CPS-216 S-100 BUS 16-BIT DUAL SLAVE PROCESSOR

From InterContinental Micro Systems

The newest innovation from InterContinental Micro (ICM) is our Single Board Dual 16-Bit Slave Processor. This Single Board Computer contains two 16-Bit, 8 MHz, 8086 Slave Processors. Combining high performance in a compact environment, this board gives you the potential to double the amount of users in your existing chassis. Both slaves give you true 16-Bit performance with 256K RAM. In addition, this board can be used as an intelligent interface to a wide range of peripherals. The board contains four serial ports (two ports per slave).

The CPS-216 is fully compatible with the IEEE 696.1/D2 S-100 specifications. It interfaces with InterContinental Micro's CPZ-186 (16-Bit) or CPZ-4800X (8-Bit) Master Processors. Because the CPS-216 is an I/O Mapped Slave, it can also be integrated with any Z80™ or 16-Bit based CPU complying with the IEEE 696.1/D2 S-100 Bus Standard.

The CPS-216, operating under TurboDOS™, allows this slave to be mixed with 8-Bit Z80 based slaves and 16-Bit 8086 or 80186 slaves on the same bus. When used with InterContinental Micro's unique TurboLAN™ architecture, up to 4000 slave processors or 255 IBM PC's™, PC Compatibles, or "Dumb" Terminals can be linked together in the same network.

TECHNICAL FEATURES

- ☐ IEEE 696.1/D2 S-100 compliance, interfaces with most IEEE S-100 Bus products on the market.
- ☐ Compatible with (1) InterContinental Micro's CPZ-4800X Master Processor, (2) InterContinental Micro's CPZ-186 Master Processor, (3) any Z80 or 16-Bit based CPU complying with IEEE 696.1/D2 S-100 Bus Standard.
- ☐ Data Transfers: 8-Bit capability.
- ☐ 8 MHz 8086 CPU.
- ☐ Four NEC 7201 USART Serial I/O channels.
- ☐ 256K Bytes of on-board RAM per user.
- ☐ S-100 resident address is switch selectable, (0-FF).
- ☐ I/O port address: switch selectable, uses 8 I/O ports.
- ☐ Priority interrupts: vectored, fixed or rotating interrupts eliminates polling.
- ☐ Software selectable baud rates, up to 38.4K, eliminates costly, complicated hardware modifications to change baud rates.
- ☐ TurboDOS operating system available which runs CP/M 86, CP/M, or MP/M.
- ☐ No personality boards required.
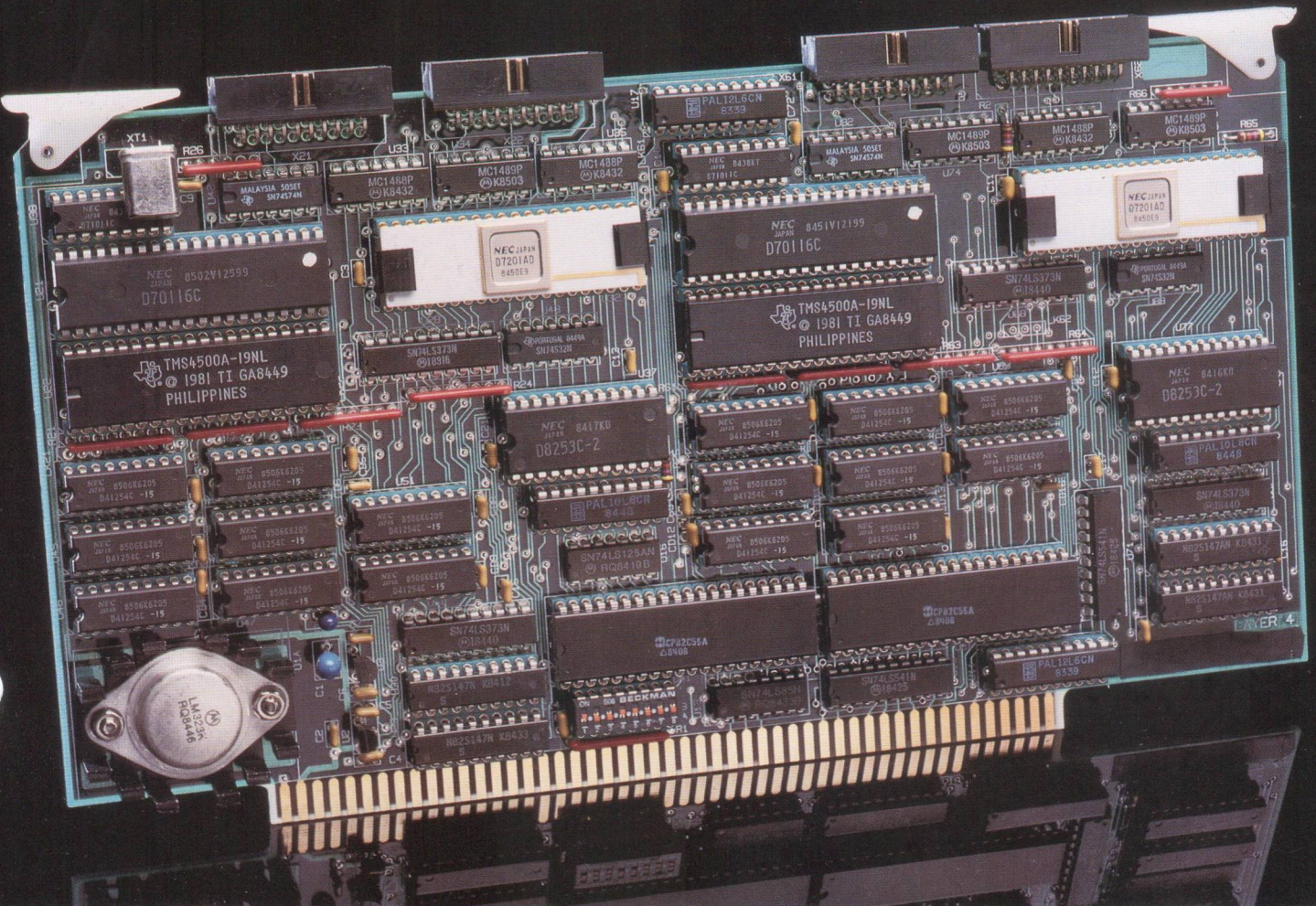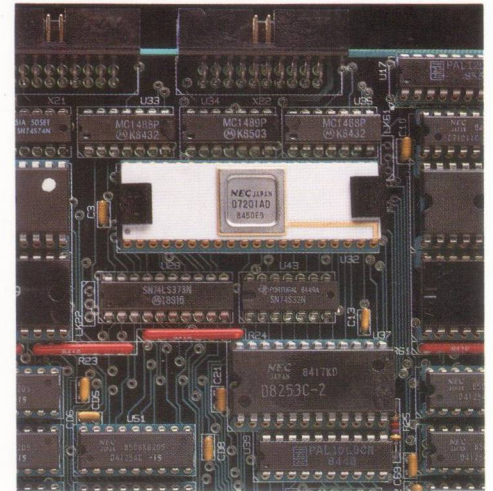
TurboLAN NETWORK ARCHITECTURE

ICM's revolutionary TurboLAN architecture uses the TurboDOS Operating System to build sophisticated, cost effective, multi-user systems and networks. TurboLAN provides the flexibility of building multi-user systems with S-100 BUS Structured Networks and ARCnet™ Local Area Networks. TurboLAN offers:

- ☐ Ability to network S-100 Bus Systems, PC's, XT's™, AT's™, Z-100's, PC-JR's™, PC Compatibles, ICM's WS80 Diskless Workstation, and other ARCnet computers.
- ☐ Uses Master Processor (File Server), such as ICM's CPZ-4800X (8-bit) or CPZ-186 (16-bit) Single Board Computers, or the IBM XT or AT.
- ☐ Up to 4000 users per network with 255 nodes per network segment.
- ☐ Network self configures and efficiency increases as nodes are added.
- ☐ Up to 40 miles between processors (Active Hub) or 2300 Ft. (Passive Hub).
- ☐ 2.5 MBIT/SEC data transfers.
- ☐ Communication across S-100 BUS, Coax cable, or twisted pair.

TurboDOS OPERATING SYSTEM

TurboDOS is a true multi-user Operating System because it was designed from its beginnings to handle multiple computers running simultaneously on one or more networks. Each user is assigned an individual PC or a terminal attached to a Single Board Computer/Processor. This PC or individual processor is called a SLAVE Processor in the TurboDOS architecture and acts independently of all other slaves on the network. A MASTER Processor, also known as a FILE SERVER, controls the network by downloading the operating system to each slave. The MASTER also downloads system files and orchestrates the use of all common peripherals. With its modular architecture, TurboDOS can increase the number of users or add peripherals on the network with a general software command that "links and patches." TurboDOS is the most sophisticated, yet cost effective Multi-user operating system available today.

TurboDOS FEATURES

- ☐ Compatible with many OS's Application Software: CP/M™, CP/M-86™, MS-DOS™, MP/M™, MP/M 86™, CP/M PLUS™.
- ☐ Ability to mix Z-80™, 8-bit; 8088 and 8086, 16-bit families of processors.
- ☐ Flexibility to build Bus Structured (Tightly Coupled) Networks and Cable Structured (Loosely Coupled) Local Area Networks using ICM's TurboLAN.

- ☐ Record and File Locking with File Sharing among multiple users.
- ☐ Automatic Print Spooling.
- ☐ Typically 300% faster than UNIX, MP/M, Oasis™ or similar multi-user, single-processor, multi-tasking OS's.
- ☐ 16 Logical Disk Drives per Master Processor/ File Server.
- ☐ Up to 1000 MB per drive and 134 MB per file.
- ☐ 32 user areas (file libraries) on each disk.
- ☐ 25% to 30% more floppy disk capacity.
- ☐ Sharing of costly peripherals and disk drives.
- ☐ Read after Write verification of floppy and hard disk drives.

- ☐ Logon/Logoff and Privileged/Non-privileged Security.
- ☐ Background processing and Archival Back-up of files.
- ☐ Queuing of multiple tasks – processing or printing.
- ☐ Each individual TurboDOS OS has 4 Circuit Drivers with 255 nodes (slaves) per circuit driver = 1020 users per File Server.
- ☐ Multiple File Servers can be linked together with ICM's TurboLAN drivers.

Performance Specifications

MICROPROCESSOR
Clock rate..8 MHz 8086

BUS INTERFACE...IEEE 696.1/D2 S100

DYNAMIC RAM MEMORY
Capacity...256K Bytes
Wait States...None

SERIAL I/O CHANNELS
Asynchronous Operation
Baud Rate...Up to 38.4K BAUD
Clock Rate...1, 16, 32, or 64 times Baud Rate
Bits/Character...5, 6, 7 or 8
Stop Bits...1, 1½ or 2
Parity...Odd, Even or None
Data Transfer...Interrupt or Programmed I/O

POWER REQUIREMENTS
Voltages... + 8 VDC @ 2.2 (max)
+ 16 VDC @ 0.2A (max)
− 16 VDC @ 0.2A (max)
Power...24.0 W (max)

OPERATING ENVIRONMENT
Temperature...0 to 50 Degrees Celsius (32 to 122 Degrees Fahrenheit)
Relative Humidity...0 to 95%

CONSTRUCTION
Circuit Board...Four Layer Glass Epoxy
All IC's in sockets
Connectors...Shrouded for Protection
TESTING...Completely tested and 24 hour burn-in
WARRANTY...One Year Warranty (Parts and Labor)

Intercontinental Micro Systems

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