



## PROCELERANT CE945GM

### Core™ Duo Pentium-M COM Express Module

#### FEATURE SUMMARY

- Intel® Core™2 Duo 2GHz, Core Duo 2GHz, Core Duo 1.66GHz Pentium M and single Core Celeron M 1.07GHz CPU
- Intel® GMCH 945GM Chipset
- Intel ICH7M Digital Home
- PICMG COM Express Compliant
- Basic Form Factor (95 x 125mm)
- Type 2 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 key features 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 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 Core2 Duo Pentium-M L7400, Core Duo Pentium-M T2500, or Pentium-M L2400 Single Core Celeron-M 423
	Clock Speed/ FSB /	Intel Core2 Duo Pentium-M L7400: 1.5GHz / 667MHz FSB / 4MB
	Cache	Intel Core Duo Pentium-M T2500: 2Ghz / 667MHz FSB / 2MB
		Intel Core Duo Pentium-M L2400: 1.66GHz / 667MHz FSB / 2MB
		Single Core Celeron-M 423: 1.07GHz / 533MHz FSB / 1MB
	Package	BGA
	Power	T2500 - 31W , L2400 -15W , 423 - 5.5W (Running 3D Mark)
Chipset	Supplier	Intel 945GM and ICH7M Digital Home Controller Hub
	Features	Integrated video, PCI, IDE, PCI-Express, SATA, USB, LPC, GPIO
Memory	Type	Single and Dual 200-pin SODIMM sockets, supports, 533, and 667MHz Memory
	Capacity	Up to 2GB DDR2 per channel (Subject to market availability)
BIOS	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:

CE945GM2-L74-0: 1.5GHz Core 2 Duo Pentium-M, 2 SODIMM sockets

CE945GM2-T25-0: 2GHz Core Duo Pentium-M, 2 SODIMM sockets

CE945GM2-L24-0 1.66GHz Core Duo Pentium-M, 2 SODIMM sockets

CE945GM-423 1.07MHz Celeron-M, Single SODIMM socket

### Supporting Products:

CR100-2DVI: ATX Carrier Board with Dual DVI Connectors

CR100-PCIE16: ATX Carrier Board with 16-bit PCI-Express

CE945GM2-AHS12: 12mm Active heatsink assembly for dual channel memory CE945GM2 modules

CE945GM2-AHS20: 20mm Active heatsink assembly for dual channel memory CE945GM2 modules

CE-PHSA: Passive heatsink & assembly for single channel CE945GM-423

CE-AHSA: Active heatsink & assembly for single channel

CE945GM-423& Assembly

CE-TIM: Thermal Interface Material, Required for Heatsink Assembly

CE-DVI-VGA: DVI to VGA Cable



## Contact Information

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