Lockbox Secure+

User Manual

Table of Contents

1. Introduction

1.1 Overview

Welcome to the LockBox Secure+ User Manual! The LockBox Secure+ stands as an innovative solution that redefines the landscape of traditional safes. Crafted with state-of-the-art technology and an array of advanced security features, this safe transcends the limitations of conventional models, offering a robust and intelligent means of safeguarding your valuable possessions.

The LockBox Secure+ is meticulously designed to address the prevailing vulnerabilities witnessed in traditional safes. Embracing the essence of modern security demands, it introduces a sophisticated ecosystem that prioritizes proactive security measures, real-time monitoring, and immediate response capabilities. Gone are the days of reliance on antiquated key-based or basic lock mechanisms, as the LockBox Secure+ presents an elevated standard of security for both residential and commercial settings.

1.2 Purpose of the User Manual

This user manual serves as your comprehensive guide to navigate and harness the functionalities of the LockBox Secure+ effectively. It empowers users by providing detailed instructions on setup, operation, maintenance, and troubleshooting, ensuring a seamless and secure experience with your safety box. We understand the significance of user-friendly interfaces and straightforward instructions. Hence, this manual has been meticulously curated to offer a user-centric approach, ensuring clarity and ease of use throughout your journey with the LockBox Secure+.

1.3 About LockBox Secure+

The LockBox Secure+ is a cutting-edge safe that reimagines traditional security measures. It combines innovative technology with advanced features to create a highly secure environment for safeguarding valuables. Equipped with a smart lock featuring a Numpad Pad, a high-resolution ESP Cam, motion sensors, and an audible alert system, this safe ensures comprehensive protection against unauthorized access attempts. Moreover, it facilitates real-time image transmission through the secure Telegram platform, providing users with immediate visual evidence of any security breach. The LockBox Secure+ stands as a beacon of proactive security, offering peace of mind in both residential and commercial settings.

2. Product Description

2.1 Features and Capabilities

The LockBox Secure+ boasts a range of advanced features and capabilities designed to elevate security standards:

- Smart Lock with Numpad Pad: This intuitive interface provides secure access to the safe, replacing traditional key-based or combination locks. Users can set personalized PIN codes for easy yet highly secure entry.

- ESP32 Cam (High-Resolution Camera): The built-in ESP32 Cam captures high-quality images in real-time, enabling visual evidence of any unauthorized access attempts. These images are promptly transmitted to the owner through a secure communication channel like Telegram, ensuring immediate alerts and monitoring capabilities.

- Motion Sensors: Integrated motion sensors detect any movement or tampering with the safe. These sensors trigger instant alerts, enhancing the safe's security framework. Additionally, they work in tandem with the audible alert system to provide immediate notifications in the event of unauthorized access or tampering.

- Audible Alert System with Buzzer: A buzzer system supplements the motion sensors, providing audible alerts for heightened security. This feature serves as an additional deterrent against potential intruders and ensures prompt notification to the safe owner.

- Real-time Image Transmission: The capability to transmit captured images in real-time via the secure Telegram platform enhances the monitoring and response mechanisms. This feature empowers safe owners by providing visual evidence of access attempts, enabling quick and informed decisions in response to security threats.

2.2 Components Included

The LockBox Secure+ comes equipped with the following components:

- Safety Box Simulation Box: This specialized box simulates the real-world environment of the safety box, facilitating practical testing and validation of implemented features.

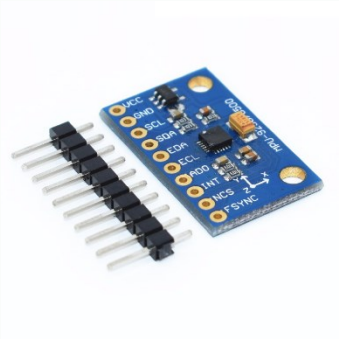
- ESP32: The ESP32 serves as a central component, facilitating connections to the buzzer and contributing to the overall functionality of the safety box.

- ESP32 Cam: Utilized for capturing images during access attempts, sending them to the owner via the Telegram platform to enhance security measures.

- Keypad : Integrated into the design, it acts as the primary mechanism for accessing the safety box, providing a secure and user-friendly input method.

- Buzzer: Used for alerting users in response to specific events, such as unauthorized access attempts or detected motion.

- Accelerometer (Motion Sensor): Functions as a motion sensor, detecting any movement near the safety box and triggering signals sent to the buzzer for immediate notification.



- Protoboard/PCB Dot Matrix (2): These components play a crucial role in connecting various hardware elements, ensuring seamless interaction between them and contributing to the overall stability and reliability of the hardware setup.

- Servo: Functions as a lock mechanism, controlled by the ESP32, adding an extra layer of security to the safety box.

3. Getting Started

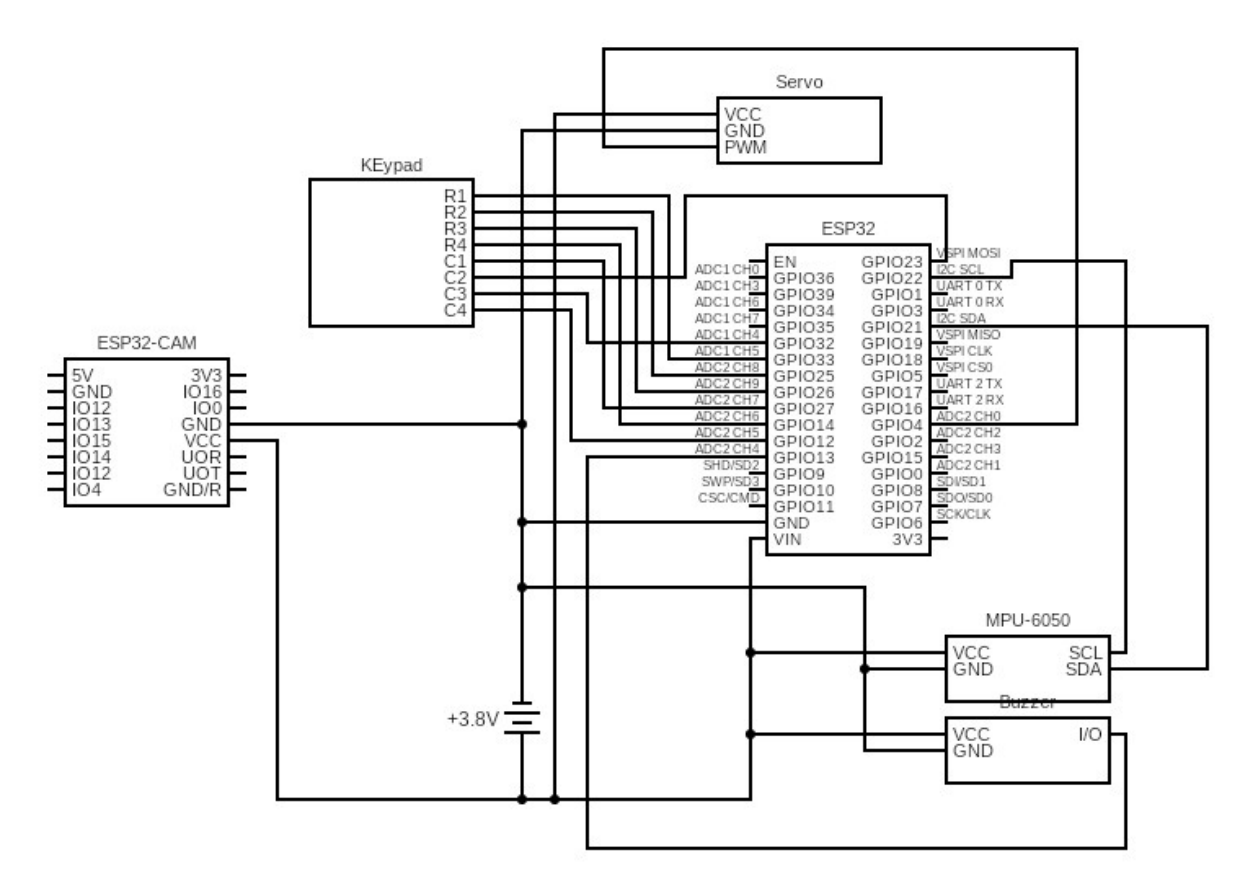
3.1 Assembling the LockBox Secure+

Safety Precautions: Prepare a clean and well-lit workspace to avoid damage to components. Avoid static discharge by grounding yourself before handling sensitive parts.

Assembly Steps: Follow these steps to assemble the LockBox Secure+:

- Mounting Components: Mount the ESP Cam, Numpad Pad, Buzzer, Accelerometer, and other components as per the provided instructions. Ensure proper alignment and secure attachment.

- Wiring and Setup: Establish wiring connections according to the provided schematic. Double-check connections for accuracy and security, considering the absence of a physical power switch.



3.2 Powering On and Operation

Powering On:

- Ensure all components are correctly assembled and connected.
- Insert the required batteries into the LockBox Secure+ battery compartment.
- The device will power on automatically upon battery insertion. LEDs or indicators may illuminate, indicating operational status.

Connecting to Wi-Fi Network :

- From your device's Wi-Fi settings, locate and select "ESPDAPPA" from the available Wi-Fi networks and enter the password: "password" when prompted.
- Open a web browser and enter "192.168.4.1" in the address bar, this action will redirect you to the configuration page
- On the configuration page, choose your desired Wi-Fi network from the list of available networks displayed. Enter the network password if required
- Confirm and save the Wi-Fi network settings.
- The ESP Cam of the LockBox Secure+ will establish a connection to the selected Wi-Fi network.
- Once connected, the LockBox Secure+ will be linked to the designated Wi-Fi network for remote monitoring and communication.

Operation:

- Once powered on, the LockBox Secure+ will be operational continuously, monitoring and responding to access attempts and movements.
- The device will remain active until the batteries are depleted or removed.

3.3 Shutting Down the Device

As the LockBox Secure+ does not have a dedicated power switch or a shut-off function, to stop its operation or conserve battery power:

- Battery Removal: To halt operation, remove the batteries from the LockBox Secure+ battery compartment. Ensure to replace them as necessary for continued operation.

Note: Ensure proper battery management, replacing batteries as needed to maintain functionality.

4. Using the LockBox Secure+

4.1 Interface Description

The LockBox Secure+ interface consists of several components:

- Keypad: The Numpad Pad serves as the primary interface for accessing the LockBox Secure+. It allows users to input a personalized PIN code for locking and unlocking the safe.

- LED Indicators: LED indicators may be present to display status information such as power, access status, and system alerts.

4.2 Locking and Unlocking Procedures

Unlocking the Safe:

- Input the personalized access code using the Numpad Pad.
- Upon successful input of the correct code, the safe will unlock, allowing access to its contents.

Locking the Safe:

- Enter “C” using the Keypad to lock the safe.
- Once locked, the safe will secure its contents until unlocked using the correct access code.

5. Security Features

5.1 Camera Usage and Image Transmission

Camera Activation:

- The integrated high-resolution ESP32 Cam captures images in real-time upon any access attempt, successful or unsuccessful and any movement detected for the safe itself.
- The camera is automatically triggered by access attempts and tampering.

Image Transmission:

- Captured images are promptly and securely transmitted to the owner via a secure communication channel like Telegram.
- The transmitted images serve as immediate visual evidence of any unauthorized access, providing real-time alerts to the owner.

5.2 Motion Sensor Alerts

Motion Detection:

- The built-in motion sensors actively monitor the safe's surroundings for any movements or tampering attempts.
- Upon detecting motion, the sensors trigger immediate alerts within the system.

Alert Notifications:

- When motion is detected, the system generates real-time alerts, signaling potential unauthorized access or tampering.
- Alerts are communicated through visual indicators and audible alerts, providing users with immediate notifications.

5.3 Audible Alerts

Buzzer Functionality:

- The audible alert system, comprising a buzzer, supplements the motion sensor functionality.
- Upon activation by the motion sensors or during specific events like incorrect access attempts, the buzzer emits audible alerts.