

# Optical Data Transfer Using Laser and PV Panel

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## Introduction

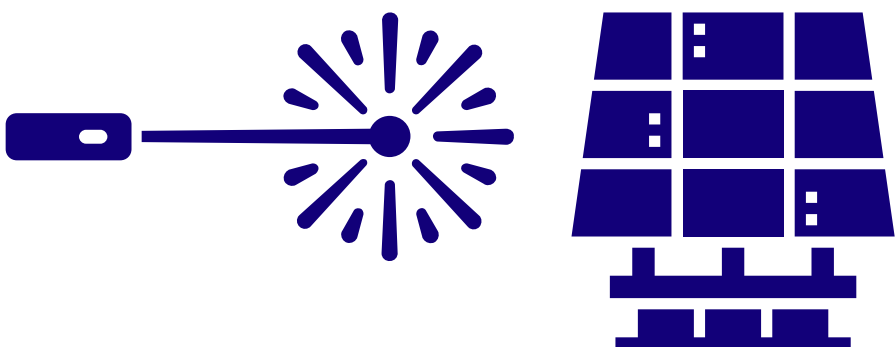
Our project combines algorithm design and communication elements using optical communication. We cater to different constraints such as data rate, information transfer accuracy, and distance. Making this project an interesting challenge when trying to minimize cost and power consumption compared to custom devices.

## Technical Contribution

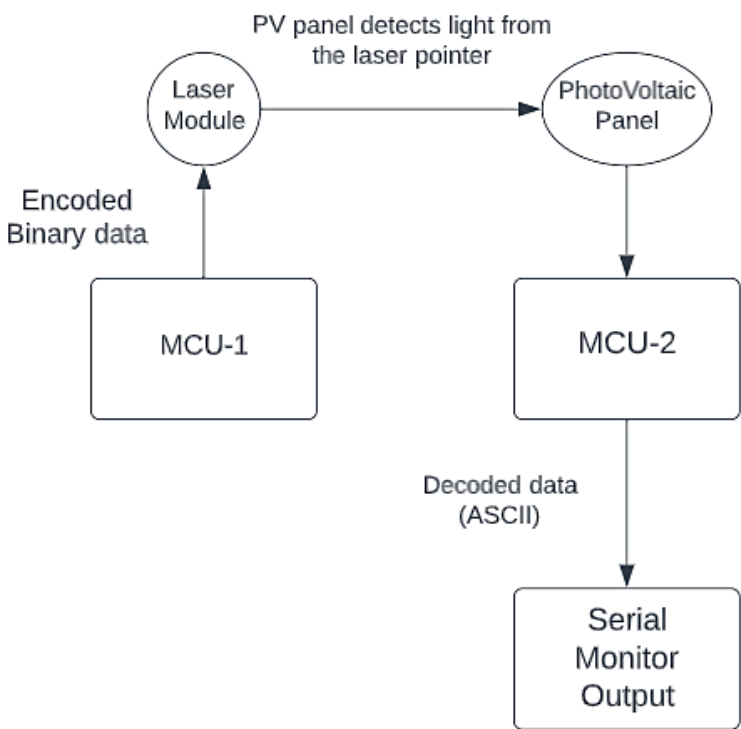
Our primary contribution is utilizing commodity devices to create a simple and fast modulation technique using optical transmission to accurately send and receive signals at distances far greater than previous works.

## Use Cases

- Underwater Communication
- Inter-Satelite Communication



## System Diagram



## Results

Average data rate: 1333 bits per second

Effective Distance: 250 ft or 76.2 meters

0% error with ambient light interference

## Conclusion

From our research, we can note that this project was successful. It displays superior data rate and transmission distance compared to similar solutions. However, this system was built using commodity hardware and in the future using a narrow beam laser and a more sensitive panel would increase the ability to transmit at distances in the hundreds of meters.