LANS100, S-100 BUS LOCAL AREA NETWORK CONTROLLER

From Intercontinental Micro Systems

UP TO 4080 USERS

Intercontinental Micro's ICM LANS100 allows a simplified interface between the S-100 BUS and an ARCnet™ Local Area Network. The board contains the complete controller for this modified token passing network. The LANS100 provides the interface to link an S-100 Bus system to another S-100 Bus system. Using ICM's TurboLAN software drivers, the LANS100 also provides the ability to link an S-100 Bus Structured System to other ARCnet compatible 8-bit and 16-bit computers, such as the IBM-PC.™

OTHER STANDARD FEATURES:

- ☐ IEEE 696.1/D2 S-100 Bus Compliance.
- ☐ Compatible with ICM's CPZ-4800X SBCP, any 8-bit CPU with or without extended address capability, or any 16-bit CPU complying with IEEE 696.1/D2 S-100 Bus specification.
- ☐ I/O Polled or Interrupt Driven via VI Lines.

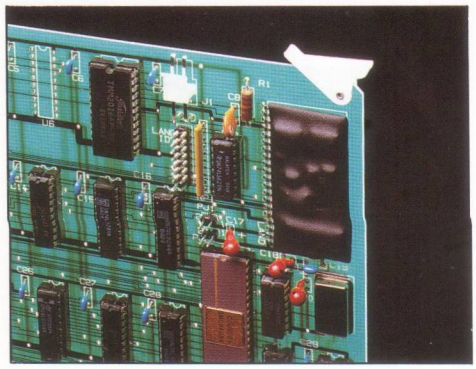
MicroNet™ NETWORK ARCHITECTURE

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

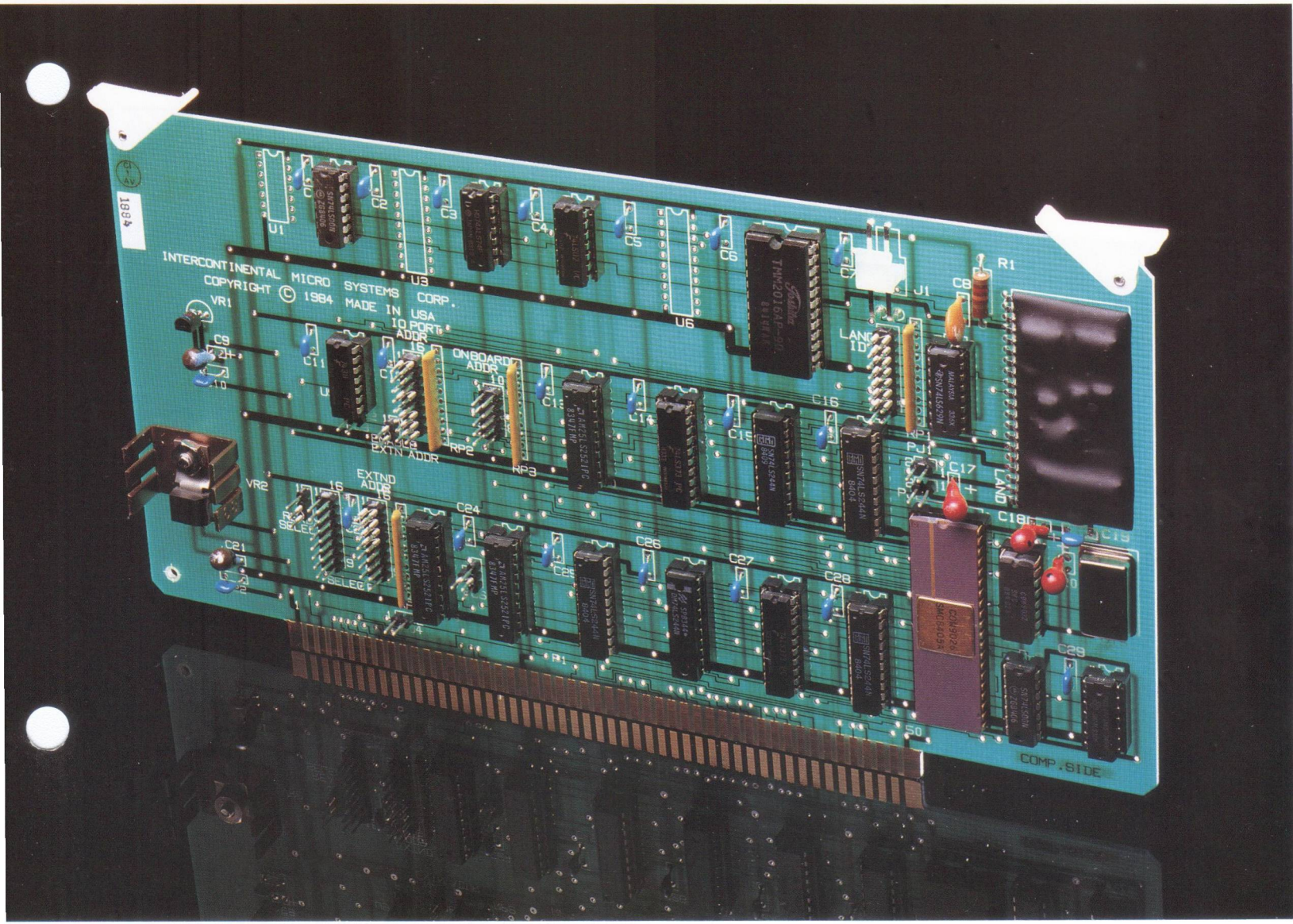
- ☐ Ability to network S-100 Bus Systems, IBM-PC's, PC Compatibles, ICM's WS80 & WS16 Diskless Workstations, and other ARCnet computers.
- ☐ Uses Master Processor/File Server such as ICM's CPZ-4800X Single Board Computer.
- ☐ Up to 4080 users per network with 255 nodes per network segment.
- ☐ Network 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,™ PC-DOS,™ MS-DOS,™, MP/M,™ MP/M 86,™ CP/M™ even CP/M 86,™ CPM PLUS,™ Concurrent CP/M 86.™
- ☐ Ability to mix Z-80, 8-bit; and 8086, 16-bit families of processors.
- ☐ Flexibility to build Bus Structured (Tightly Coupled) Networks and Local Area (Loosely Coupled) Networks using ICM's MicroNet.
- ☐ Record and File Locking with File Sharing among multiple users.
- ☐ Typically 300% faster than CP/M, 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.
- ☐ Each user can independently STOP, RESUME or ABORT a program.
- ☐ Sharing of costly peripherals and disk drives.
- ☐ Read after Write verification of floppy and hard disks.
- ☐ Logon/Logoff and Privileged/Non-privileged Security.
- ☐ Background processing and Archival Back-up of files.
- ☐ Queing of multiple tasks—processing or printing.
- ☐ Automatic Print Spooling.
- ☐ 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

BUS INTERFACE . . . . . IEEE 696.1/D2 S100
Status, control, data and address. I/O port address jumper selectable for address range from 00h to FFh. Message Buffer address jumper selectable for address range from 010000h to FFFFFFh.
Phantom . . . . . Requires connection if Message Packet Buffer resides within first 64K Bytes of System Memory. Not required with CPZ-4800X if used in Memory Mapped mode.
Ready . . . . . Requires connection to XRDY or PRDY for synchronous access to Data Packet Buffer and control registers.
Interrupt . . . . . Interrupts Host Processor when status bits become stable. Interrupt connected via one of 8 VI lines.

Network Interface . . . . . Modified Token Passing Local Area Network
Transmission Mode . . . . . Baseband Frequency
Transmission Medium . . . Coaxial Cable/RG62 (93 ohm)
Transmission Distance . . . 2300 feet max (Passive Hub) 40 miles max (Active Hubs)
Transmission Speed . . . . . 2.5 Mbps, Typical
Transmission Voltage
Transmit Mode . . . . . 20.1V P-P Typical
Receive Mode . . . . . 6.7V P-P Typical

Data Packet Buffer . . . . . 2 Kbyte by 8 Bit Static RAM
Wait states . . . Requires connection to XRDY and PRDY for synchronous acces to Data Packet Buffer
Direct memory transfers . . . to/from CPZ-4800X SBCP
Data transfer rate (non-DMA) . . . . . 190 Kbytes/sec
Data transfer rate (DMA) . . . . . 571 Kbytes/sec
Memory address . . . . . switch selectable in 64 Kbyte boundaries

Power Requirements
Voltages . . . . . +8 VDC @ 1.0 A(max)
−16 VDC @ 50 mA(max)
Power . . . . . 8.8W(max)

Operating Environment
Temperature . . . . . 0° to 45° Celsius
Relative Humidity . . . . . 0 to 95%

Construction
Circuit Board . . Double Sided Glass Epoxy, Vacrel Solder over Bare Copper, all IC's in Sockets.

TESTING . . . . . Completely tested and 24 hour burned-in

WARRANTY . . . . . One Year Warranty (Parts and Labor)

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