

- SPECIFICALLY DESIGNED TO REDUCE DEVELOPMENT COST FOR USERS OF MICROCOMPUTERS.
- COMPLETE REAL TIME SIMULATION OF APPLIED COMPUTING TECHNOLOGY'S CBC-4N MICROCOMPUTER AND INTEL'S MCS-4 SET™.
- MAKES USE OF A SINGLE PASS ASSEMBLER FOR EASY PROGRAMMING.
- INCLUDED IS A CHIP BASED OPERATION SYSTEM (CBOS) FOR FAST SYSTEM CHECKOUT.
- STAND ALONE SYSTEM INTERFACES DIRECTLY WITH A TELETYPE.



LSI technology has advanced to the point where computing power is available in a convenient size and economical price advantageous to all design engineers. Applied Computing Technology's model CBC-4 is a first ... it is a self-contained Microcomputer prototype development system designed to simplify the programming and checkout of the Intel MCS-4™ microcomputer set and Applied Computing Technology's CBC-4N microcomputer.

Using the CBC-4, the microcomputer can be programmed rapidly and exercised on line. Drastic reductions in development time are realized by the use of a built in Chip Based Utility System (CBUS), a single pass assembler, Read Only Memory (ROM) simulator and PROM programmer.

In a typical application, the chip resident assembler is used to enter a program into the CBC-4 via a

teletype. The assembled program resides in an internal Read/Write (RW) memory, i.e., the ROM Simulator. After the program has been loaded, the CBC-4 uses the assembled program to directly simulate the complete Intel MCS-4™ set and the CBC-4N. Using optional interface modules, external devices may be interfaced directly through 16 parallel 4 bit wide TTL compatible I/O channels in the CBC-4.

Program modification may be made rapidly using the teletype by virtue of the CBUS system. Upon completion of program checkout, the CBC-4 can be used to transcribe the proven program into semi-permanent storage in Programmable Read Only memories (PROM)s. The Programmed PROMs can be inserted in the CBC-4N microcomputer on any other system that makes use of the MCS-4™ set.

GENERAL FEATURES AND SPECIFICATIONS

SYSTEM HARDWARE

CBC-4 A Chip Based Controller designed to provide an economical solution to the incorporation of the Intel MCS-4™ Computer Set in digital control applications. This unit includes cabinet with console, power supply, processor, I/O interface bus, teletype interface, PROM programmer and up to 17K of memory. Provisions are included for 16 4 bit I/O channels, which may be used simultaneously.

CBM-4 The Chip Based Read-Write Memory which has a total capacity of 4K 8 bit words. This 1 microsecond memory can be used as an easily alterable ROM simulator to reduce micro-program development time typically to less than 5% of that which would be required using PROMs.

CBOS The Chip Based Operating System which provides a Teletype Utility System and a Built-In On-Line Assembler.

ROMP This programming card which fits in the CBC-4, enables the automatic programming of the Intel 1602, 1702A PROM memories. Programs will be transcribed from the Read-Write Memory for semi-permanent storage. This operation is under the control of CBOS.

SYSTEM SOFTWARE

CBUS The Chip Based Utility System provides the capability of inspecting or changing the content of the Read-Write (4K) or the Scratchpad (1.2K) Memories via the teletype. It also contains the program used to transcribe the Read-Write Memory data into PROMs.

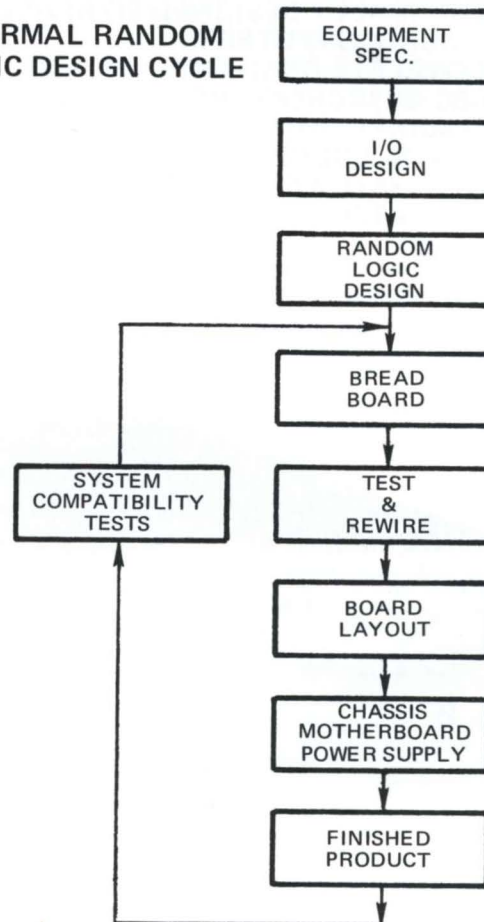
CBAR The Chip Based Assembler Routine provides the capability of on-line program conversion from an assembler language to the machine code in the Read-Write Memory.

SPECIFICATIONS

- 1.0 microsecond memories
- 4-bit parallel CPU with 45 instructions
- 11.8 microsecond full instruction cycle
- 16 4 bit index registers
- Decimal and binary arithmetic modes
- Nesting of subroutines up to 4 levels
- Conditional branching, Jump to Subroutine, and Indirect Fetching Instructions.

* MCS-4 is a Registered Trademark of the Intel Corp.

NORMAL RANDOM LOGIC DESIGN CYCLE



APPLIED COMPUTING TECHNOLOGY CBC-4 DESIGN CYCLE

