



PROCELERANT CE945GM

Core™ 2 Duo Pentium-M COM Express Module

FEATURE SUMMARY

- 1.5GHz Intel® Core™ 2 Duo L7400
- 2.0GHz Core Duo T2500
- 1.66GHz LV Core Duo L2400
- 1.2GHz ULV Core Solo U2500
- 1.07GHz ULV 423 Celeron M
- 1.86GHz 440 Celeron M
- Intel® GMCH 945GM Chipset
- Intel ICH7M Digital Home
- PICMG COM Express Compliant
- Basic Form Factor (95 x 125mm)
- Type II COM Express Pin-out
- Two SODIMM Sockets for up to 4GB Memory, enables dual channel memory
- Broadcom BCM5789 1000BaseT Ethernet controller
- Flexible PCI-Express Options
 - 1*PCI-Express x16
 - 5*PCI-Express x1 (or) 1*PCI-Express x4 and 1*PCI-Express x1
- COM Express Standard Features
 - 8 USB Ports
 - 2 SATA Ports
 - 1 ATA 100 Port
- Phoenix BIOS with ACPI 3.0 Power Management
- Win XP/ Win XP Embedded / Red Hat Desktop Linux, OS-9
- Optimized Passive and Active Heatsinks
- ROHS Compliant Module

PRODUCT DESCRIPTION

Based on the open PICMG standard, the RadiSys Procelerant CE945GM COM Express basic size (95mm x 125mm) modules combine Intel® Core™2 Duo Pentium M and single core Celeron M performance with dual channel memory that's vital for today's embedded applications. Paired with a RadiSys Procelerant carrier board, RadiSys COM Express modules provide a ready-to-use development platform

PICMG STANDARD

COM Express is the PICMG standard for a Computer-On-Module (COM) based on high speed serial differential signaling technologies such as PCI Express, Serial ATA, USB 2.0, LVDS, and Serial DVO while retaining legacy PCI bus support to ease migration from existing modular designs. COM Express enables OEMs to reduce time to market by reducing the time spent on processor design and enabling focus on core competencies and product differentiation. Planned feature changes, demand fluctuations and performance upgrades can be handled without product re-designs. COM Express modules can reduce service repair inventories, and simplify upgrades, contributing to the success of the product over its lifetime.

APPLICATIONS

Core 2 Duo processing power combined with dual channel memory on a basic (95 x 125mm) size module brings unprecedented processing power to the mighty but small CE945GM computer-on-module. Dual channel memory via 2 SODIMM sockets provides up to 67% performance increase over single channel memory solutions, making the CE945GM an ideal choice for processing intensive applications such as medical and machine imaging. OEMs can build imaging systems with performance levels that span years into the future by using one or more CE945GMs on their carrier and planning modular hardware and software upgrades in the future.

CARRIER DESIGNS SUPPORTED BY RADISYS

OEMs can depend on RadiSys to support their design at every stage, whether designing their own carrier board or utilizing RadiSys Design Services. Design tools such as the Carrier Design Guide, Thermal Design Guide, as well as schematics and Gerber files are available for customers committed to using RadiSys Procelerant CE processor modules. Ask your RadiSys Sales Manager for more information.

Procelerant CE945GM Specifications

| | | |
|-------------|--------------------------|---|
| Physical | Dimensions | 95mm x 125mm – COM Express Basic Form Factor |
| | Compliance | PICMG COM Express R1.0 Basic Form Factor, Type 2 |
| Processor | Options | Intel Core 2 Duo Pentium-M L7400, Intel Core Duo Pentium-M T2500 or Pentium-M L2400, Intel Core Solo U2500 and Celeron-M 423, Celeron-M 440 Single Core Celeron-M 423 |
| | Clock Speed/ FSB / Cache | Core2 Duo Pentium-M L7400: 1.5GHz / 667MHz FSB / 4MB Core Duo Pentium-M T2500: 2Ghz / 667MHz FSB / 2MB Core Duo LV Pentium-M L2400: 1.66GHz / 667MHz FSB / 2MB Core Solo ULV Pentium-M U2500: 1.2GHz / 533MHz FSB / 2MB Single Core Celeron-M 423/440: 1.07GHz / 533MHz FSB / 1MB |
| | Package | BGA |
| | Power | T2500-31W, L2400 -15W, U2500-9W, 423-5.5W. 440 -27W (Running 3D Mark) |
| | Chipset | Supplier |
| Memory | Features | Integrated video, PCI, IDE, PCI-Express, SATA, USB, LPC, GPIO |
| | Type | Single and Dual 200-pin SODIMM sockets, supports, 533, and 667MHz Memory |
| BIOS | Capacity | Up to 2GB DDR2 per channel (Subject to market availability) |
| | Type | 1MB, Phoenix Technologies |
| Audio | Compliance | AC'97 or Intel High Definition Audio via ICH7M Digital Home |
| Video | Features | Dual SDVO, LVDS 18-bit dual channel, Analog VGA, TV Out |
| | External | PCI-Express x16 Graphics Port, Multi-plexed on SDVO interface pins |
| Networking | Supplier/Type | Broadcom BMC5789, IEEE 802.3 10/100/1000BaseT - Utilizes (1) PCI-Express x1 interface |
| I/O | USB | Eight USB 2.0 / 1.1 Ports |
| | SATA | Two SATA 150 Ports, Supports Raid 0 and Raid 1 |
| | IDE | One Ultra ATA 100/66/33 Ports |
| | OTHER | LPC, Smbus/I2C Bus, |
| Super I/O | BIOS Support | National Semiconductor PC8374 |
| Expansion | PCI Express | 5*PCI-Express x1 – or 1*PCI-Express x4 plus 1* x1, and 1*PCI-Express x16 |
| | PCI | PCI 2.3 32-bit 33MHz, four logical devices |
| Connectors | COM Express | (2) 220 pin COM Express standard connectors |
| Power | Input | 12V |
| | Dissipation | TBD |
| Environment | Temperature | 0° – 60°C (operating), -40° – 85°C (non-operating) |
| | Humidity | 5%-95% Condensing (Operating), 5% - 90% RH Non-Condensing at 40C |
| | Shock | Operating: 30G, half sine 11ms duration, Storage: 50G, half sine 11ms duration 30G |
| | Vibration | 5-2000Hz Random, 0.5g, 10min min. in each of 3 axes (Operating), 5g acceleration over 5-2000Hz Sine Wave (P-P), 1 oct/min Sine Sweep (Storage) |
| Regulatory | Safety | UL60950-1, EN60950-1, IEC60950-1 |
| | EMC | EN55022, EN55024, and FCC Part 15, Subpart B, Class B |
| Warranty | Standard | Two years, parts only |

Ordering Information

Toll-Free: 800-950-0044

Phone: 503-615-1100

Support: 866-385-6167

Call for pricing and availability. Refer to the order codes below.

DESCRIPTION:

Module Order Codes:

CE945GM2A-L74-0: 1.5GHz Core 2 Duo LV L7400

CE945GM2A-T25-0: 2GHz Core Duo T2500

CE945GM2A-L24-0 1.66GHz Core Duo LV L2400

CE945GM2A-U25-0 1.2GHz Core Solo ULV U2500

CE945GM2A-423-0 1.07MHz Celeron-M

CE945GM2A-440-0 1.86MHz Celeron-M

Supporting Products:

CR100-2DVI-ATX Carrier with Dual DVI

CR100-PCI16 - ATX Carrier with PCI Express x16

CE945GM2-HSP: Heatspreader

CE945GM2-PHS: Passive heat sink

CE945GM2-AHS12: 12mm active heatsink assembly

CE945GM2-AHS20: 20mm active heatsink assembly

CE-TIM: Thermal Interface Material

CE-DVI-VGA: DVI to VGA Cable



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