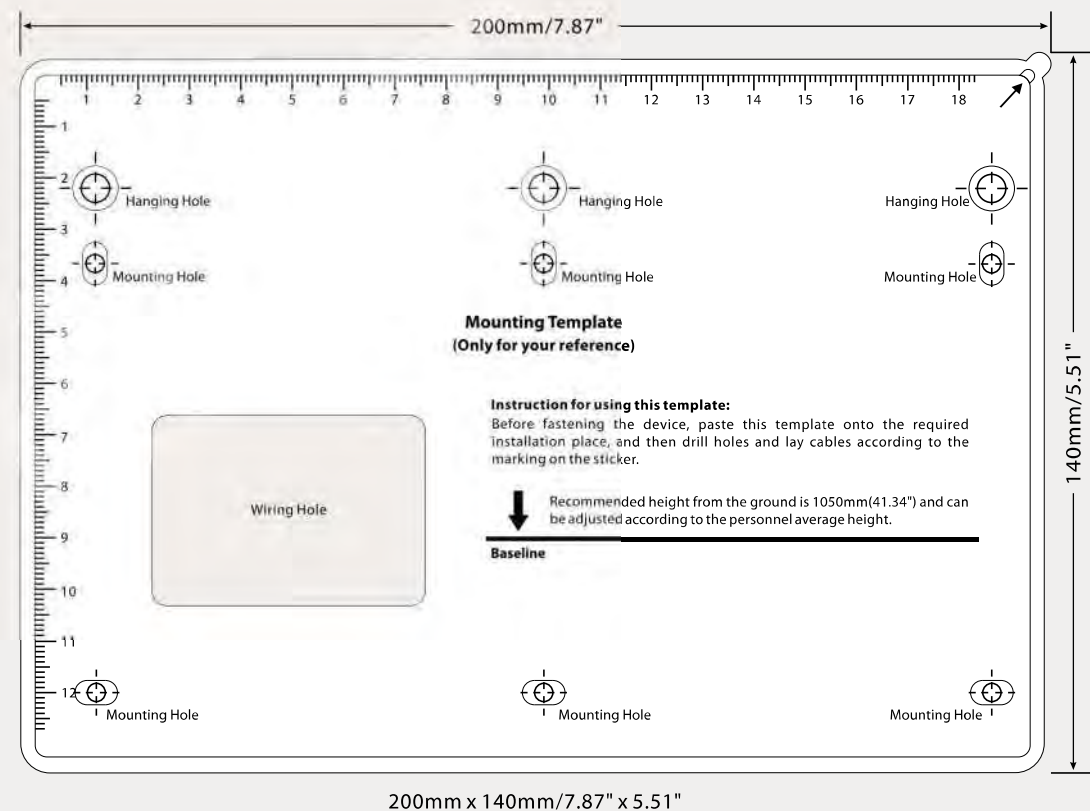


Mark insertion points for the base

The mounting template is printed on a sheet of paper that is included in the package. Use that template to mark the areas of the wall where you plan to install the Ultima.

Mark the wall

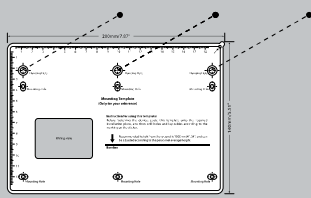
1. Tape the mounting template at the optimal height and location for the Ultima10.
 - The baseline is recommended 1.2m above the floor and can be adjusted to the actual situation.
 - Use a level to ensure that the top of the template is horizontal to the floor.
2. Mark the location of the mounting screw holes.
3. If you plan to run an Ethernet cable through the wall to enter the Ultima from the back or through the top, use the template to mark the area of entry.
4. If you are installing the Ultima near an AC outlet, be sure the outlet is within 5 feet (1.5 meters) of the unit.
5. After you finish marking all screw holes and wiring hole, remove the mounting template from the wall.



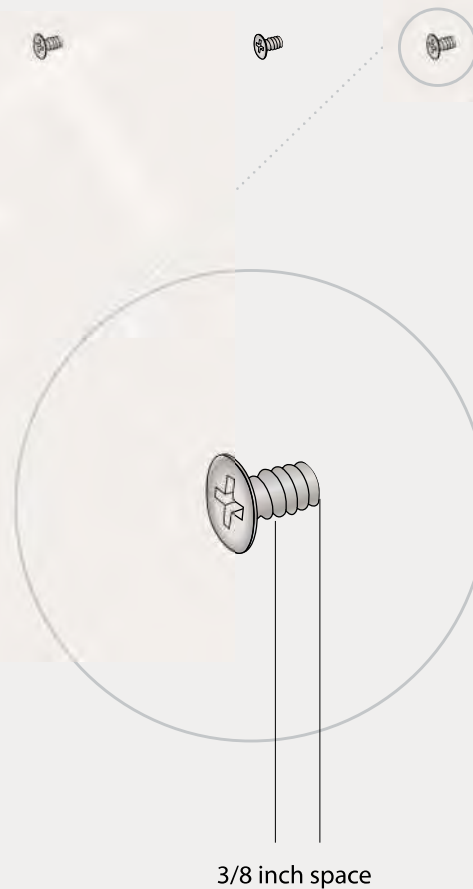
Drilling holes and fixing plastic anchors and upper screws



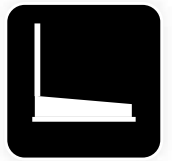
Drill 1/4 inch holes and insert plastic anchors flush with the wall surface.



Fix the upper 3 screws (*base only installation*) on the wall.



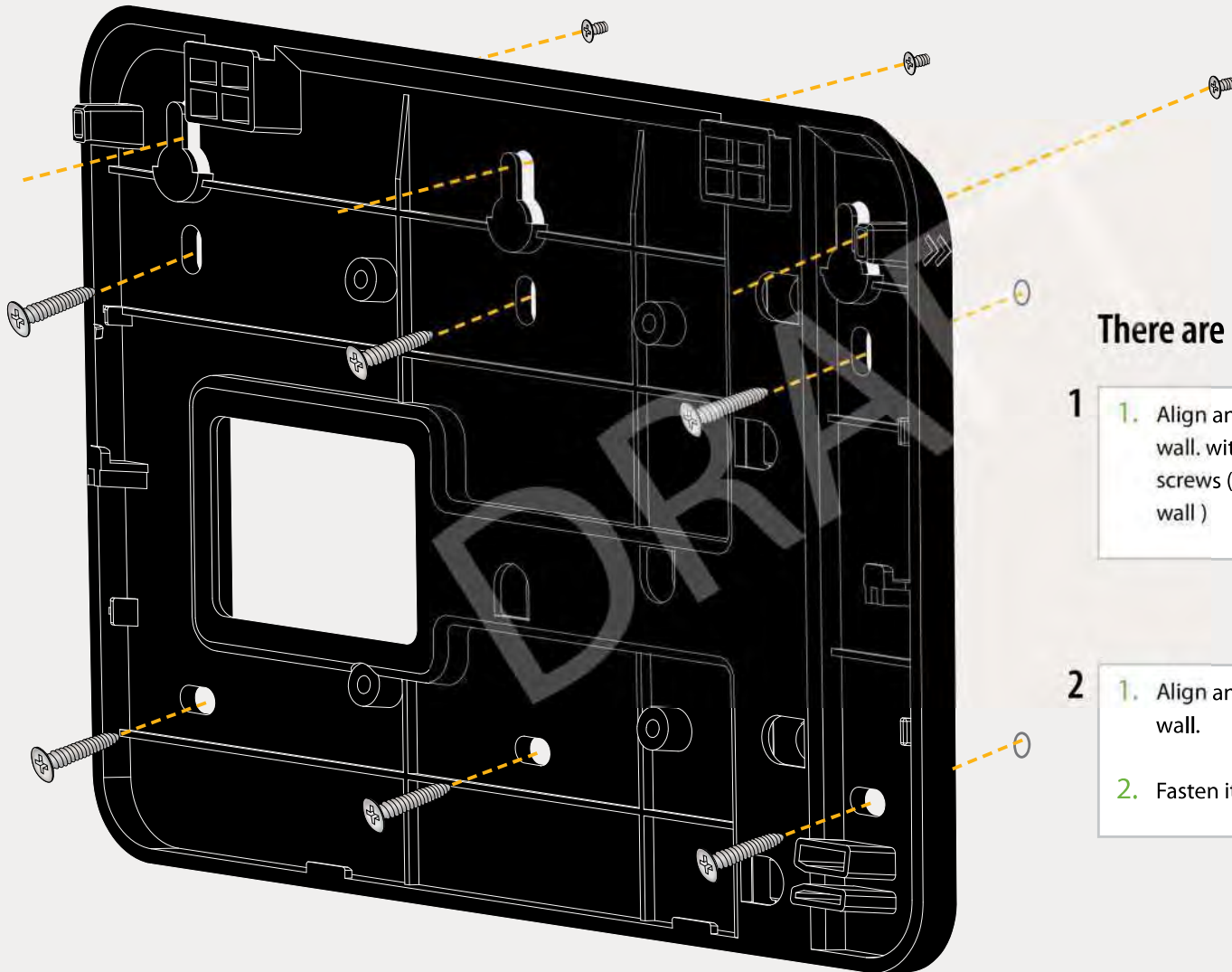
Opening Ultima back cover (Mounting Plate)



Place Ultima 10 face down
Unlock the back cover (mounting Plate) and
gently open it.

Caution Do not apply force.

Mounting on wall



There are 2 ways to mount the back plate

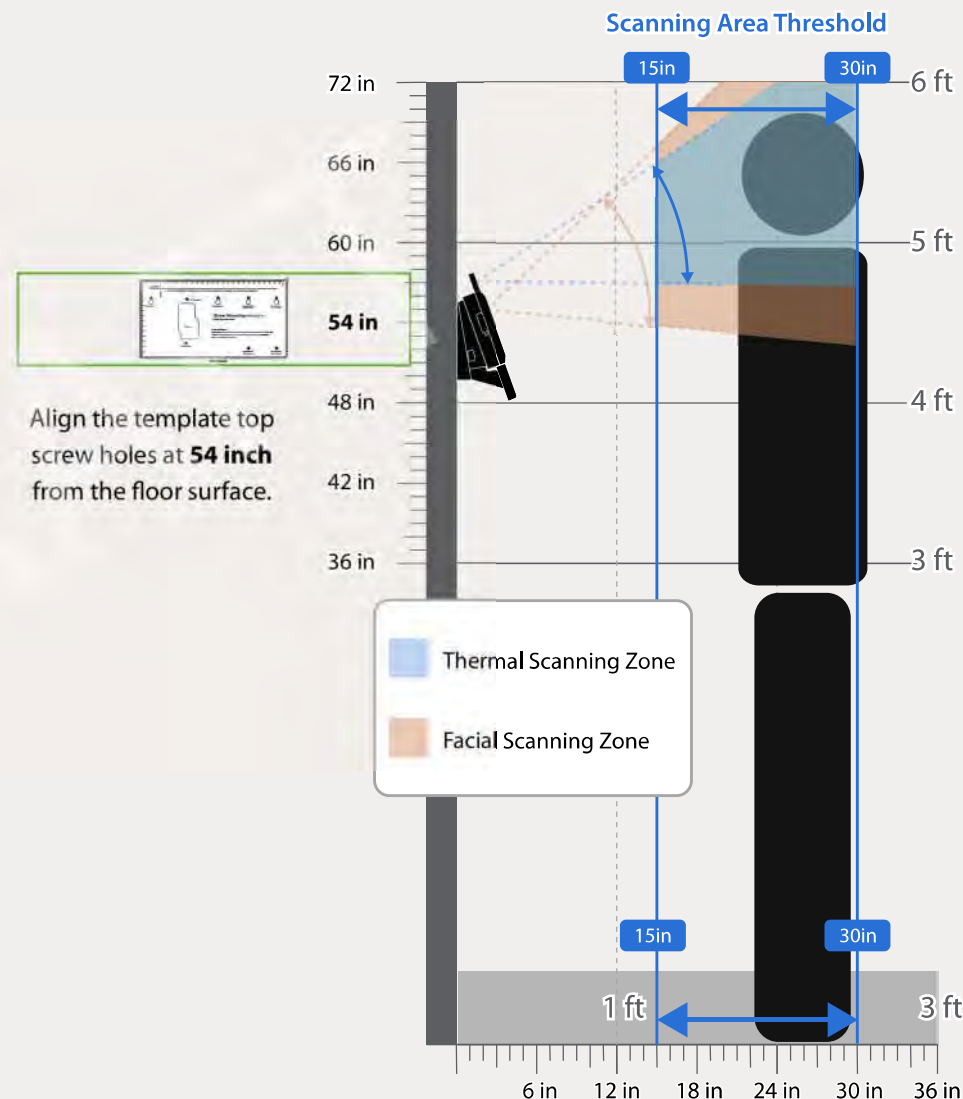
1. Align and hook up and hang it the Ultima on to the wall, without securing on the wall with 6 additional screws (This way you can easily remove it from the wall)
2.
 1. Align and hook up and hang it the Ultima on to the wall.
 2. Fasten it with 6 bottom screws to secure it on the wall.

Mounting the Ultima with facial and thermal scanner on a wall

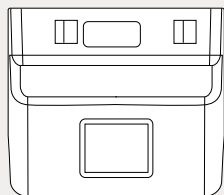
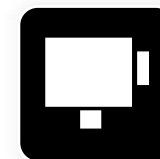


FOV (Field of view) for the combined facial and thermal sensors:

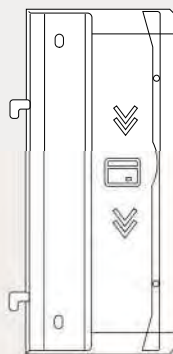
1. Per ADA regulations, ZK recommends installing the Ultima clock between **54 inches** from the top screw to 48 inches from the bottom above the ground.
2. The "strike zone" in which the user should present their face for identification should be between **20 to 30 inches** from the clock.
- 3a. The field of view for combined facial and thermal sensor fits anyone with a height of **4'-08" to 6'-00"** while standing up straight between **20 to 30 inches** in the "strike zone" from the clock.
- 3b. Anyone with a height of **6'-00" to 6'-06"** should bend at their knees and place their face within the strike zone which is between **20 to 30 inches** inches to fit inside the camera's view angle for facial identification



Optional modules



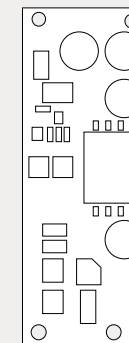
Finger Print Reader



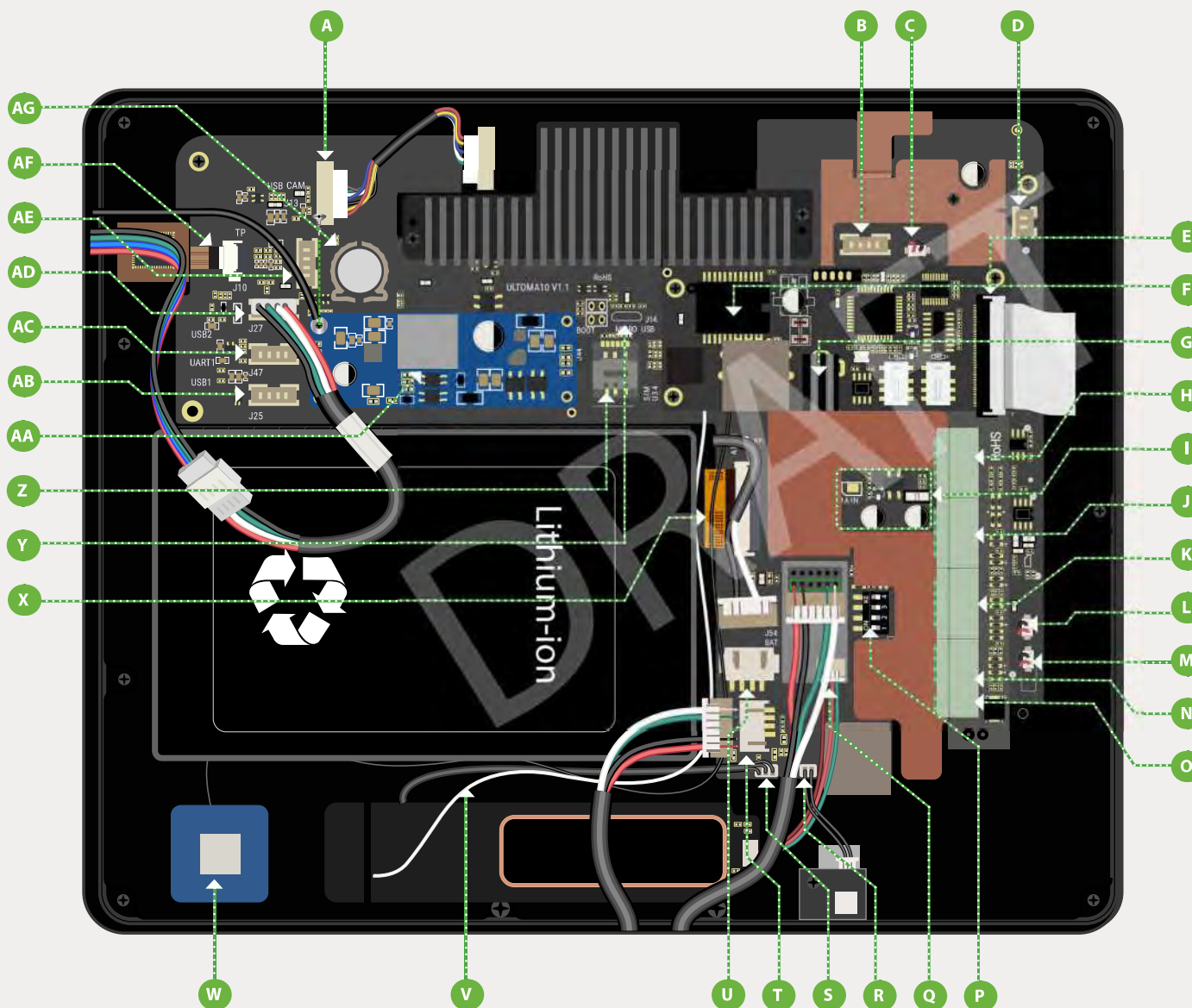
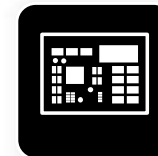
Card Reader



Battery Pack



PoE+

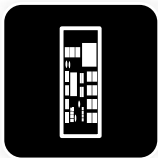


- A. Camera
- B. Thermal Imaging Temperature Measurement Module USB
- C. Main MIC Port
- D. 12V 2PIN Power IN
- E. Access Control and Power Board
- F. Ethernet Port
- G. 12V Power IN
- H. Relay Module
- I. 4G Antenna Port
- J. Wiegand IN 1
- K. Wiegand IN 2
- L. Secondary MIC Port
- M. Speaker
- N. Auxiliary Input
- O. 12V 200mA Power OUT
- P. RFID Selector Switch
- Q. RFID Antenna
- R. Reset
- S. Interactive LED
- T. Fingerprint
- U. Battery
- V. WIFI Antenna
- W. GPS Antenna
- X. Display
- Y. Debug miniUSB Port
- Z. SIM Card
- AA. POE Module
- AB. Reserved USB Port
- AC. Magnetic Reader
- AD. Barcode Reader
- AE. Reserved UART Port
- AF. Touch Screen
- AG. RTC Button Battery

Relay module connectors

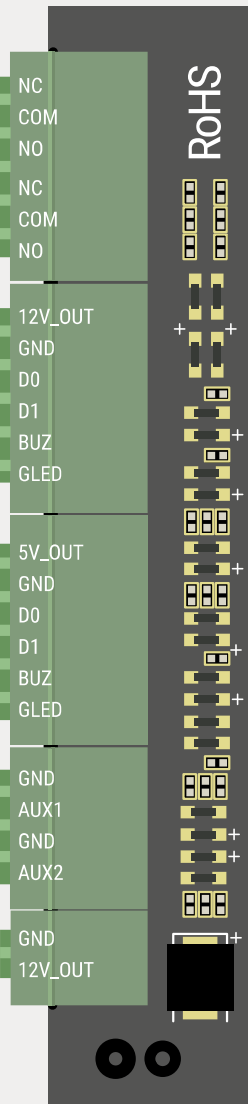
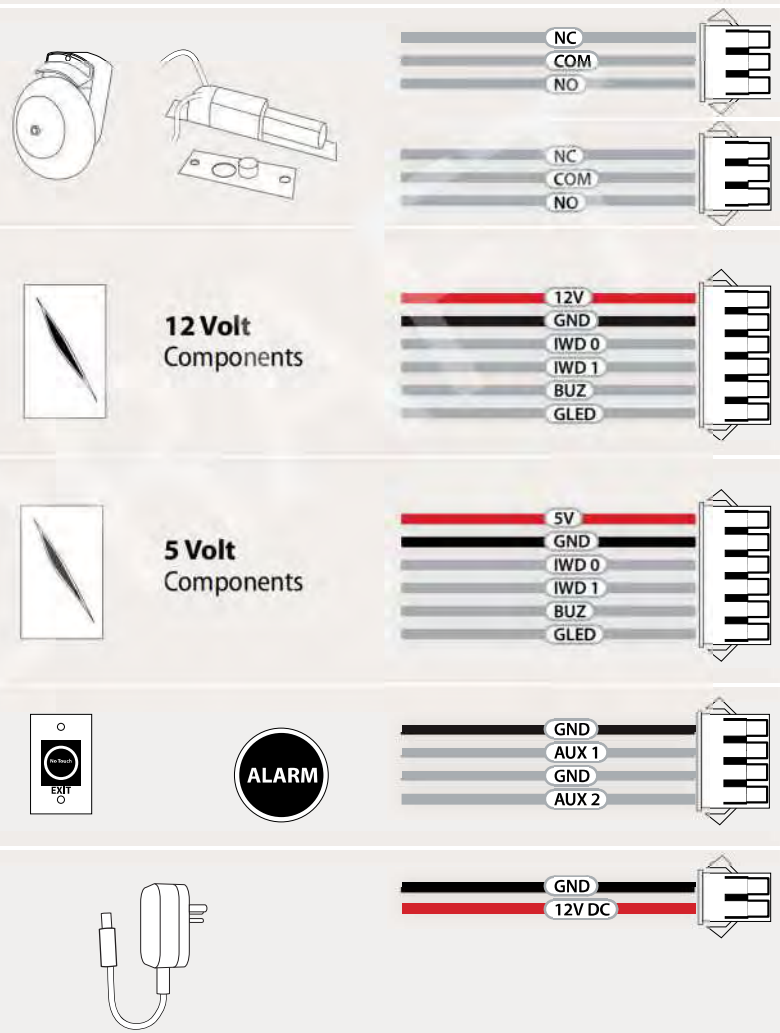


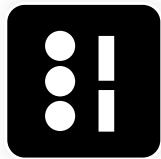
WARNING Relay is rated for **12v only** and **should not exceed the recommended voltage**.
If connecting a higher voltage device some extra components maybe necessary. Please consult
ZKTechnology for further guidance before connecting to higher voltages.



Connecting wires

Please follow components
manufacturer installation instruction

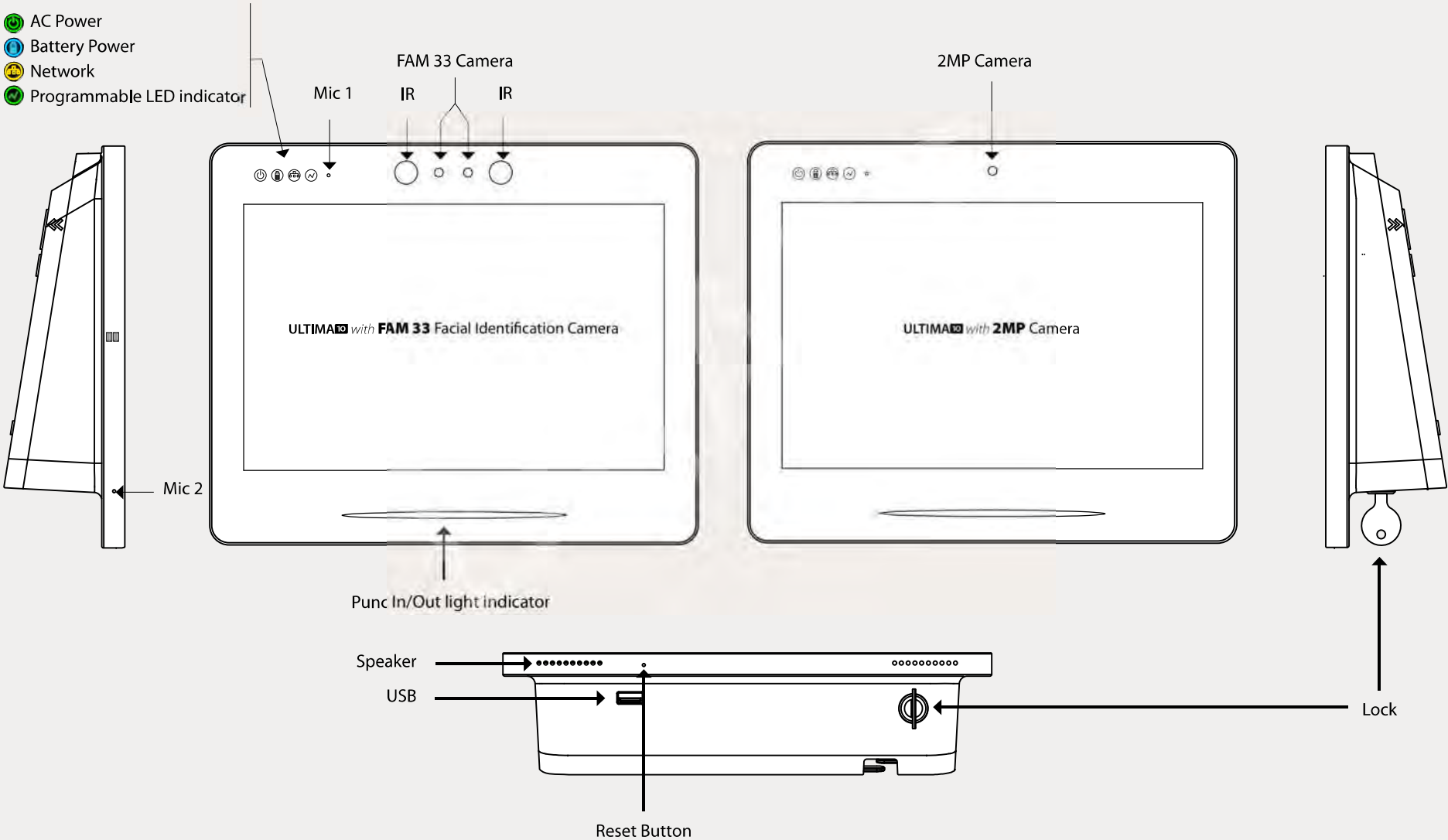




External plug and indicators

LED Indicators

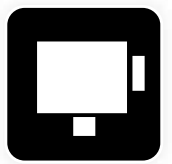
- AC Power
- Battery Power
- Network
- Programmable LED indicator



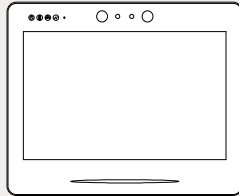
Ultima configuration options



WARNING The Ultima can support multiple Readers at a time i.e. MagStripe or Barcode or RFID module, but not combinations of the two. **Please note:** The Magstripe and Barcode module is always installed/configured to be at the far end of the Ultima terminal.



A



Base

B



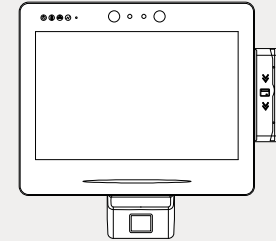
+ Fingerprint Scanner

C



+ Card Reader

D



+ Fingerprint Scanner + Card Reader

Installing Fingerprint scanner with RFID Module

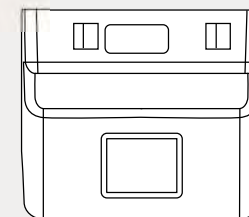
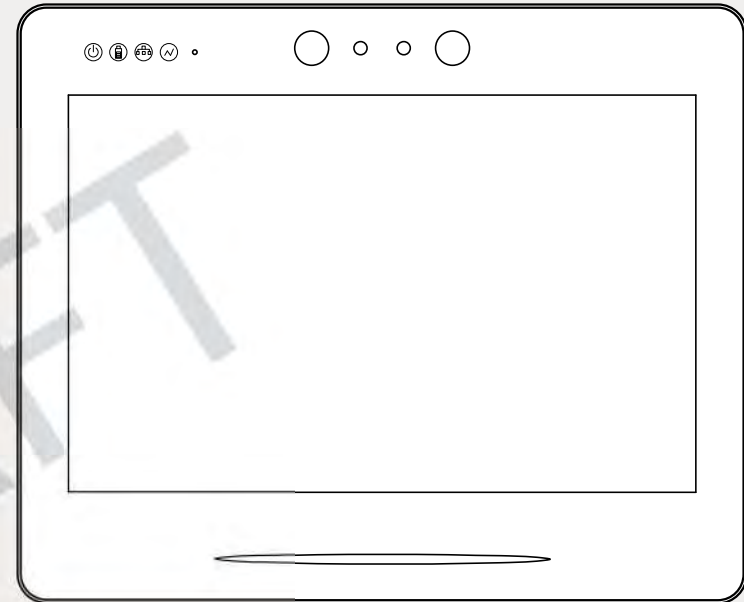
Step 1 Opening the back cover

Step 2 Removing screws

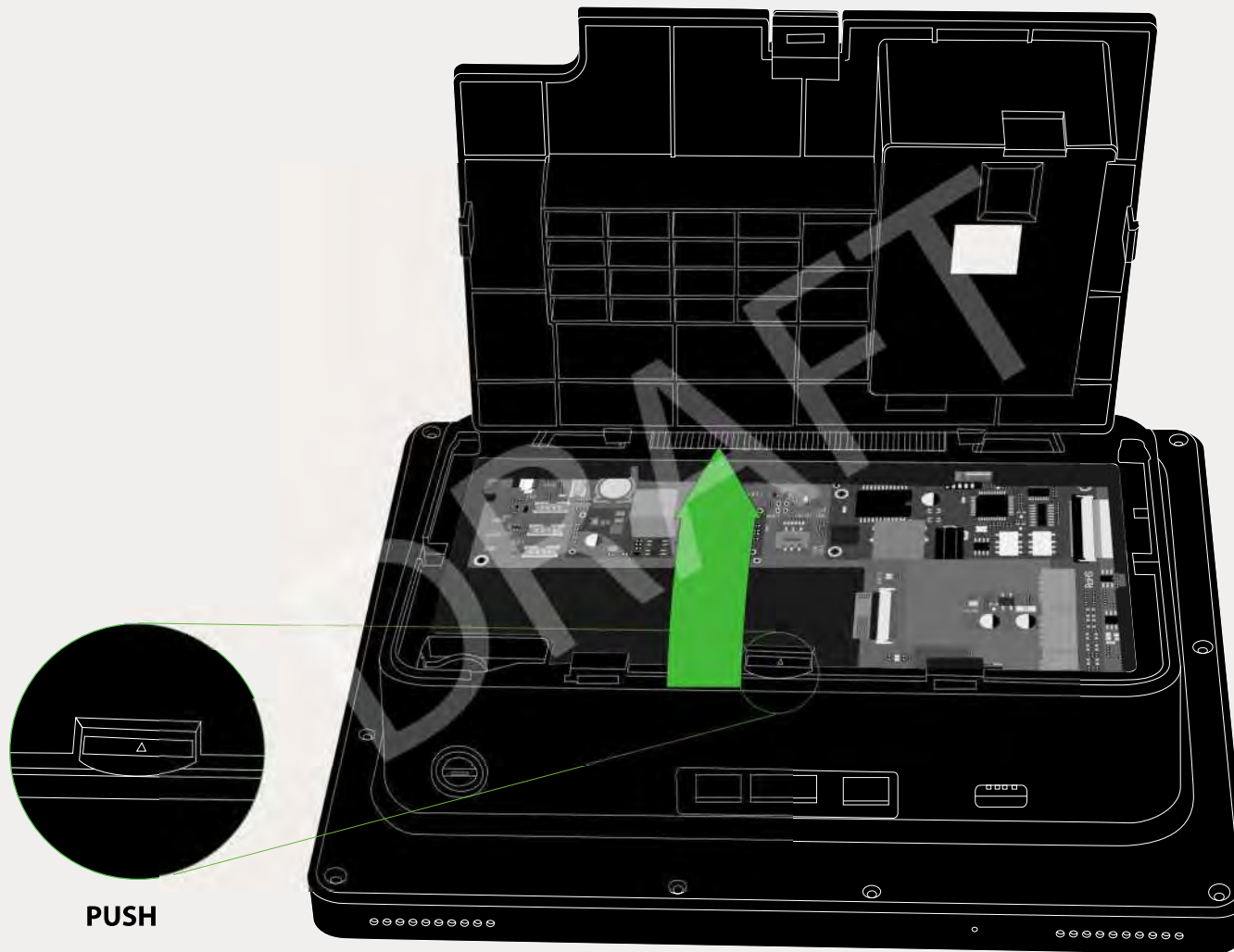
Step 3 Inserting wires and assembling

Step 4 Connecting wires to motherboard

Step 5 Testing



Opening the back cover

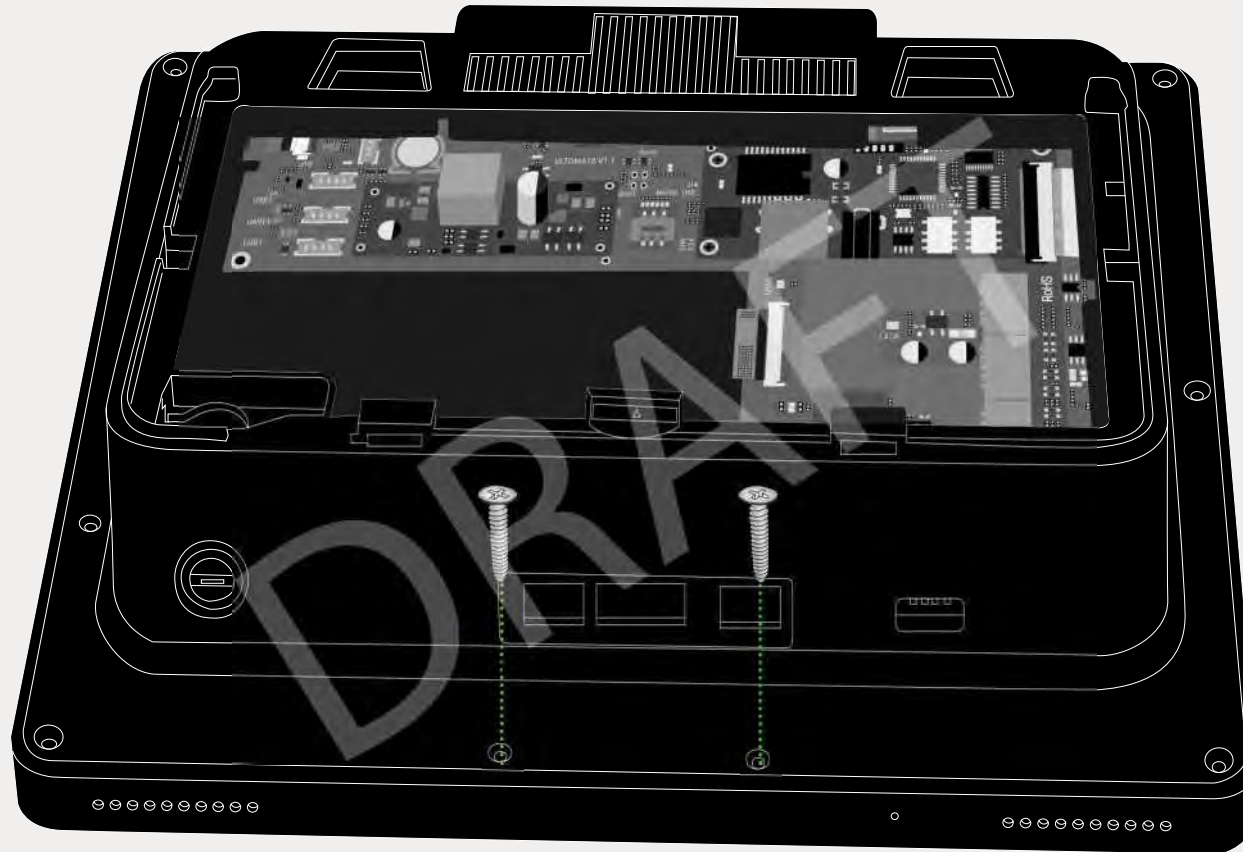


PUSH

Push the latch lock and lift the back cover upward to open assembly completely to access to internal component

Caution Do not apply force.

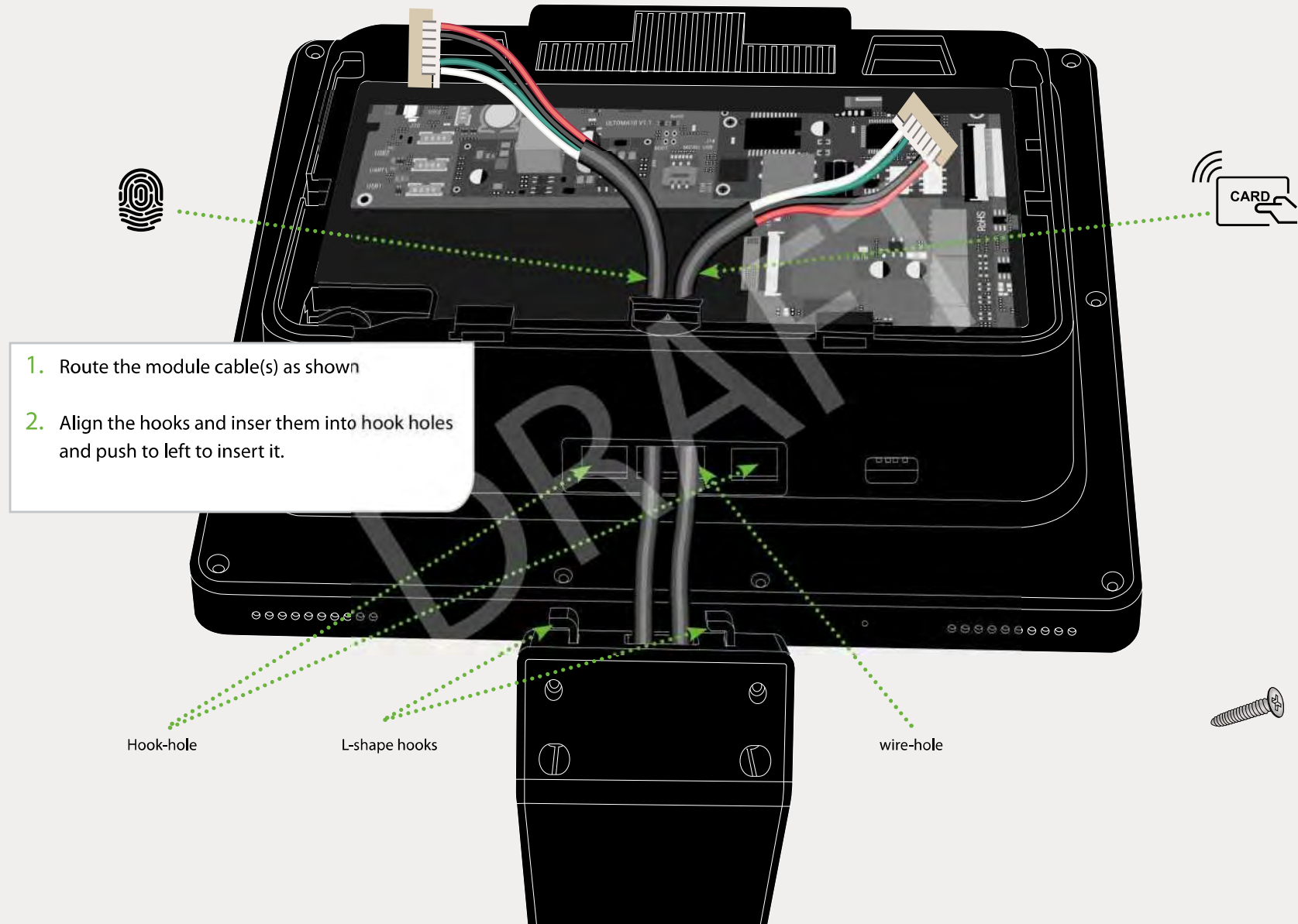
Installing Fingerprint scanner with RFID Module | Removing screws



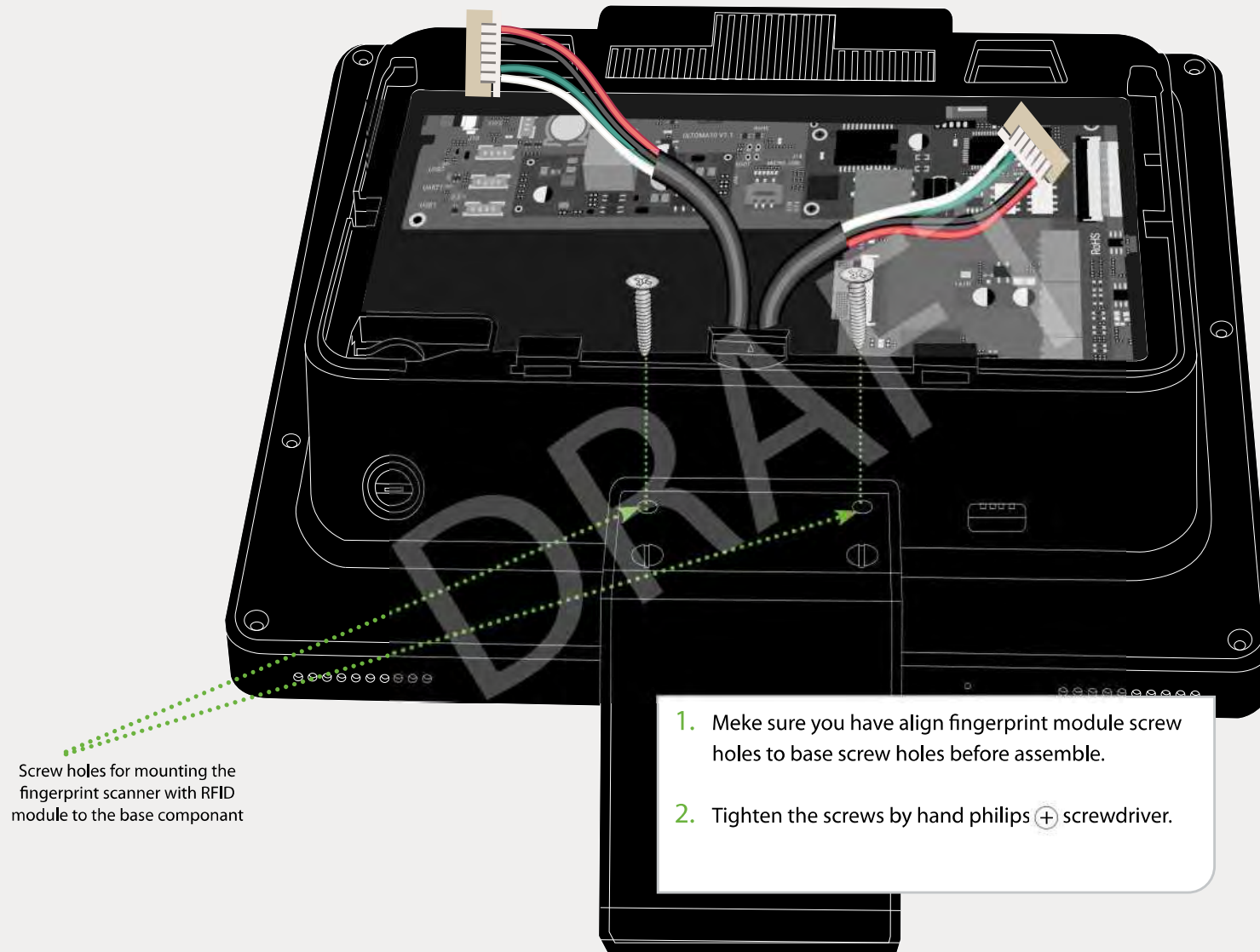
Open back cover. **See page 14**

1. Un-screw and remove 2 screws.

Installing Fingerprint scanner with RFID Module | Inserting wires and assembling



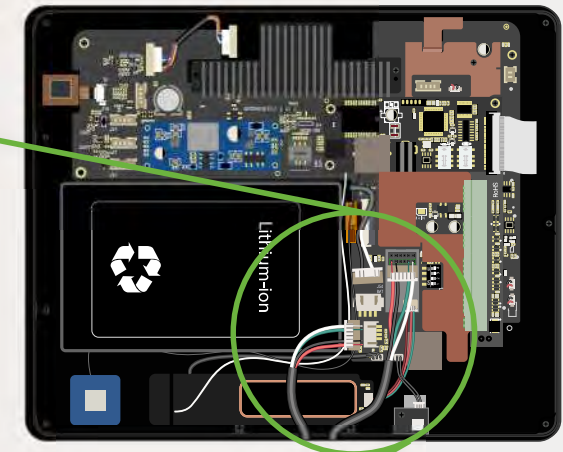
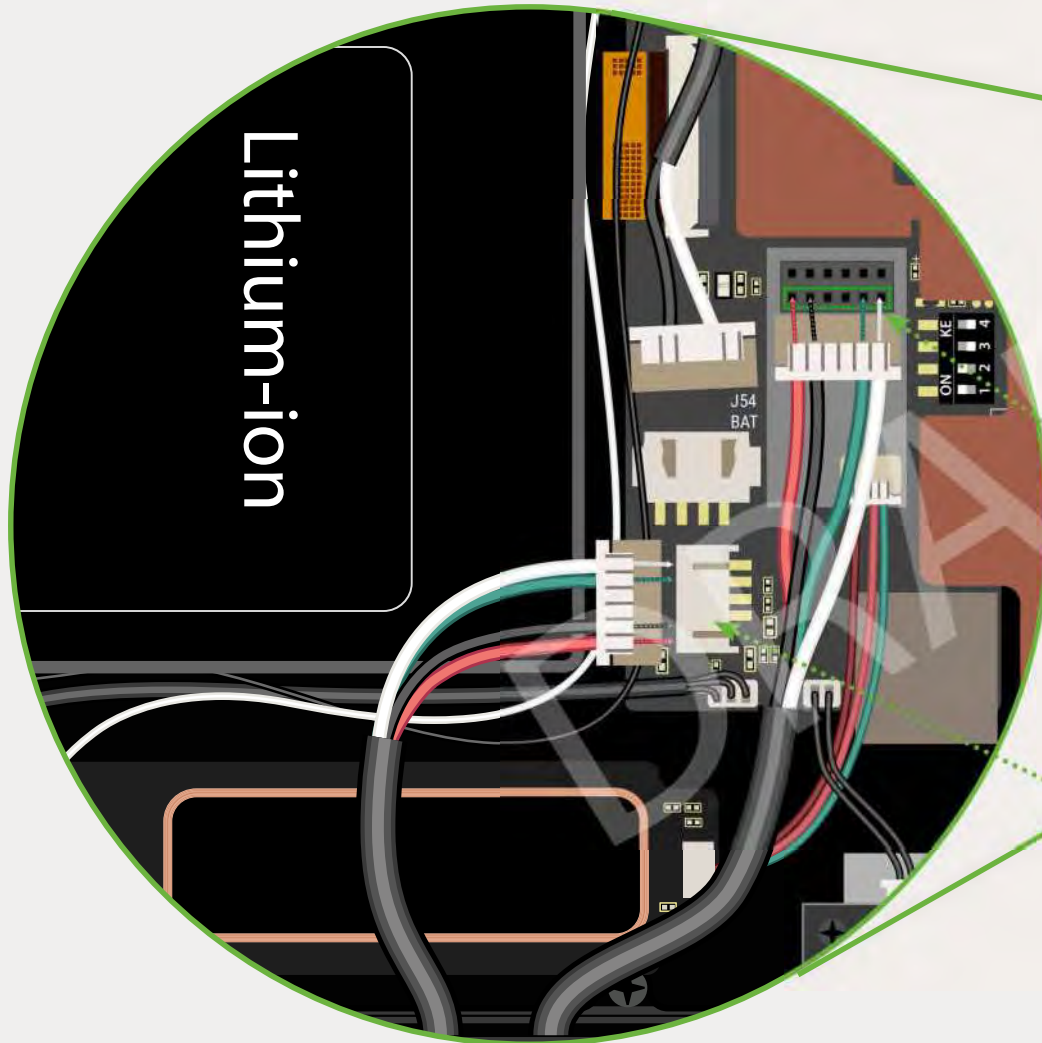
Installing Fingerprint scanner with RFID Module | Inserting wires and assembling



Screw holes for mounting the fingerprint scanner with RFID module to the base component

1. Make sure you have align fingerprint module screw holes to base screw holes before assemble.
2. Tighten the screws by hand philips + screwdriver.

Installing Fingerprint scanner with RFID Module | Connecting wires to motherboard



Align Elatec card reader (RFID) cables to 2nd row holes (as marked) on motherboard.



Plug in Fingerprint scanner wires on motherboard.

Installing Fingerprint scanner with RFID Module | Closing back cover

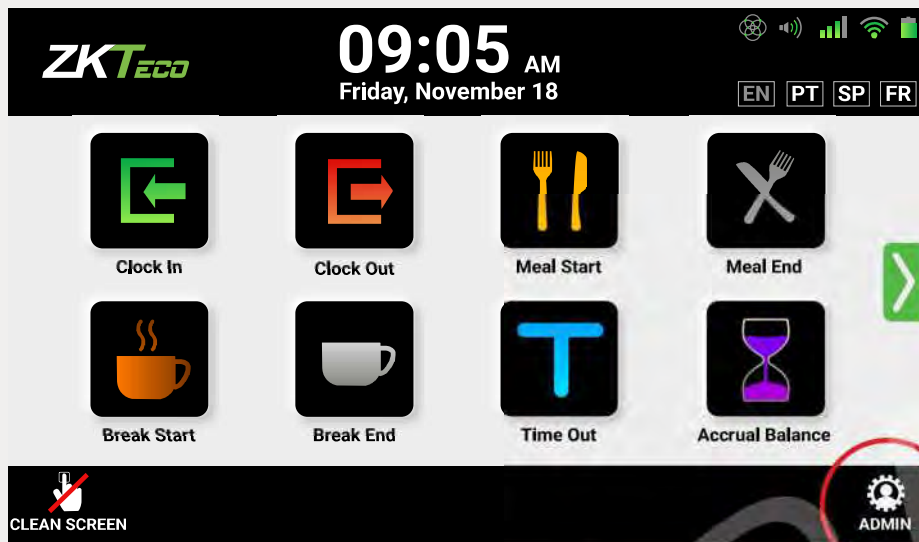


f

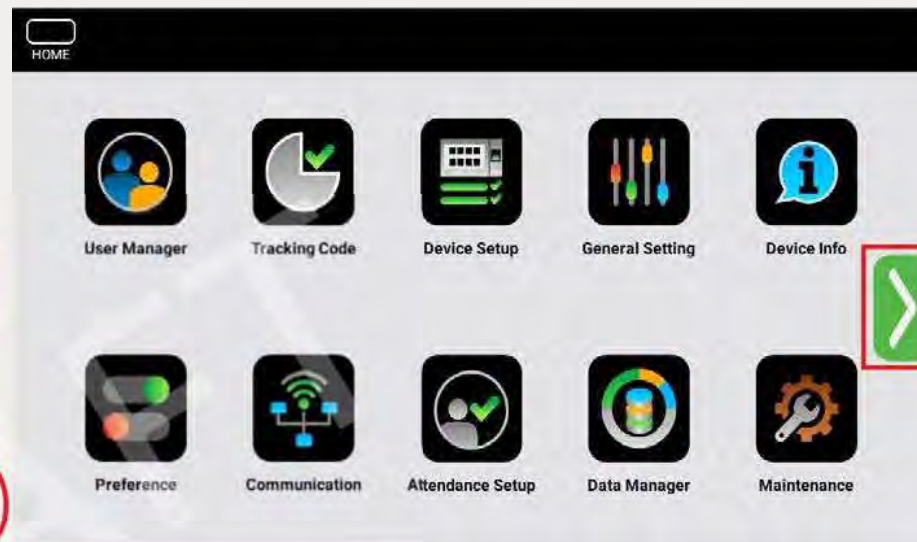



Close the back cover.

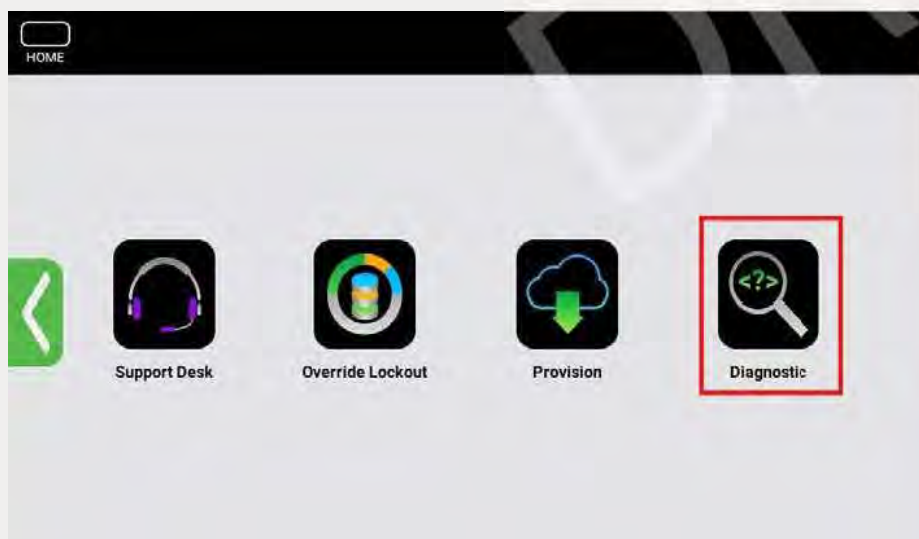
Installing Fingerprint scanner with RFID Module | Testing fingerprint module



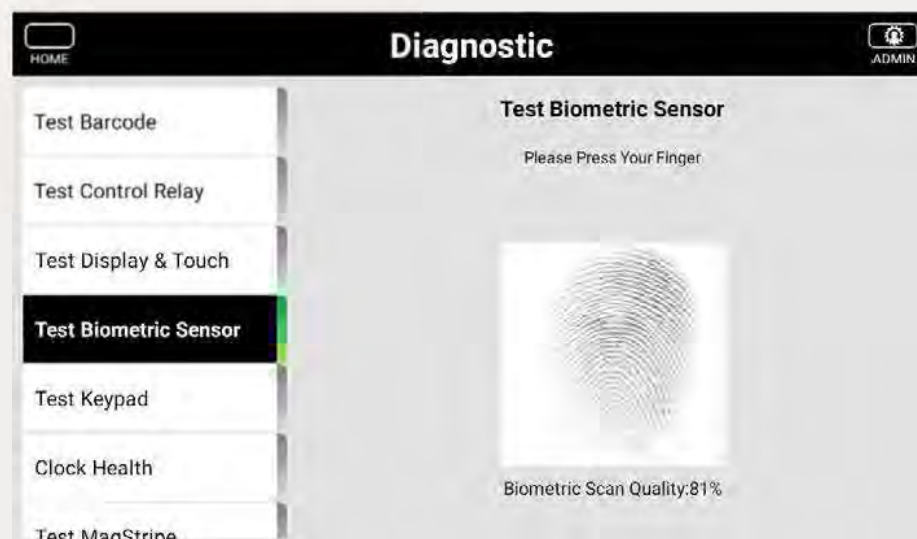
Press Admin  to login



Press next screen 



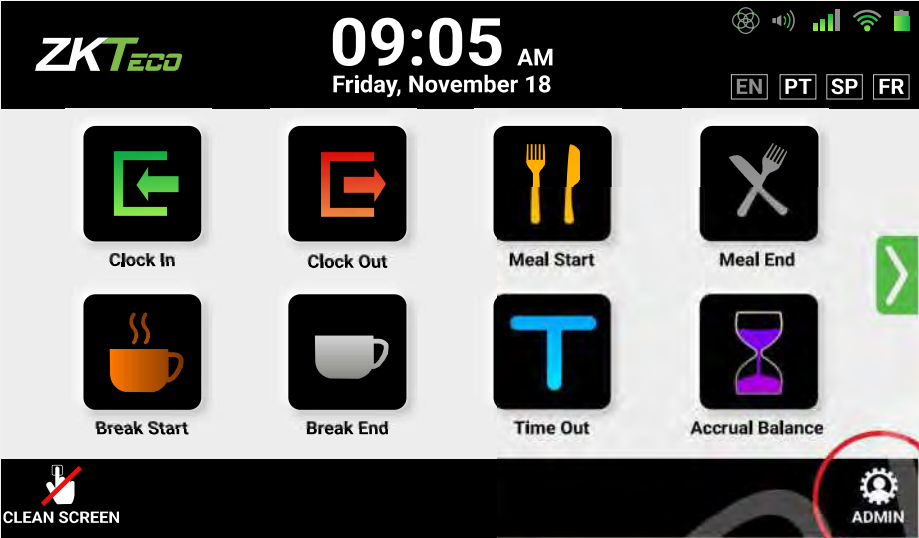
Press Diagnostic



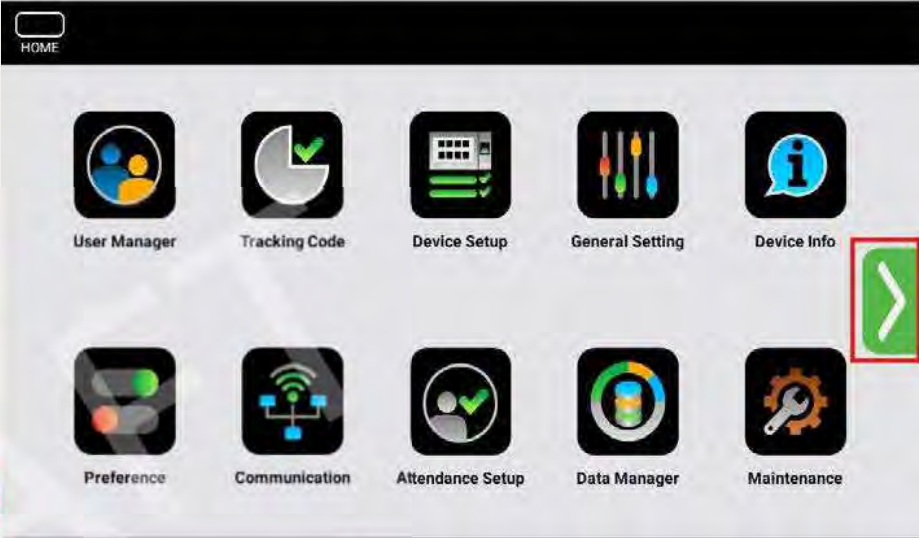
Test Biometric Sensor




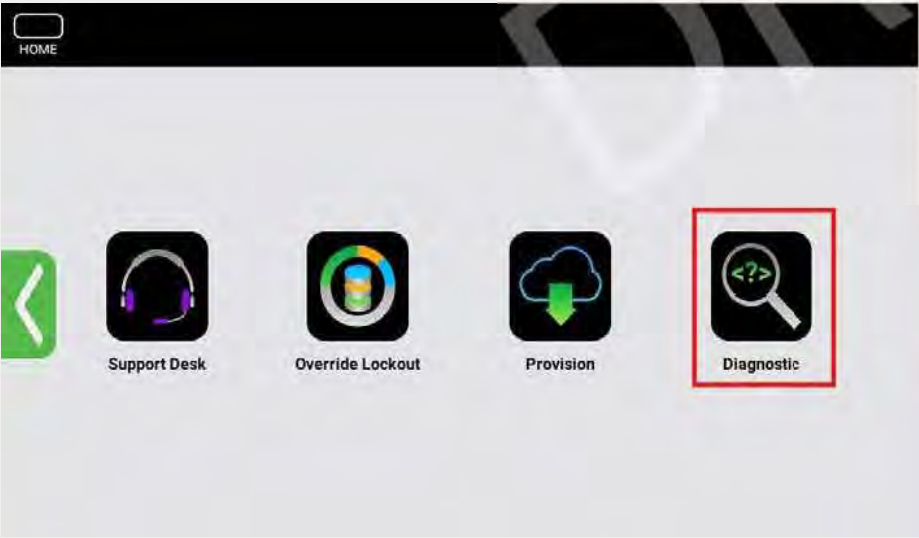
Installing Fingerprint scanner with RFID Module | Testing RFID module



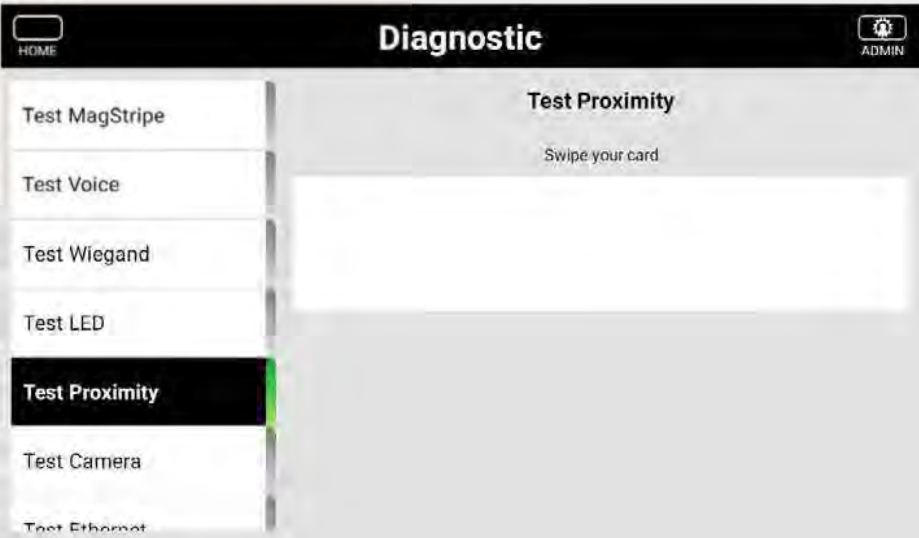
Press Admin  to login



Press next screen 



Press Diagnostic



Test Proximity

Installing Magnetic card reader Module

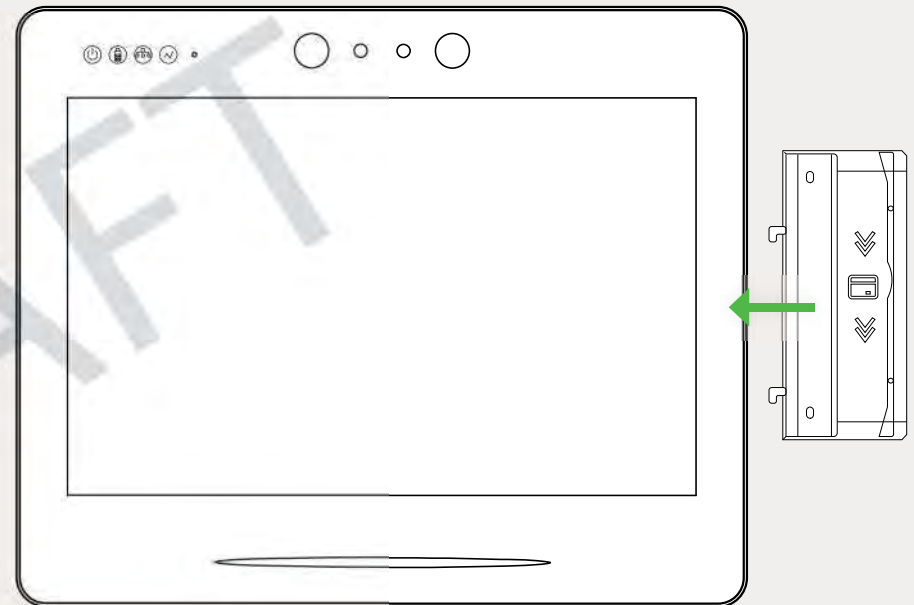
Step 1 Opening the back cover See page 31

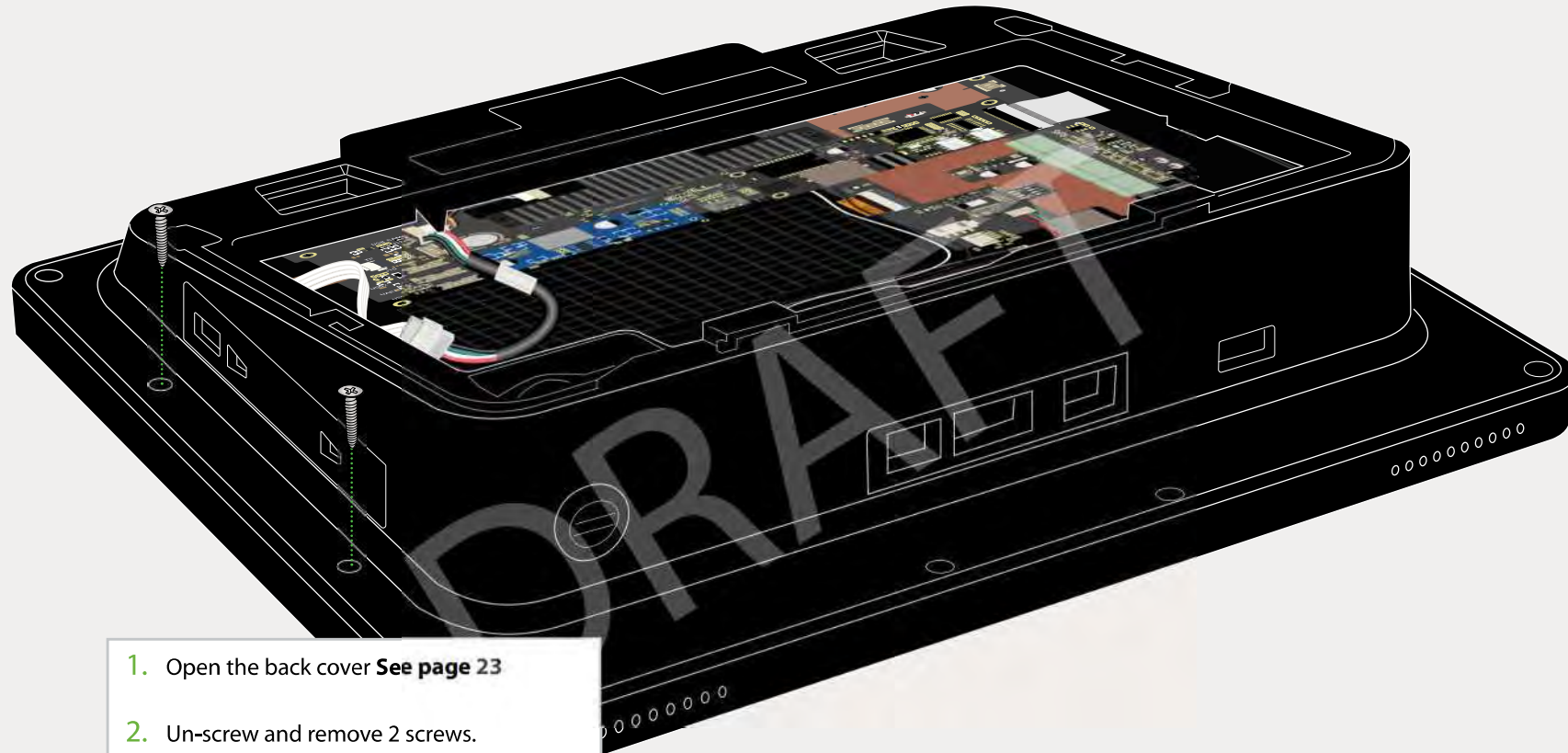
Step 2 Removing screws

Step 3 Inserting wires and assembling

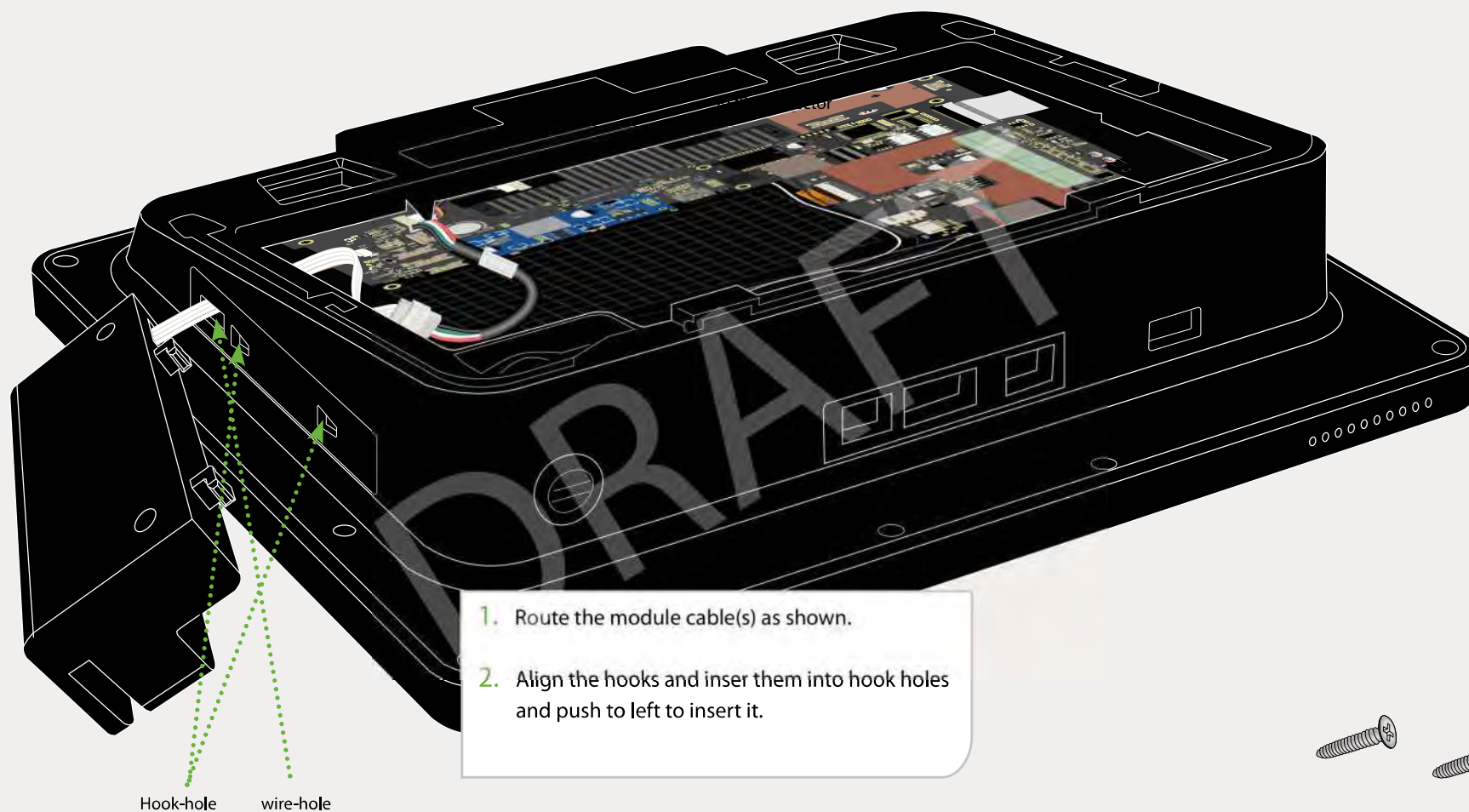
Step 4 Connecting wires to motherboard

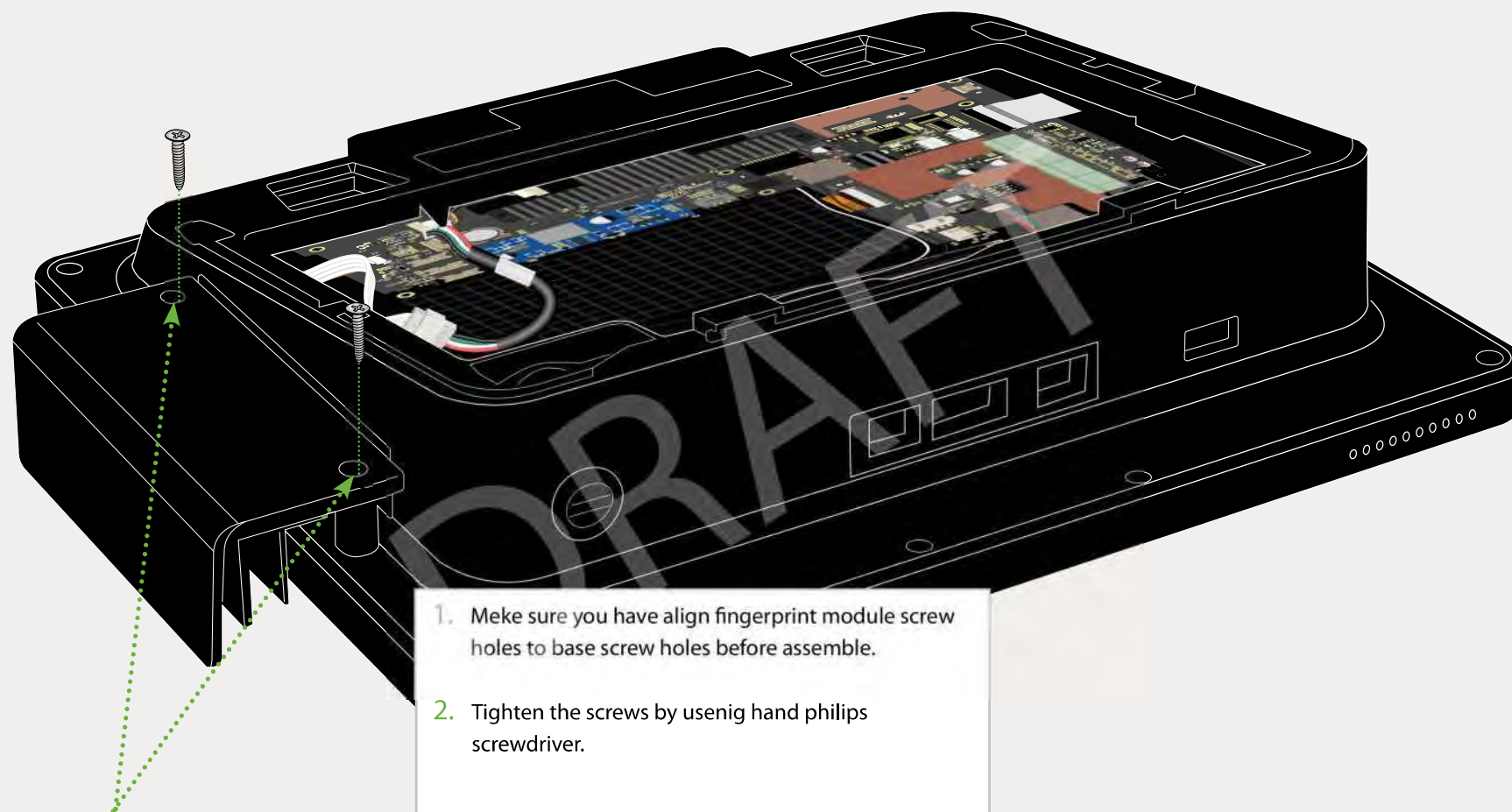
Step 5 Testing





1. Open the back cover **See page 23**
2. Un-screw and remove 2 screws.





Screw holes for mounting the fingerprint scanner with RFID module to the base component

1. Make sure you have align fingerprint module screw holes to base screw holes before assemble.
2. Tighten the screws by using hand philips screwdriver.