ECM401

P4 / Celeron Embedded Computer Module

-40°C to +85°C Operating Temp.

COMPUTER MODULE CELERON / PENTIUM 4 - 1.8GHz to 2.8GHz

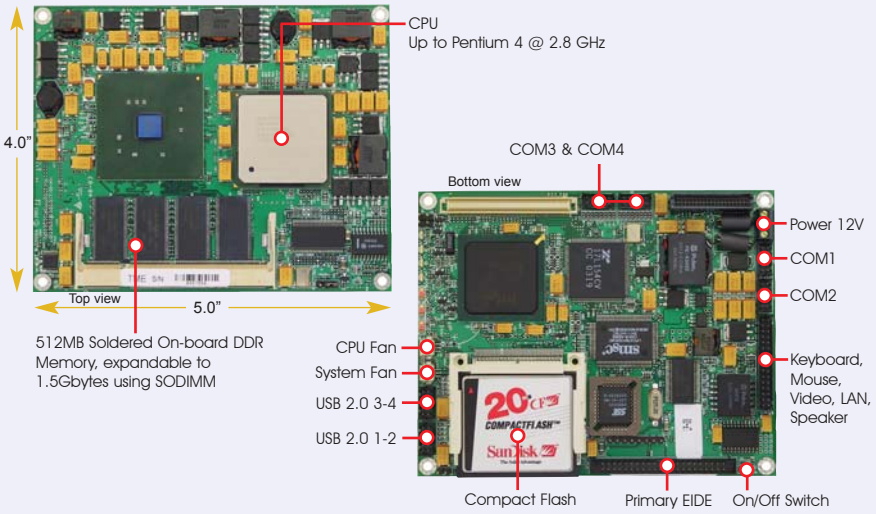
(4)RS232 | LAN | USB 2.0

Features

- Soldered onboard Pentium 4 / Celeron D CPU, 1.8Ghz to 2.8Ghz
- Soldered on-board 512MB DDR Memory, expandable to 1.5Gbytes DDR Memory using SODIMM socket
- 10/100Base-T Ethernet Interface
- PCI BUS expansion connector
- 4 serial ports, 4 USB 2.0 ports, 256 Bytes EEPROM, 64-bit unique electronic ID, Integrated Audio
- Intelligent thermal management with independent microcontroller
- Operated from +12V DC-IN
- Less than 4 second boot up time
- Over 200,000 hours MTBF
- 5 year product availability guarantee
- Supports DOS, Windows 98, NT, 2000, XP, CE, QNX, pSOS, Linux, VxWorks

Applications

- Robotic
- Medical
- Test & Measurement
- Transportation
- Avionics
- Mil/Aerospace
- e-Kiosks
- Industrial Automation
- Inventory Management
- Point Of Sale Terminal



Technical Data

System

CPU	Pentium 4 CPU processor up to 2.8Ghz with 512 KB L2 cache, optional low cost 2.8Ghz Celeron CPU W/256K L2
SYSTEM MEMORY	256Mbytes ~ 1.5Gbytes DDR Memory,
CHIPSET	Intel 845GV CHIPSET
BIOS	Customized emdedded BIOS on 256KB flash memory
FLASH DISK	Supports CompactFlash™ card Type II up to 6Gbytes
WATCHDOG TIMER	Software enable/disable/programmable up to 120 sec.
BUS EXPANSION	PCI BUS on High density connector

I/O

Main I/O	EIDE (Ultra DMA33/66/100), K/B & Mouse, 4 x RS-232 (optional RS485)
USB	4 USB 2.0 ports
AUDIO	AC'97 2.1 compliant with adaptor board
ETHERNET	10/100BASE-T
DIGITAL I/O	4-bit input / 4-bit output

Display

CHIPSET	Integrated 2D/3D w/ Mpeg 2 / AC-3
MEMORY SIZE	8/16/32MB UMA Frame Buffer using system memory
RESOLUTION	Support up to 2048 x 1536 @ 60Hz
LCD INTERFACE	With adaptor option

Mechanical and Environmental

POWER CONSUMPTION (W/256MBYTES)	Typical: 12 V @ 2.8A [1.8Ghz Celeron CPU] 12V @ 6.0 A [2.8Ghz P4 CPU]
DIMENSION (L X W)	4" x 5" form factor
OPERATING TEMPERATURE	-40°C ~ 85°C (on selected models)
OPERATING HUMIDITY	0% ~ 90% relative humidity, non-condensing

Description

ECM401 is designed to meet the current and future demands of high performance, low power, small form factor and secure embedded computing solutions. The ECM401 can significantly simplify the design of the embedded computer system for fast time to market and lower development cost and risk. The ECM401 utilizes embedded components to ensure the long term product support for over 5 years. Optional non-tantalum capacitor version available upon request.

The Shortest path from ideas...to product.

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Embedded Computer Module

ECM401

Features Description

CPU	ECM401 supports ultra low power Intel Pentium 4 class processor and Celeron D procesor (90nm technology) up to 2.8Ghz with 400/533Mhz FSB L2 Cache - 512K L2 cache on P4, 256K L2 cache on Celeron D processor P4 CPU speed available - 2.8Ghz, 2.6Ghz, 2.1Ghz and 1.8Ghz. Celeron D CPU speed available - 2.4Ghz, 2.1Ghz, 1.8Ghz Passive heatsink for 1.8Ghz (with 100LFM air flow)
Chipset	Intel 845GV Embedded CHIPSET with 400/533Mhz FSB
Intelligent Thermal management	On-board independent microcontroller is used to monitor CPU and System temperatures and can adjust CPU and System fan speeds based on parameters set by user in order to maximize service life of board. CPU speed can also be adjusted to maintain CPU temperature within the it's limits. All above parameters can be set by using CMOS setup. These features are very useful especially in the event of a CPU fan or System fan failure
BIOS **(4 second bootup time)**	BIOS designed for embedded applications with 4 second boot up time, CMOS setup is stored on eeprom to prevent system failure due to battery loss. The Embedded BIOS can be customized with customer's features
Video	Integrated Graphics Display with 3D set up and Render Engine DVD Multimedia Accelerator, MPEG2, AC-3 CRT mode up to 2048 X 1536 @ 60Hz 3D Graphics Rasterization with 200Megapixel/sec Fill rate Integrated 350Mhz RAMDAC Optional Second Video Interface (LCD/LVDS/CRT) available on adaptor
Memory	Soldered onboard 256Mbyte/512Mbytes DDR memory Expandable to 1.5Gbytes DDR Memory with SODIMM
Audio	Integrated AC'97 2.1, Mic in, Line in, CD Audio in, Line out,(On optional adaptor)
Storage	Integrated PCI-bus Enhanced Ultra DMA/33/66/100 Synchronous IDE interface Supports up to 2 EIDE devices Compact Flash socket Type II for on-board flash disk up to 6Gbytes
COM1 - COM4	RS-232, 16C550 compatible, 115K baud max, (Optional RS485 on COM1 and COM2)
LAN	10/100 Base-T using Intel Fast Ethernet controller
USB	Four USB 2.0 ports
BUS Expansion	PCI BUS available on high density connector for additional features
Other Embedded Features	Electronic ID Digital I/O (8/8) Voltage monitoring reset circuit System Management Bus (SMBus) Power management logic support Programmable Watch Dog Timer 2s to 120s Intelligent thermal management with independent micro-controller CMOS setup data stored on Serial EEPROM to support batteryless boot capability 128 Bytes EEPROM available for OEM use ESD protection on serial ports: 15,000V MTBF 200,000 Hours

Ordering Information

ECM40-18C	ULTRA LOW POWER 1.8GHZ INTEL CELERON CPU, 256KB L2 CACHE, 0°C TO 65°C OPERATING TEMPERATURE, 2.8A @ +12V
ECM40-21C	LOW POWER 2.1GHZ INTEL CELERON CPU, 90NM TECHNOLOGY, 256KB L2 CACHE, 400MHZ FSB, 0°C TO 65°C OPERATING TEMPERATURE, 3.1A @ +12V
ECM40-26P	LOW POWER 2.6GHZ INTEL P4 CPU, 512KB L2 CACHE, 400MHZ FSB, 0°C TO 65°C OPERATING TEMPERATURE, 5.5A @ +12V
ECM40-28P	2.6GHZ INTEL P4 CPU, 512KB L2 CACHE, 400MHZ FSB, 0°C TO 65°C OPERATING TEMPERATURE, 6.5A @ +12V
ECM40-21P	LOW POWER 2.1GHZ INTEL P4 CPU, 512KB L2 CACHE, 400MHZ FSB, -40°C TO 75°C OPERATING TEMPERATURE, 2.8A @ +12V
ECM40-18C	ULTRA LOW POWER 1.8GHZ INTEL CELERON CPU, 256KB L2 CACHE, 90NM TECHNOLOGY, -40°C TO 85°C OPERATING TEMPERATURE, 2.6A @ +12V

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