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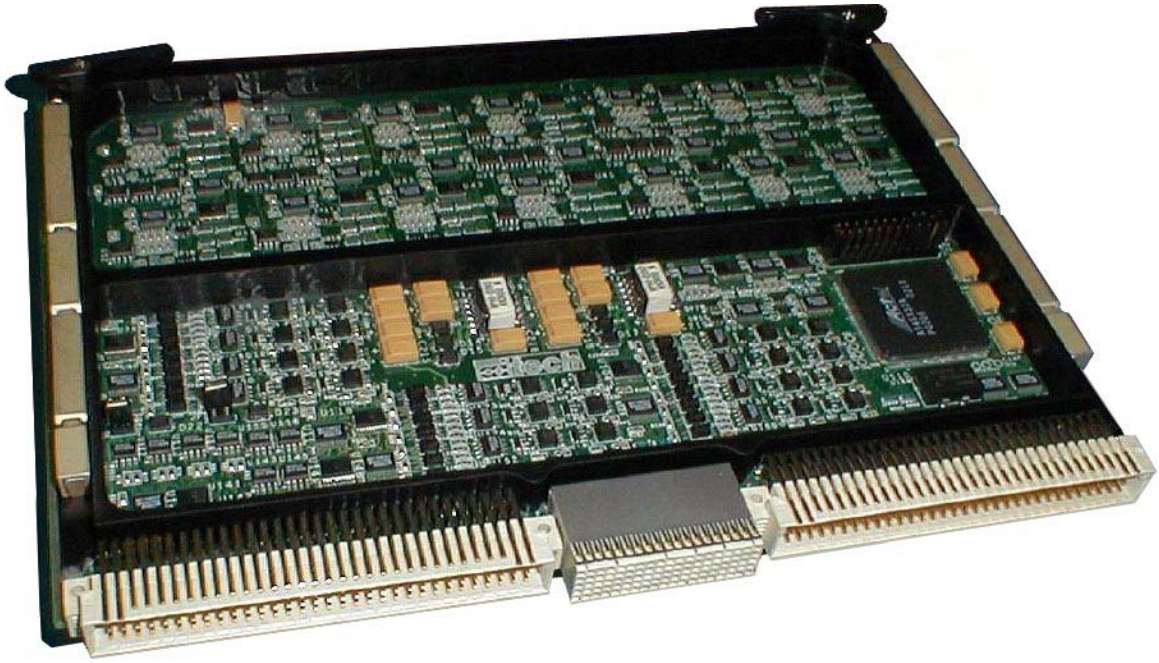
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Find the *Aitech Defense Systems C430* at our website: ***Click HERE***

C430
Multi I/O Card



- ***192 Channels of Discrete Input Output Interfaces in three Groups of 64***
- ***Group A I/Os:***
  - ***Configurable as up to 32 Differential Digital Input/Output Channels or up to 64 TTL Digital Input/Output Channels***
  - ***Outputs are Enabled in Sub-Groups of 4 for Differential and 8 for TTL Channels***
  - ***Inputs are Read in Sub-Groups of 8 for Differential and 16 for TTL Channels***
  - ***Input Overvoltage Protection***
- ***Group B I/Os:***
  - ***64 TTL Digital Input/Output Channels***
  - ***Outputs are Enabled in Sub-Groups of 8***
  - ***Inputs are Read in Sub-Groups of 16***
  - ***Input Overvoltage Protection***
- ***Group C I/Os:***
  - ***8 High-side MOSFET Switches***
  - ***8 Low-side MOSFET Switches***
  - ***48 Isolated Low-side MOSFET Switches with 6 Independent Returns for each group of 8 channels***
- ***Other Features***
  - ***Conduction Cooled 6U VME***
  - ***Extensive Software BIT Routines***
  - ***VME64x Bus Slave Interface (A24/D32)***

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A member of the Ai-Rugged Group
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Overview

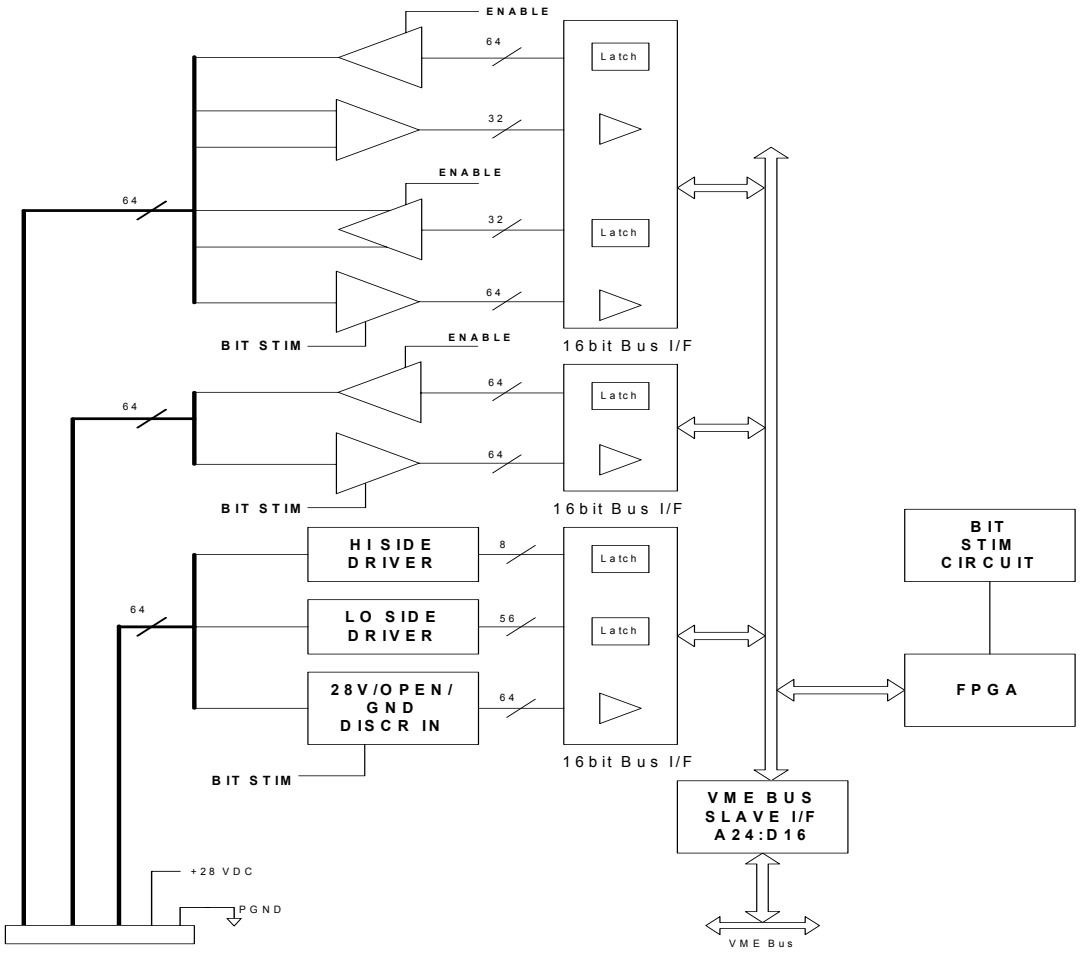
The Aitech C430 (Multi I/O 6U VME Slave board) provides up to 192 I/Os from three sets of digital I/O circuits. The first set has 32 differential I/O channels that can be configured to 64 TTL I/O channels under software control. The second set has 64 TTL channels that can be configured as input or output under software control. The third set has 8 High-side MOSFET switches, 8 Low-side MOSFET switches, and 6 sets of 8 isolated Low-side MOSFET switches with an independent return line.

The C430 provides maximum flexibility and ease of use allowing customization to specific requirements. All differential and TTL I/Os are protected against high transient voltage. The differential I/Os are RS-485 compliant and are compatible with TIA/EIA-422-B. The TTL I/Os used have high drive capability (-15mA IOH, 64mA IOL).

The C430 is compatible with VMEbus Specification. The VME interface support A24/D32 data transfers. VME Base address can be set in one of two methods:

- Using the on board jumpers
- Using geographical address pins on P2 connector

The C430 is available both in commercial and rugged configurations. The rugged board is available in both air-cooled and conduction-cooled version.



C430 Functional Block Diagram

Input/Output Capabilities

The three sets of onboard digital I/Os are configured under software control by using four 8-bit registers. The first two registers set the differential/TTL I/Os as TTL inputs, TTL outputs, differential inputs, or differential outputs. The third register sets the TTL I/Os as either TTL inputs or TTL outputs. The fourth register sets the MOSFET switches as inputs or outputs.

Writing and Reading data to these digital I/Os are performed by using nine write-only registers and nine read-only registers, respectively.

Differential Digital Input/Output Channels

The C430 contains up to 32 software configurable differential digital input/output channels. Outputs are enabled in sub-groups of four and their output states can be read back through differential inputs. Inputs are read in sub-groups of eight. The C430 provides fail-safe biasing of inputs and input over-voltage protection.

TTL Digital Input/Output Channels

The C430 is software configurable for up to 64 TTL Digital Input/Output channels. The outputs are enabled in sub-groups of eight and output state can be read back through TTL input path. Inputs are read in sub-groups of sixteen and equipped with input over-voltage protection. The TTL input path contains on card pull-up, series resistance, and low-pass filtering.

MOSFET Switches

The C430 has 8 high-side and 8 low-side MOSFET switches (relay drivers) with 150 mA source current per switch, output over-temperature and over-current protection and clamping diodes to suppress inductive load back EMF. The high-side switches use latched commands to switch external +28 VDC power to outputs and 28 V open discrete input path to monitor output state. The Low-side switches use latched commands to switch inputs to power-ground and ground / open discrete input path to monitor output state.

Additionally, the C430 has 48 isolated Low-side MOSFET switches that are divided into six subgroups comprised of 8 switches each. Each sub-group has common isolated ground return.

Logic I/O is optically isolated from switching I/O and latched commands switch inputs to isolated ground return.

The isolated Low-side switches have 150 mA sink current per switch. These switches also have output and, over-temperature and over-current protection. These switches also use clamping diodes to suppress inductive load back EMF and ground / open discrete input path to monitor output state.

BIT

A software implemented built-in self-test feature provides over 95% testing of all components and able to isolate failure down to a group of 2 or 3 components.

VMEbus Interface

The C430 is a VME64x Slave board. The VME base address of the board is set to the setting of the on board jumpers when they are jumped. If these “on board” jumpers are not used, the board automatically uses the setting of the geographical address setting of the VMEbus as the VME base address. The I/Os connections are through P2 and P0 User-defined pins.

Software

The C430 card is delivered with a complete set of VxWorks® drivers and BIT. These should be integrated into the carrier (host) VxWorks® platform.

Mechanical Features

The C430 is available in two mechanical formats:

- Air-cooled per ANSI/VITA 1-1994
- Conduction cooled per IEEE 1101.2

Both mechanical formats are single-slot 6U modules.

Custom metal frame provides excellent rigidity and shock resistance. In addition, a custom metal frame provides an array of stiffeners to support rugged PMC boards.

Dimensions

- Air-cooled: per ANSI/VITA 1-1994
- Conduction cooled: per IEEE 1101.2

Thermal Management

A careful mechanical design including custom heatsink modules combined with a metal frame allow optimal heat dissipation and relief of the board.

Power Requirements

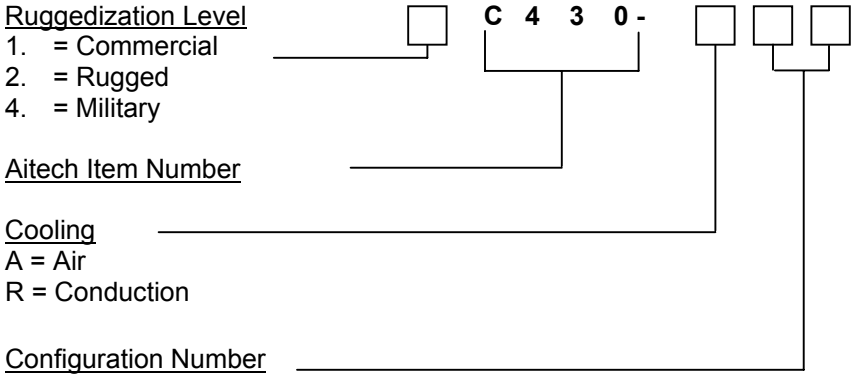
Total power consumption of the C430 depends on its configuration and assembly options.

Fully featured and configured to take all its supply from the +5.0V power supply, the C430 power consumption is as follows:

+5 V (±5%) 0.5 A (typ) 1.0 A (max) (full load)
+12 V is not used
-12 V is not used

Environmental Features

Please Refer to the Aitech Ruggedization Datasheet.



Ruggedization Level
1. = Commercial
2. = Rugged
4. = Military

Aitech Item Number

Cooling
A = Air
R = Conduction

Configuration Number
To be assigned by Aitech

Example: 4C430-A02

For more information about the C430 or any Aitech product, please contact Aitech Defense Systems sales department at (888) Aitech-8 (248-3248).

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