

# **Abstract**

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## **Data transmission prototypes through wireless optical communication link using Arduino microcontroller**

In this paper, Free Space Optical communication link prototypes have been practically experimented. Audio and text data transmission models are implemented using a programmed microcontroller "Arduino Uno". Using a 650 nm laser source, a digital audio signal is transmitted with a data rate of 506.3 kbps in addition to a text data transmitted with a bit rate of 125 kbps. Both signals are received using a TSL250R photodiode. These prototypes create an FSO communication link designed for audio and text transmission. The use of Arduino microcontroller offers a more accurate transmission of higher quality. The concept discussed can be generalized for real optical communication systems instead of lab work only.