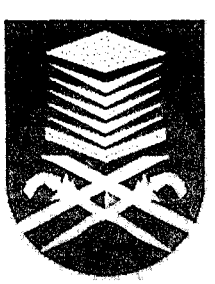
RAYLEIGH FADING SIMULATION
BY USING MATLAB

This Project Report is presented in partial fulfillment for the award of

Bachelor of Electrical Engineering (Honours)

UNIVERSITI TEKNOLOGI MARA



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ABSTRACT

A software fading simulator is constructed for simulating the Rayleigh distributed fading which is often encountered in mobile radio which is caused by diffraction and scattering from terrain features and buildings. A physical understanding and the consequent mathematical modeling of the channel is very important because it facilitates a more accurate prediction of system performance and provides the mechanism to test and evaluate methods for extenuating deleterious effects cause by the radio channel.

Due to the less expensive and more repeatable, the Rayleigh fading simulator are often used in the laboratory rather than the field trials. This Rayleigh fading simulator is designed as a convenient test instrument for evaluating the performance of the mobile radio equipments in the presence of environmental effects.

A simple device to simulate the Rayleigh distributed fast fading encountered in mobile radio is described and evaluated by using MATLAB software. .The system used the analog filter prototype to generate the control signals. The shaping filter is used for filtering the noise that comes from the Gaussian noise source. Then, the two quadrature components are independently modulated with the output from the Gaussian Noise source.

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