

Online Order Smart Lockbox

Brief Background: Throughout the holiday season and just in general people will make big purchases online and set them up for deliver. While you are given many options to track your package sometimes the exact delivery window is hard to pinpoint and you may not be home. This package then can be left at your door unattended with the potential of being stolen. This leads to the idea that a smart lockbox could hold your package.

Objectives: The smart lockbox will act as a safe housing to protect your expensive packages you have coming in. There could be a variety of different size models created for different average package size but they all would have the same basic functionality of keeping your package safe.

Features: A RFID or keypad in order to open the smart lockbox. A wireless connection in order to let you know when the lockbox is accessed, packages dropped off/picked up, failed attempts. Possible camera in order to stop thieves. Pressure sensor to ensure that a package is indeed dropped off and the box isn't just opened and closed. Scanner to be used by the delivery company dropping off package. Lockout in case too many unsuccessful attempts. This would require the owner to follow a special set of steps to unlock.

Implementation: The smart lockbox will sit on your porch to receive packages when you are unavailable or aren't home. The owner will have to use an app or manually input a code or tracking number in order to allow the lockbox to know which packages it should receive and therefore open for. This way the scanner built in can be used by the company dropping off the package to quickly identify the item and allow entry. Could also take pictures of delivery driver or the package safely inside the lock box. The user can then retrieve their package with an entry code or a RFID card. Additionally, more functionality could be added such as putting a 1 time entry code into the notes of an online order so the driver can drop off the package that way rather than scanning the item. The built-in pressure sensor and mobile alerts help with security and fooling the system. The driver couldn't just scan the package and leave without putting it in thanks to the pressure sensor and camera. Also, if he were to drop off the package and attempt to retrieve it the alerts would let you know the door was opened twice and the camera would capture the driver. The technology could be expanded for commercial use as well. Additionally, more features could become available or added on later such as a thumbprint scanner like on the iPhone.

Project Block Diagram:

