5017

64 Channel Chassis with Integrated Controller

DTX-5017 Chassis

Features

- **Compact - Low Noise Design**
  64 channels in a 5U rack
  Component Isolation
  Internal Shielding
  Isolated Power systems

- **COTS Platform**
  Intel P4 Processor
  Window OS
  10/100 baseT Ethernet
  KVM Interface ports

- **Local or Web based Control**
  Graphical User Interface
  Automated setup

Description

The DTX-5017 Chassis Unit serves as the host for all installed 5xxx and 6xxx series modules providing operating power, analog signal input and output connections, digital module control functions, and computer platform for the Graphical User Interface (GUI). Configured as 16 slots accepting any of the DTX-5000/6000 series modules allows for a mix and match of signal conditioning functions. Commercial Off The Shelf (COTS) computer hardware (Pentium processor) and Microsoft Windows OS were selected to insure compatibility with future technology trends and to facilitate product maintenance. Standard 10/100 baseT Ethernet is included for Web based applications along with PC compatible keyboard, video and mouse (KVM) ports for standalone operation. User interface and control software allows for ease of setup as standalone instrumentation, operation as a Web based appliance or integration as part of an automated test system.

Design Features

A compact 5U chassis was developed to house up to 16 four-channel conditioning modules and a complete single board computing system. Internal shielding separates digital computing hardware and main power systems from conditioning modules reducing electrical noise and controlling airflow within the chassis. In addition a single shielded backplane is used to route all signal input and output connections directly to each module eliminating internal cabling or interface connectors as potential noise sources.

COTS Technology

The 5000 Chassis uses a standard micro-ATX computer board as the system controller with a Widows operating system. This board contains an Intel P4 processor running at 1.7 GHz, 512 MB of system RAM and two PCI bus slots for system expansion or future enhancement. Also included are an Ethernet interface for remote operation and keyboard, video and mouse ports for standalone operation. Using a standard processor board allows the

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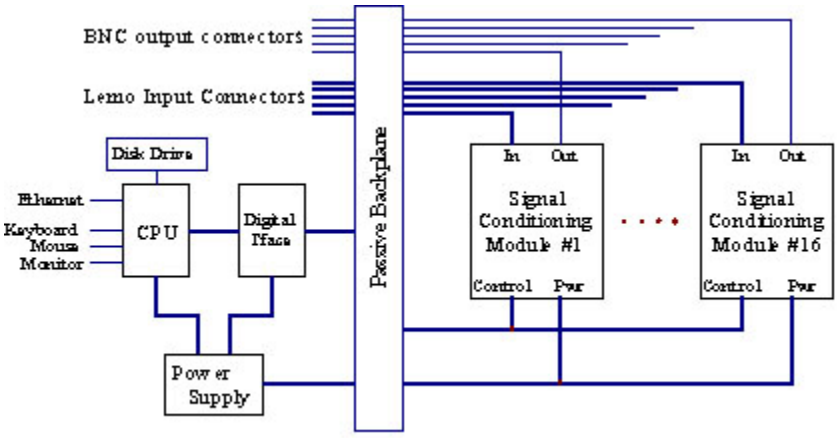

DTX-5017 Chassis Technical Diagram

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unit to be used with a variety of monitors, printers, and other external devices, and allows the system to be upgraded as technology advances.

Digital Interface

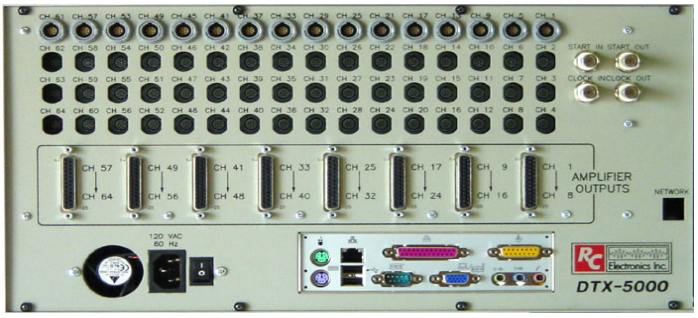
A proprietary interface board is used to connect the CPU's PCI bus to a passive backplane. This board provides PCI bus interface buffering and address decode for controller interaction with individual modules and a mechanical interface between the ATX motherboard and 5000 chassis backplane.

Power Supply

A single 300w low profile ATX-type switching power supply is mounted in a shielded enclosure along side the main processor board providing system level power to chassis components and installed signal conditioning modules. Individual modules convert this system level power into isolated power supplies for analog circuit components reducing conducted EMI and further enhancing front end performance. Using a readily available COTS power supply with standard connectors allows for ease of replacement or future upgrade.

Input/Output Connectors

All sensor input signals are routed from the rear connector directly to each module through a shielded backplane. Isolated 7-pin Lemo connector or commercial RJ-45 input connector options are available. The connector pins are soldered directly to the passive backplane, and the signal conditioning modules also connect directly to the backplane, avoiding the use of less-reliable and more noise-sensitive cabling inside the chassis. The conditioned voltage outputs from each module are returned through the backplane directly to a DB25 connector in 8 channel increments. The use of standard DB25 output connectors allows for direct cabling to DataMAX II instrumentation recorders. Using the DTX-BNC adapter allows the output signals to be routed to isolated BNC connections. Routing all input and output signals through the back panel eliminates internal cabling and potential problems associated with multiple internal interface connectors.



Back of DTX-5017LE Chassis with 64 Channel Lemo connector input option.

Specifications

General

Number of Module Slots	16
Dimensions	8.75" high x 17.6" wide x 12" deep
Weight	16 lbs.
Input connector type	RJ-45 (standard) Lemo (optional)
Output connector type	DB25
Power requirements	120v AC, watts max (all slots filled)

System Controller

Processor	1.7 GHz Intel P4
RAM	512 MB
Program hard drive	40 GB
Operating system	Microsoft Windows® 2000 Professional
Network interface	10/100 Mbit Ethernet
Operating temperature	0 to 50°C
Indicator LEDs	Hard drive activity,

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