



CR3

3U CompactPCI® Conduction-cooled Single Board Computer

Features

- Intel® Ultra Low Voltage (ULV) Celeron® processor
- Conduction-cooled
- System controller or peripheral card operation.
- 128 MB SDRAM
- 512 KB boot flash
- Dual CompactFlash storage on a mezzanine card
- Real-Time clock
- Dual-port 10/100Base-TX Ethernet
- Dual RS-422 serial ports
- Dual USB ports
- IEEE 1284 parallel port
- Watchdog timer
- Temperature monitoring capability

The CR3 is a CompactPCI Single Board Computer (SBC) driven by an Intel Ultra Low Voltage (ULV) Celeron processor in a conduction-cooled 3U form factor. The CR3 is designed for embedded processing applications using CompactPCI-based 32-bit* architecture. The CR3 is built for harsh and demanding operating environments with an extended operation temperature range of -40° to +85°C and extended shock and vibration tolerances as well.

The CR3 is equipped with 128 MB of SDRAM and 512 KB of boot flash. For increased flexibility, the CR3 includes two RS-422 serial ports, two fast Ethernet ports, a parallel port, a PS/2 keyboard/mouse port, and an optional dual CompactFlash® storage disk mounted on a daughter card.

The Intel ULV Celeron processor, based on the same processor core as the Pentium® III, is optimized for high performance with low power consumption which makes the CR3 ideal for power-critical applications. The ULV Celeron processor core uses only +1.1V when operating at 650 MHz or 0.95V at 400 MHz.

For flexibility of system design, the CR3 can be integrated as a system controller or processing peripheral card through the dual-mode functionality of the PCI 6254 PCI/PCI Bridge chip.

* The CR3 does not support 64-bit backplane.

Specifications

Processor - ULV Celeron

- Ultra low voltage 1.10V @ 650 MHz, 0.95V @ 400 MHz
- Same core as Intel Pentium III processor
- 16 KB L1 data and instruction caches
- 256 KB shared L2 cache

Chipset - 82443MX100 PC1set

- 100 MHz, 64-bit system bus
- SDRAM controller with 64-bit 100 MHz memory interface
- Interrupt controller
- 32-bit 33MHz PCI bus interface
- UltraDMA/33 ATA controller
- DMA controller
- Three internal timers
- Real-Time Clock for date and time keeping, 128-byte SRAM
- Two USB serial ports
- General purpose I/O
- XBus interface
- SMBus serial link port

Memory - PC100

- 128 MB SDRAM
- 64-bit 100 MHz memory bus
- Rugged design with soldered chips

Flash - Am29LV040B

- 512 KB
- Hardware selected write protection

CompactFlash® Flash Disk

- Non-volatile CompactFlash storage card assembly attached to IDE bus
- Daughter card attached to J4 IDE connector
- Daughter card accommodates two CompactFlash cards

Super I/O - FDC37B727

- 8-bit interface
- Two NS16C550A-compatible UART serial ports at rear I/O (independent on-board RS-422 receivers and drivers provided)
- Parallel port



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- PS/2 keyboard and mouse port at rear I/O
- Watchdog timer
- General purpose I/O

PCI/PCI Bridge - 6254 PCI/PCI Bridge

- Dual mode operation for system controller and peripheral card functionality

Ethernet - 82546EB

- IEEE 802.3 Ethernet 100Base-TX, and 10Base-T operation
- Dual channel at rear I/O
- Full-duplex operation
- Two independent MAC and PHY functions with common PCI host interface

Temperature Sensor - MAX6658

- On-board temperature monitoring and processor temperature monitoring

JTAG Scan Chain

- ULV Celeron (tested separately)
- 82546EB Ethernet controller
- PCI 6254 PCI/PCI Bridge
- XC95144XL CPLD

Power Requirements

- +5V, +3.3V Required

Power Consumption - Typical Current

- 15W typical (20W max.)*
- * Power values are preliminary estimates

Temperature

- Highest reachable operating temperature depends on ambient conditions.

	Operating	Storage
Extended	-40°C to +85°C	-55°C to +105°C

Humidity

- Operating: 5 - 95% @ 40°C
- Storage: 5 - 95% @ 40°C

Altitude

- Operating: 15,000 ft. (4.5 km)
- Storage: 40,000 ft. (12 km)

Shock

- N-Style 100g peak/6 ms 40g peak/11 ms

Vibration

- N-Style 14g rms/-5-2000 Hz

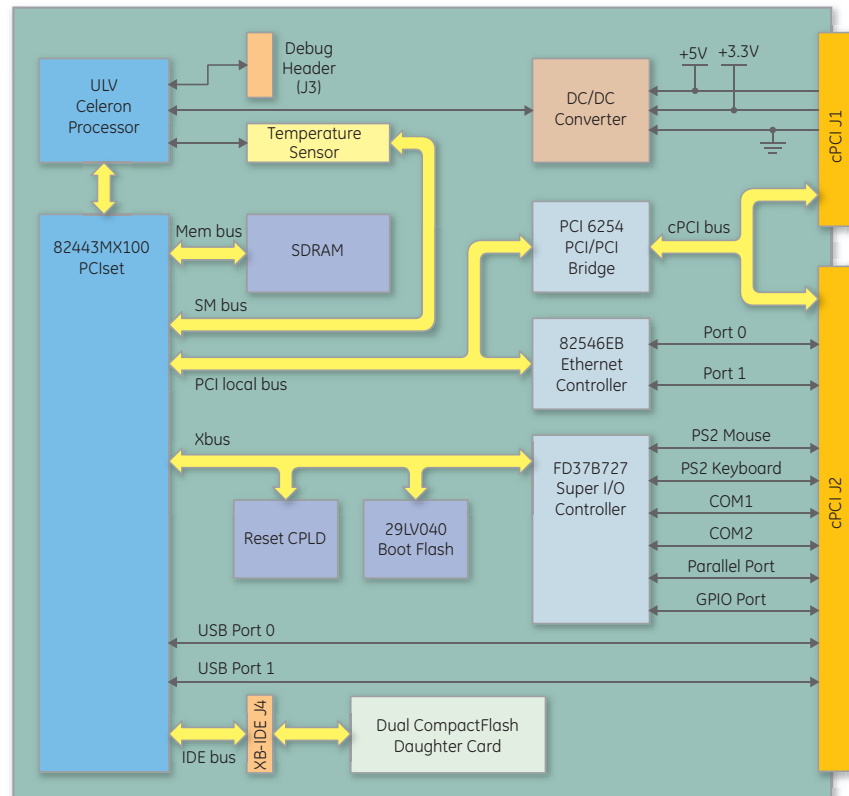
MTBF

- Calculations TBD in accordance with MIL-HDBK-217, please contact the factory

Safety

- All PWBs are manufactured with flammability rating of 94V-0 by UL recognized manufacturer

Block Diagram



Ordering Information

CR30012N

Accessories

TM-CR3 I/O Transition Module

Operating Systems

GE Fanuc Embedded Systems supports various operating systems. Please contact us for current offerings

About GE Fanuc Embedded Systems

GE Fanuc Embedded Systems is a leading global provider of embedded computing solutions for a wide range of industries and applications. Our comprehensive product offering includes many types of I/O, single board computers, high performance signal processors, fully integrated, rugged systems including flat panel displays, plus high speed networking and communications products. The company is headquartered in the U.S. and has design, manufacturing and support offices throughout the world. Whether you're looking for one of our standard products or a fully custom solution, GE Fanuc Embedded Systems has the breadth, experience and 24/7 support to deliver what you need. For more information, visit www.gefanucembedded.com.

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Additional Resources

For more information, please visit the GE Fanuc Embedded Systems web site at:

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