

## 2. INTRODUCTION

This project was undertaken for the specific purpose of investigating the technical feasibility of developing locally and from first principles a very basic microcomputer for educational and training purposes. The target market area for such a product would include, but not limited to students of electronics and computers from Secondary, Technical, Vocational schools and Universities and Electronic Technicians/Engineers from industry.

The microcomputer is based on the Motorola MC6809 microprocessor, with 2K bytes of system EPROM, 2K bytes of user EPROM, 8K bytes of RAM and a Keyboard/Display module. Of special significance was the use of the Signetics<sup>1</sup> FPLA (Field Programmable Logic array) for address and device decoding. The computer also has expansion capability as described in later sections.

Use was made of Gould Biomation Model K105 Logic Analyser<sup>2</sup> and Tektronic 8450A Integration Unit<sup>3</sup> for hardware testing and hardware/software integration respectively.

User programmes are entered and debugged using the integral keyboard/display module and the MOGRAM monitor programme. The keyboard/display module is on a separate circuit board to facilitate ease of expansion.

The following three stages of development were used in the design and development of the microcomputer:

- (1) Hardware Design.
- (2) Software Design.
- (3) Hardware/Software Integration.