

## **ABSTRACT**

*Optical communication system is process arrived electric information signal from transmitter to receiver in form radiance waveguide with free space medium transmission.*

*This final object simulated optical communication system used tape recorder as information sources and speaker as receiver information as well as free space medium transmission.*

*To transmitted information signal from the source (tape recorder) pass through free space medium transmission then needed radiance waveguide to carrying signal information. With the result that, at tape recorder paired radiance waveguide transmitter like radiance source. Radiance source used this final object is LED (Light Emitting Diode) with waveguide 940 nm. In the receiver used phototransistor like as radiance detector with waveguide 940 nm.*

*For lookout in order that information signal arrived to receiver with good used FM-PLL modulation frequency. This specification modulation  $BW_{FM} = 90 \text{ KHz}$ , modulated frequency = 15 KHz, and reference frequency = 10 KHz*

*The final result, this experiment good used for short distance transmission.*