INTERFACE AGE™

MICROCOMPUTING FOR SMALL BUSINESS AND HOME
VOLUME 3, ISSUE 2 FEBRUARY 1978 $2.00
CANADA/MEXICO $2.50 INTERNATIONAL $3.50

LSI-11 Microcomputers in Hospital ICUs

A Keyboard/Display Interface Peripheral on a Chip

TAPEMON: 8080 Binary Tape Monitor

SFS WALLETSIZE Spaceship Simulator — Part I

VideoBrain

The Consumer Computer

By Mike Peak

INTRODUCTION

Consumer electronics is one of the oldest industries known as "electronics." Consumer electronics dates as far back as the crystal receiver, and is ever advancing with the state of the art.

During the past three years, a new and exciting generation of consumer-oriented devices has been made available to the American public. These devices have ranged from video games to highly sophisticated video cassette systems. Now as we enter 1978, another new and innovative approach is being taken by the electronics industry.

The industry is now viewing the microprocessor, not only for games, but for viable home computing systems. One company in particular, VideoBrain of Sunnyvale, California, has recently developed one of the more exciting entrants to the new field of consumer computers. This new device is named the VideoBrain.

The VideoBrain is the first true turnkey computer system built with the general consumer in mind. Built around the F8 microprocessor the VideoBrain does not require any computer expertise on the part of the user.

THE CONSUMERS' INTERESTS

According to Dr. David Chung, one of the developers of the system, the VideoBrain was designed to fit five areas of consumer interest.

The first and most obvious is entertainment. The VideoBrain is indeed entertaining. Several off-the-shelf game programs are available with more on the way. The second area is education and self-improvement. With the VideoBrain the user can practice typing or learn music. The third area is personal finance and data storage with hardcopy printouts. The VideoBrain can be used to balance the checkbook or handle the yearly Christmas card list. Fourth, the system is a communication device when used with an audio coupler. Using the VideoBrain as a communications device, the consumer can have the convenience of quering large data bases, or depositing information into them, for use by others. Finally, the area of home control has been addressed. The system, along with the appropriate application package, can be used to handle the daily mundane tasks of controlling the household environment.

Both developers, Dr. Yu and Dr. Chung, feel that the personal computer, up until now, has been in the same class as calculators, chips, and watches. The product is developed and marketed, in large volumes, without sufficient thought going into what the consumer really wants. Therefore, to add viability to the VideoBrain, the broad spectrum of the marketplace has been addressed. Consequently the VideoBrain system provides something for everyone in the family, not just the inhouse computer enthusiast.

BASIC STRUCTURE

The F8 microprocessor, used in the VideoBrain, was originally designed for use as a controller, and consequently does not use the typical hobbyist bus structure. However, the bus structure used by the VideoBrain is designed to allow for the addition of a network of MPUs by simply clipping them on. As Dr. Chung describes it, "The machine uses both a tightly coupled and loosely coupled method of bus architecture. This method of bus design gives the system a great deal of flexibility, when connecting it to other intelligent devices."

. . .it would take 100 4K RAMs, and possibly two MPUs to service the RAMs, to perform the same function.

The system incorporates a new innovative chip, used to handle the screen housekeeping. Therefore, approximately 100,000 points and 16 bright colors can be defined and displayed. To relate this to conventional systems, it would take 100 4K RAMs, and possibly two MPUs to service the RAMs, to perform the same function.

The keyboard used with the system is somewhat unconventional. However, it was designed only after careful consideration of what would be workable for the consumer, and also be cost effective. The keyboard controls all the computer functions including changing the color displays.

The machine in its basic configuration comes with 1k of RAM, which allows for five lines of 16 characters of text. Also included is 4k of ROM for handling the internal working of the machine. The system is expandable, not by adding to the bus, but through the ROM cassettes.

APPLICATION DEVELOPMENT

The area of applications, for the VideoBrain, are by far the most exciting thing about the machine. The applications are designed in the same manner as they would be for a large system. This requires application planning, that is, the need and method are previously defined. Then the entire program development is handled by a programming team utilizing the best of all possible programming techniques. The result is highly reliable and efficient software to handle the needs of the consumer.

The programs are run in the machine by popping a ROM cassette into the built-in reader. Therefore, instant communication exists between the computer and the user.

SUMMARY

The VideoBrain comes with a spectrum of cassette programs from games to personal finance. The plan for future application development is three programs a month selling in the 20 to 50 dollar range, depending upon the complexity of the program.

The VideoBrain people have addressed the problem of add ons and are making available so-called expandables. These expandables will give the user the ability to interface with teletypes, printers, audio cassettes, and sensing devices.

The VideoBrain is designed to be the very first computer system to take full advantage of current technological know-how, and remove the mystery surrounding computers. The VideoBrain provides for man machine interface by utilizing familiar objects found in the home, the color TV and telephone. The basic application design provides something for everyone with the greatest emphasis placed on the homemaker.

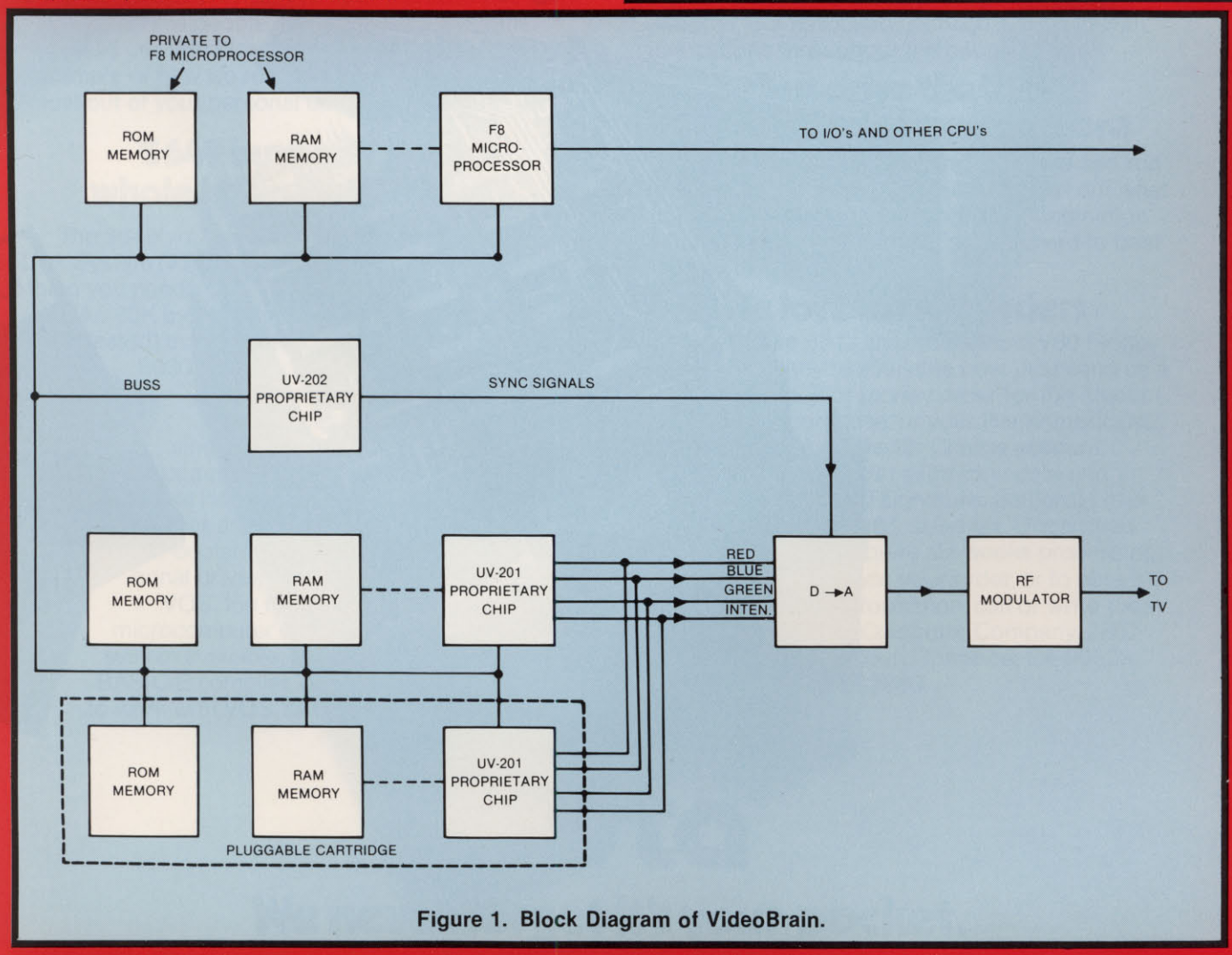

Figure 1. Block Diagram of VideoBrain.