Laser-Based Voice Communication:

Submitted to:

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Laser-Based Voice Communication: A Step Towards Optical Wireless Innovation

Communication technology is rapidly evolving, and exploring unconventional transmission mediums are essential for innovation. In one of my mini-projects, I successfully designed and developed a Laser-Based Voice Communication System, utilizing laser beams to transmit audio signals over free space. This project highlighted the potential of optical wireless communication for secure and interference-free data transmission.

Project Insights & Technical Outcomes:

• **Optical Signal Transmission:** Implemented a modulated laser beam to carry voice signals with minimal distortion and high clarity.

• **Receiver Design & Signal Processing:** Developed a photodetector-based receiver circuit to accurately decode the transmitted audio.

• **Analog Circuit Integration:** Designed and optimized circuits for modulation, amplification, and transmission, ensuring efficient signal conversion.

Applications & Future Scope: Explored real-world applications in secure military communications, disaster recovery, and remote area connectivity.

This hands-on project significantly enhanced my expertise in **analog circuit design, signal modulation, and optical communication technologies.** It strengthened my ability to apply engineering principles to practical challenges, further fueling my passion for cutting-edge communication systems. Excited to contribute to innovations in wireless and optical communication!