

V7865

Intel® Core™ Duo Processor VME Single Board Computer

Features

- Intel Core Duo processor up to 2.0 GHz
- Up to 3 GB DDR2 SDRAM
- RoHS Compliant
- Up to 2 GB bootable CompactFlash
- 667 MHz system and memory bus
- ANSI/VITA 1.5-2003 (2ESST, up to 320 MB/s)
- Optional VITA 41.3 (1000 Mb/s IEEE 802.3)
- Two RS232/422 serial ports
- Single PCI-X PMC site
- Four USB 2.0 ports
- Available for three environments:
 - Commercial
 - Extended temperature
 - Rugged extended temperature
- Multiple operating systems supported

The V7865 is GE Fanuc Embedded Systems' flagship Core Duo VMEbus single board computer offering processor and I/O flexibility to meet many different application needs. The V7865 is available in commercial up to rugged extended temperature models, making it ideal for applications including advanced defense, aerospace, and homeland security.

Based on the Intel Core Duo processor, this board offers processor speeds at 1.6 GHz or 2.0 GHz and features 2 MB of L2 cache with Advanced Transfer Cache Architecture, while delivering optimized power efficient computing with low power consumption. Memory options include up to 3 GB DDR2 SDRAM (1 GB on-board), and up to 2 GB CompactFlash.

The V7865 meets the ANSI/VITA 1.5-2003 standard, based on the Tundra Tsi148. The VMEbus can run at a bandwidth of up to 320 MB/s along the full length of a 21-slot backplane. Performance is increased in the following ways:

- 8x faster than the 40 MB/s transfer rate of VME64
- 3x faster than a multi-domain, 64-bit/66 MHz CompactPCI® bus
- Broadcast Mode support for sending data to multiple cards at one time

The V7865 features multiple I/O options, including two Gigabit Ethernet ports, two RS232/422 ports, four USB 2.0 ports, and one serial ATA interface.

Specifications

Processor

- Intel Core Duo processor with core processor speeds of 1.6 GHz or 2.0 GHz
- High performance with low power consumption
- 2 MB of advanced L2 cache
- 667 MHz system bus

SDRAM

- Maximum memory configuration of 3 GB of DDR2 SDRAM
- 1 GB of on-board memory
- 2 GB of SODIMM (one 200-pin SODIMM DDR2 module)
- The rugged extended temperature option is only available with either 512 MB or 1 GB on-board memory

Compact Flash

- CompactFlash up to 2 GB
- CompactFlash may be configured as the boot device through the BIOS boot device set-up

BIOS

- The V7865 System BIOS and Video BIOS are provided in reprogrammable memory.

Gigabit Ethernet

- VITA 41.3 (dual 1000 Mb/s)
- Dual Gigabit Ethernet routed to front panel RJ45 connectors
- Ethernet controller is Intel 82571

USB Ports

- Four USB 2.0 ports: two to rear I/O via P2, and two to front panel
- Supported USB features include: isochronous data transfers, asynchronous messaging, self-identification and configuration of peripherals, and dynamic (hot) attachment

VMEbus Backplane Interface

- The Tundra Tsi148 enables ANSI/VITA 1.5-2003 (2eSST) protocol providing 320 MB/s along the full length of a 21-slot backplane. Performance is increased in the following ways:
 - 8x faster than the 40 MB/s transfer rate of VME64
 - 3x faster than a multi-domain, 64-bit/66 MHz CompactPCI bus
 - Broadcast Mode support for sending data to multiple cards at one time
- Optional VITA 41.3



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Serial Ports

- Two 16550 compatible serial ports via DB-9 connectors: one to rear via P2, and one to front panel
- Ports feature independent 16-byte FIFO supporting baud rates up to 115 Kbaud

Serial ATA

- One serial ATA interface via the VMEbus backplane connector P2

PMC Extension Slot

- One 133 MHz PCI-X PMC site

Programmable Timers

- Two 16-bit timers and two 32-bit timers
- Mapped in PCI memory space
- Completely software programmable and can generate PCI bus interrupts

Watchdog Timer

- Programmable intervals
- Interrupt and board reset triggers

Input/Output Chart

I/O	V7865 Front Panel	ACC0603-TM
Serial ports	1	1
USB 2.0	1	2
Gigabit ethernet	2	
SVGA	1	
DVI-I		1
Mouse/keyboard	1	

Dimensions

- 6U (4HP) single slot Eurocard form factor
- Height: 9.2 in. (233.4mm)
- Depth: 6.3 in. (160mm)
- Thickness: 0.8 in. (20.3mm)

Power Requirements

- +5 VDC (±5 percent), TBD (typical), TBD maximum
- +12 VDC (±5 percent), 0 mA
- -12 VDC (±5 percent), 0 mA

Airflow

- Forced air cooling required
- 400 LFM minimum, measured at the top (outlet) of the unit

Temperature

- Commercial: 0° to 55° C
- Extended temperature: -40° to 70° C
- Rugged extended temperature: -40° to 70° C (Vita 47 Class EAC6)

Humidity

- Operating: relative humidity 5% to 95%, noncondensing
- Storage: relative humidity 5% to 95%, noncondensing

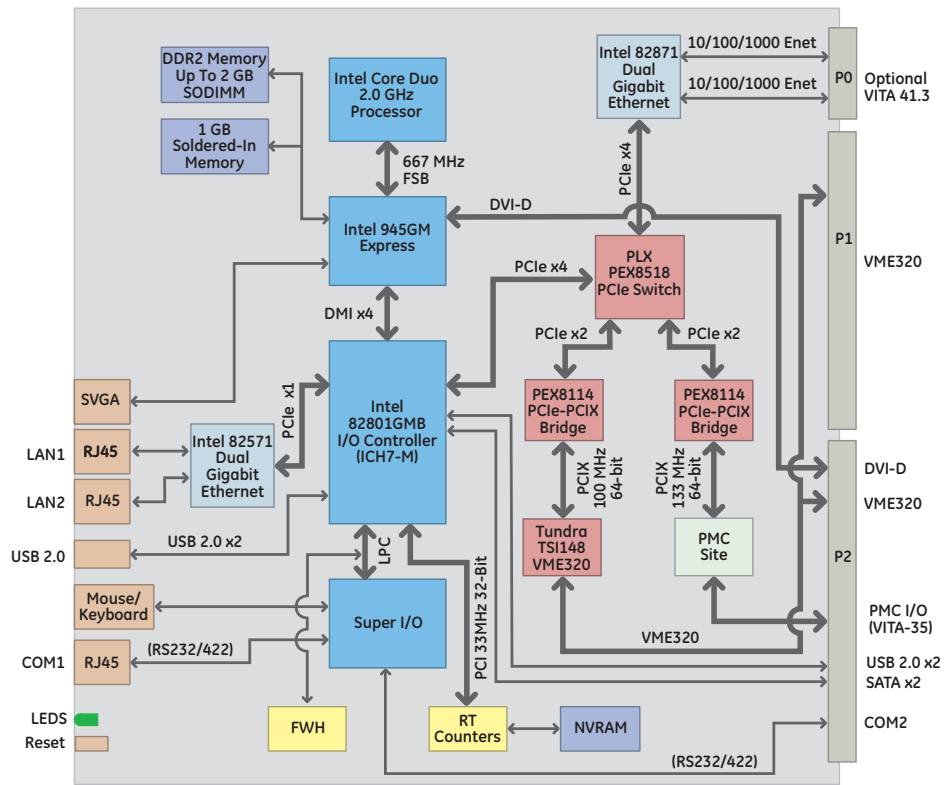
Shock

- 20 g shock (Rugged Extended Temperature)

Vibration (Rugged Extended Temperature)

- 5 Hz to 100 Hz PSD increasing at 3 dB/octave
- 100 Hz to 1000 Hz PSD = 0.04 g²/Hz
- 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave

Block Diagram



Ordering Options

V7865-210021

2 GHz processor, 1GB DDR2 SDRAM, commercial temp.

V7865-210026

2 GHz processor, 1GB DDR2 SDRAM, rugged extended temp.

Hardware Accessories

ACC-0602 - 3U rear transition board
ACC-0603 - 6U rear transition board

Operating Systems

GE Fanuc Embedded Systems supports various operating systems. Please contact us for current offerings. For detailed information and further options, contact GE Fanuc Embedded Systems.

GE Fanuc Embedded Systems Information Centers

Americas:
1 800 322 3616 or 1 256 880 0444

Asia Pacific:
86 10 6561 1561

Europe, Middle East and Africa:
+49 821 5034-0

Additional Resources

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

www.gefanucembedded.com

