

FINAL YEAR PROJECT REPORT

**Connecting Two Prototype Vehicles via FM
Transmission**



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A PROJECT REPORT

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DEPARTMENT OF ELECTRICAL ENGINEERING

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Declaration of originality

We declare that this project entitled “Connecting two prototype vehicles via FM transmission” is entirely our own work performed under the guidance and teachings of our respected faculty members, our project advisor, batch mates and seniors.

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Rabia Hussain

Dedication

We want to dedicate this work to Ms. Samia Nisar who helped us very much in all our outdoor activities to achieve the fulfillment of our project.

Acknowledgements

We from the core of our heart represent our gratitude to Allah Tabarik Ta'la, the lord of the mankind, the Guider, and the Merciful. Prophet Hazrat Muhammad S.A.W who is the greatest teacher of all times.

Our advisor Mr. Jameel Ahmad without whose support we might have been in a great loss.

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Abstract

Our FM transmitter and receiver are built with discrete analog components and integrated on three circuit boards. This project designates the design work for our intention to connect to vehicles by implementing of transmitter-receiver technique by means of frequency modulation of range HF i.e. 25MHz. Our design consists of an audio amplifier, VCO (Voltage Controlled Oscillator), crystal COLPITTS oscillator, power amplifier at transmitter side whereas receiver consists of LNA (Low Noise Amplifier), oscillator, mixer, PLL (Phase Locked Loop) and a low pass filter. Our measurement and results are also included in this project. The power of our transmitter is 486mW and receiver is 126m W. This receptivity level translates to successful audio reception at distances of almost 30m from the transmitting antenna.

Chapter 1 Introduction

In order to over-come two great problems these days of emergencies and noise during vehicle use, the technique of communication via frequency modulation transmission is aimed to be used in this project designing whose range must be at least 11m to 30m. Frequency used is 25MHz. Transmitter power of 486mW and 126mW for receiver. This report consists of designing, calculations, and outputs, results problems faced and cost analysis as compared to market survey. We made our project in very low cost as compared to those available commercially.

1.1 Problem statement

While driving, we face many emergencies, very common but problems whose results are fatal in daily