



**Engineering Design
Project
EN1190**

Smart Modular Power Outlet

KOS Tronics

(Knowledgeable and Outstanding Solutions)

A.D.T. Dabare	210089P
I.D. Madhushan	210349N
M.P. Wickramarathne	210703V
N.P.S.S. Rupasinghe	210549D

Problem

The current world is embracing smart technologies but majority of the devices we encounter does not have those capabilities. And there are no smart power outlets that are up to a level to be called smart. The existing solutions are neither customizable, repairable nor upgradable and does not have a robust design. When purchasing smart outlets, users currently have to pay for all the features even though they only need a specific function.

Solution

The solution we propose is a smart modular power outlet to which the user can attach modules as needed. In our proposed solution, users can get the smart power outlet base for a low price and then add up the required and additional modules as needed.

Example : If the user needs to turn on a fan via the Bluetooth, then they have to buy a smart fan(quite expensive) or to buy an existing smart power outlet which has so many other additional features that are not needed for the purpose.

Manufacturing a purpose specific solution can be costly because number of products is small but manufacturing a general solution that can be made purpose specific is ideal for that problem.

Working Principle

The device is consisted of two main parts.

- Main Base
- Modules

Main Base will be connected to a power outlet and any utility can be connected to it. Main base will control the AC supply to the utility and provide power to modules. Main base will have a port(interface) to communicate with the modules.

Modules can be attached to and detached from the Main Base. Modules will control the state of the Main base. Modules can have a variety of abilities based on their design. Multiple modules can be connected to the same Main Base.

Some examples for Modules

- Bluetooth Module
- Timer Module
- PIR Module
- Temperature sensing Module

How it stands out

- Customizability
- Comparatively low cost
- Can be a tool for other developments
- High Repairability
- Can be made purpose specific