
“Secure Data Transmission through Light”

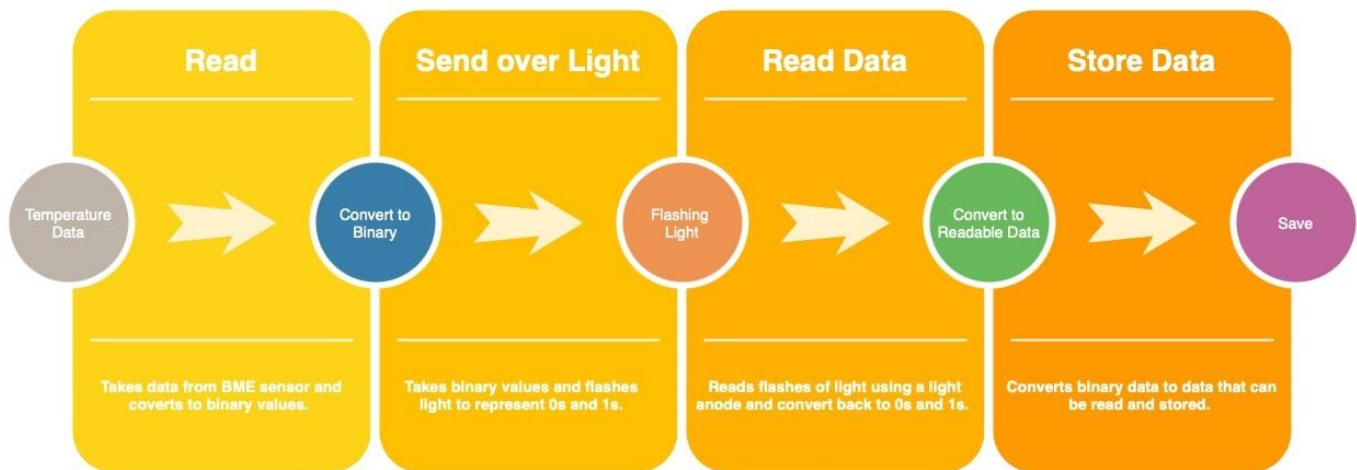
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Overview

The product’s purpose is to wirelessly send data over light, rather than over wires or radio frequencies. The data is converted into a series of 0’s and 1’s which is then translated into a flashing series of light. The system works like fiber optic, just without the fiber.

Features

For the purposes of this project, the “sending” device reads data from the BME280 sensor. First, temperature data is converted to binary. Then the data is sent to the laser for transmission. A flash of 5 milliseconds represents 0, and 10 milliseconds represents 1. The “receiving” device records the duration of each light flash and fills an array. Lastly, a series of “if” statements are used to read the binary data.



Summary

In the real world, data transmission through light has endless benefits including speed, security, data density, and even the absence of electromagnetic radiation. Since there is no need to run long cables, this system can be quickly deployed in the most remote of areas.

This product can be integrated just about anywhere with a need to increase connectivity or send data securely. Some of the most prominent potential customers for this product could include the Department of Defense, SpaceX, or Facebook.