

SCHOOL OF ENGINEERING

DESIGN AND IMPLEMENTATION OF AN ACTIVE MIXER

STUDENT'S NAME : PANNIRDAS S/O KRISHNAN

STUDENT'S ID : 99107088

MAJOR : B. ENG. (HONS) ELECTRONIC AND
COMMUNICATION ENGINEERING

FIRST SUPERVISOR'S NAME : MR. FAWWAZ ABU KHADRA

SECOND SUPERVISOR : MR. MOEY LIPKEAN

PROJECT'S COORDINATOR : DR. KHEDR M. M. ABOHASSAN

JANUARY - AUGUST 2005

Abstract

This is the complete final report of the project, The design, implementation and measurement of an Active Mixer. In short this project required the student to build a mixer circuit and to understand the operation of mixer process. Both the theoretical and the mathematical equation of the mixer, other types of mixer circuit are also studied and understood.

This report contains necessary information related to the project.

This report describes a Gilbert Cell mixer Circuit which used 2N3904 designed in Bipolar Junction Transistor (BJT) and power supply 10V for entire mixer circuit. The input signal was applied at both RF and LO port at different frequencies and their simulation curves were studied for a multiplier. The implementation of BJT transistor is studied in the application of Gilbert Cell Mixer. A comparison of theoretical and experimental results obtained after fabrication.