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

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

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

Required tools
- Tape Measure
- Level
- Wire Cutter
- Screwdrivers
- Drywall Knife
- Power Drill
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.

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.
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).

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)
- Backup battery

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

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.
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+ Barcode/Magnetic module;
    - Base+ Fingerprint & RFID module+ Barcode/Magnetic module;
    - Base+ RFID module+ Barcode/Magnetic module.
  - Internal Relay Module
  - Internal PoE Module

**Optional Modules**

- Keypad
- Fingerprint & RFID module
- RFID module
- Barcode module
- Magnetic module
- Relay module
- PoE module
- Battery
Prefering 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
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.

1. Tape the mounting template at the optimal height and location for the Ultima.
   - 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.

**Note:** The mounting template contains four fixing holes for the optional modules (fingerprint & RFID module or RFID module, barcode/magnetic module), if you don’t choose these modules, then you can just mark the left four fixing holes for the base.
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 2 screws (base only installation) on the wall.

Recommended height from the ground is 1.2 m and can be adjusted according to the personnel average height.
**Opening Ultima front cover**

**Step 1**
Press down the tabs simultaneously and gently open it about 1.5 inch.

*Caution* Do not apply force.

**Step 2**
Pull the door assembly UP about 1 inch to open it completely.

*Caution* Do not apply force.
Mounting on wall

1. Align and hook up the Ultima on to the wall
2. Fasten it with 2 bottom screws.
Installing the optional modules to the base

- Relay
- PoE+
- Keypad
- Finger Print Reader
- Battery Pack
- RFID module
- Barcode module
- Magnetic Module
Motherboard connectors

A. RS485
B. Battery
C. Speaker
D. Keyboard
E. USB Reserve
F. Display
G. 12 V 2A Power OUT
H. 12 V 3A Power IN
I. Relay Module
J. RFID Module
K. Barcode/Magnetic Reader
L. Wiegand IN
M. Fingerprint Module
N. Ethernet Port
O. USB Port
P. PoE Module (optional)
Q. Camera
R. SD Card
S. Heat Sink
T. Touch Screen Sensor
U. LED Status indicator
V. Microphone
W. Reset
X. GPS
Installing the relay module

Place the relay module in the back shell and fix it with 4 screws.

1. Align the relay circuit board connectors facing center.
2. Secure it with 4 screws.
Connecting the relay module

Connect the cables between the relay module and the main board.

![Diagram showing relay module and motherboard connections](image_url)
External plug and indicators

LED Indicators
- AC Power
- Battery Power
- Network
- User configurable
- Optional Camera

- Reset
- USB Plug
- Speaker
Ultima configuration options

A. Base

B. Base + Fingerprint reader with RFID

C. Base + Fingerprint reader with RFID Card Reader

D. Base + RFID Card Reader

E. Base + RFID Card Reader

F. Base + Barcode Card Reader

G. Base + Magnetic Card Reader

The keypad can be added on any configuration

+ OR

OR
Installing a single module

1. Remove the end-cap from the base by sliding it out forward of the base unit

2. Remove faceplate from the housing by pulling it forward. (apply gentle force)
3. Secure module housing to the base component with 2 screws.

4. Insert back the end-cap first *
   * Fingerprint and RFID module only

5. Place the face-plate panel back on to the housing and push it gently until it snaps.
Installing dual modules

1. Remove the end-cap from the base by sliding it out forward of the base unit.
2. Secure the first module housing to the base component with 2 screws.
3. Secure the second module housing to the first module with 2 screws.
4. Place the first face-plate panel back on to the housing and push it gently until it snaps. and repeat for the second module.

Fingerprint or RFID module must be installed first.
Connecting the module wires to the motherboard

1. Route the module cable(s) as shown
2. Secure the wires with the wire clamps
Installing internal PoE module

1. Align 5 pin and 4 pin connectors to corresponding plug connectors.

2. Gently push-in to connectors and secure it with 2 screws.
Installing the keypad and connecting it to the motherboard

1. Feed the keypad wire through the bottom hole of the base unit.
2. Align the keypad module’s 3 screw holes with the base unit and secure them together.
3. Plug in 8 pin connector to the motherboard
Connecting ethernet cable

1. Route the Ethernet cable RJ45 through the back top or bottom hole*
2. *if the keypad is not going to be installed.
3. Connect to Ethernet port on the motherboard (figureX) and the other end to switch or hub.
Installing internal battery pack

1. Remove the battery housing cover

2. Peel off the paper of the double-sided tape and place the battery pack inside the battery housing

3. Place battery housing covers back to the unit and secure it with 4 screws.

4. Connect the battery cable to the motherboard and secure the cable with cable clamp
Connecting AC power supply

1. Route the Ethernet cable RJ45 through the back top or bottom hole.*
2. *if the keypad is not going to be installed.
3. Connect the power plug adaptor external power supply plug and other end to the mother board.
## Troubleshooting

<table>
<thead>
<tr>
<th>Issue</th>
<th>Probable Causes</th>
<th>Corrective Action</th>
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</thead>
<tbody>
<tr>
<td>There is no power in the Ultima.</td>
<td>If the Ultima is powered using standard AC power cable, the power supply is not properly plugged into the main board, the AC outlet, or both.</td>
<td>Check the connections to the main board and the AC outlet. <strong>Note:</strong> Do not plug the power cord into the AC outlet until you ensure that the power supply is properly connected to the main board.</td>
</tr>
<tr>
<td></td>
<td>If the Ultima is powered using Ethernet cable, the network may be down, or connections to and from the PoE module may not be secure.</td>
<td></td>
</tr>
<tr>
<td>The power LED is turned on, but nothing appears on the screen.</td>
<td>If the Ultima is powered using a standard AC power cable, the AC line is not live or is supplying improper voltage.</td>
<td>Measure voltage at the AC outlet and, if necessary, locate another power source.</td>
</tr>
<tr>
<td></td>
<td>If the Ultima is powered using Ethernet cable, there is an issue with the network.</td>
<td></td>
</tr>
<tr>
<td>Communication fails.</td>
<td>Communication settings are incorrect either at the Ultima or the host PC.</td>
<td>Check and, if necessary, correct the device IP Address, Netmask, Gateway and DNS.</td>
</tr>
<tr>
<td></td>
<td>Communications cabling is connected incorrectly.</td>
<td>Ensure that all communications cables are routed correctly and connected properly.</td>
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