

**DESIGN AND CONSTRUCTION OF AN FM TRANSMITTER
FOR CVSU FM BROADCASTING STATION**

Design Project

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DESIGN AND CONSTRUCTION OF AN FM TRANSMITTER FOR CVSU FM BROADCASTING STATION

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*Design and construction of an FM
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ABSTRACT

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The main objective of the study was to design an FM transmitter. Specifically, it aimed to: construct an FM transmitter that can broadcast signal within the entire university with a frequency of 88.7MHz; construct an RF amplifier with a power of 10W, an FM modulator, and a directional suitable to the frequency, and; determine the system cost.

The design project was composed of: a mixer and an FM transmitter, an antenna which was connected to the antenna port of the transmitter; a computer that serves as the audio input, and; a cellular phone with radio application as a receiver. The FM transmitter was constructed with the regulated power supply, FM modulator, RF power amplifier circuit, and a fan.

The FM transmitter was installed and evaluated at the second floor of College of Engineering and Information Technologies' Engineering Science building. The maximum distance of transmission and clarity and fidelity of the reception were determined by using ordinary FM radio receivers situated on different locations within the university premises.

The constructed FM transmitter, connected to a directional antenna, can transmit signal within the entire university as evaluated by the ECE students. However, the transmission was affected by obstructions like trees and structures.

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INTRODUCTION

Communication is the activity of conveying information through the exchange of thoughts, messages, or information, as by speech, visuals, signals, writing, or behavior. It involves a sender transmitting an idea or information to a receiver. Effective communication occurs only if the receiver understands the exact information or idea that the sender intended to transmit.

Radio broadcasting is a one-way wireless transmission over radio waves intended to reach a wide audience. Audio broadcasting can also be done via cable radio, local wire television networks, satellite radio, and internet radio via streaming media on the internet. FM broadcasting is a broadcasting technology which uses frequency modulation (FM) to provide high-fidelity sound over broadcast radio.