The objective of this manual is to guide users on the proper operation of the solar power station.

The solar station is IoT based, and has a capacity of 500-watts to carry small, essential loads like electric fan, electric bulbs, phones, laptop, television, and so on. It can be used by homeowners, individuals on camping trips, etc. Its

Safety Information

i. Always turn off the solar station when not in use
ii. Do not use it to power large power appliances
iii. Avoid exposing the solar station to water
iv. Do not block the ventilation openings to prevent overheating
v. Do not exceed the solar station's rated power capacity, so as to prevent overheating, malfunction or damage.

Product Overview

The solar power station consists of the following components;

i. Solar panel: this is used to harness energy form the sun's radiation and convert it to electricity. Two 190 watts solar panels were used
ii. Charge controller: this regulates the voltage and current from the solar panels to the batteries, preventing overcharging and to protect the battery life
iii. Battery: the energy generated from the solar panels are stored in the batteries. The solar station consists of two 12volts/ 40ah batteries
iv. Inverter unit: this is used to convert the direct current from the batteries to alternating current

v. IoT System: this is a subsystem of the solar station. It consists of various sensors and electrical components that sense the solar station parameters. These parameters are then sent to a microcontroller, which processes it, and sends it to a database via the wi-fi module embedded in the microcontroller, which enables the microcontroller to connect to the internet. The microcontroller performs these functions because it is programmed to do so.

vi. Mi-Fi: this provides the internet connection for the microcontroller to connect to the internet

Product Setup

i. Power on the solar station by pressing the black button at the front of the solar station

ii. Power the IoT system by pressing the power button on the left side of the power station

iii. Once it is turn on, plug in your appliance at the back of the solar station, and press the power button at the back of the power station to turn on the supply of power to the load

iv. Make sure that the LCD shows the parameters of the solar station. Its shows that the solar station is connected to the internet

v. Make sure you are connected to the internet

vi. Download the mobile application on your phone

vii. Open the mobile application

viii. Turn off/on the power to the load