


# PEAK 870GC

Intel® Core™ 2 Duo LGA775 with 1 x PCI Express Gigabit LAN/ 4 x SATA/ 8 x USB 2.0



Intel® LGA775 Core™ 2 Duo / Pentium® 4 / Pentium® D / Celeron® D processors with 533/800

DDR2, Max 2 GB

2 x SATA

4 x USB 2.0

COM2 COM1

FDD

Intel® 945GC GMCH

Intel® ICH7R

PIO

IDE

VGA

GbE LAN

KB/MS

4 x PCI 32-bit/33

4 x USB 2.0  
2 x SATA

PCIex16

4 x PCIex1

## Main Features

- Intel® LGA775 Core™ 2 Duo / Pentium® 4 / Pentium® D / Celeron® D Processors with 533/800 MHz
- Supports Dual Channel Non-ECC DDR2 533/667 MHz up to 4 GB
- 1 x 82573L PCI Express Gigabit Ethernet LAN
- 4 x SATA, 8 x USB 2.0, 2 x COM , 1 x Parallel , 1 x Floppy
- Intel® 945GC GMCH Integrated Intel® GMA 950, Max 128 MB of DVMT for Graphics Memory Allocation
- Analog Display Supports up to 2048 x 1536 at 85 Hz for CRT

## Product Overview

PEAK 870GC is the first PICMG 1.3 full-size Single Board Computer (SBC), which support Intel® Core™2 Duo technology. Featuring Intel® 945GC and ICH7R chipsets, the PEAK 870GC supports socket LGA775 of Intel® Pentium® 4/Pentium® D/Celeron® D processor with 533/800 MHz FSB supporting speeds up to 3.8 GHz and Hyper-Threading technology.

The Intel® 945GC supports dual channel non-ECC DDR2 533/667 MHz memory in two DIMM slots and an integrated graphics controller. The South Bridge ICH7R manages Ultra ATA 100 & SATA HDD ports, parallel port, and floppy port. Furthermore, it supports other versatile I/O ports such as two serial ports, eight USB ports, and one PCI Express Gigabit LAN ports.

NEXCOM offers the following 2U and 4U backplanes that support the PICMG 1.3 specification:

2U Backplane: NBP 2U220 / NBP 2U040

4U Backplane: NBP 14570 / NBP 14111 / NBP 14210

The PEAK 870GC with Intel® Core™ 2 Duo technology and PCI Express LAN offer a great solution for advanced industrial application that require superb display and processing performance.

## Specifications

### CPU Support

- Support Intel® LGA775 Core™ 2 Duo / Pentium® 4 / Pentium® D / Celeron® D processors
- Intel® Embedded Processor List ( Intel® Longevity CPU):  
Intel® Core™2 Duo Processor E4300 & E2160  
Intel® Pentium® 4 Processor 651 & 551 & 531  
Intel® Celeron® D Processor 352 & 341  
Intel® Celeron® Processor 440
- 533/800 MHz FSB support

### Main Memory

- 2 x 240-pin DIMM, for up to 4 GB dual channel Non-ECC DDR2 533/667 SDRAM
- Note: Maximum 4 GB. Actual memory size is dynamic based on the OS I/O resource allocation*

### Chipset

- Intel® 945GC +ICH7 (PEAK 870GC)

### BIOS

- Award System BIOS
- Plug & Play support
- Advanced Power Management and Advanced Configuration & Power Interface support

### On-board LAN

- 1 x Intel® 82573L PCIe Gigabit Ethernet Controllers
- Supports Boot from LAN

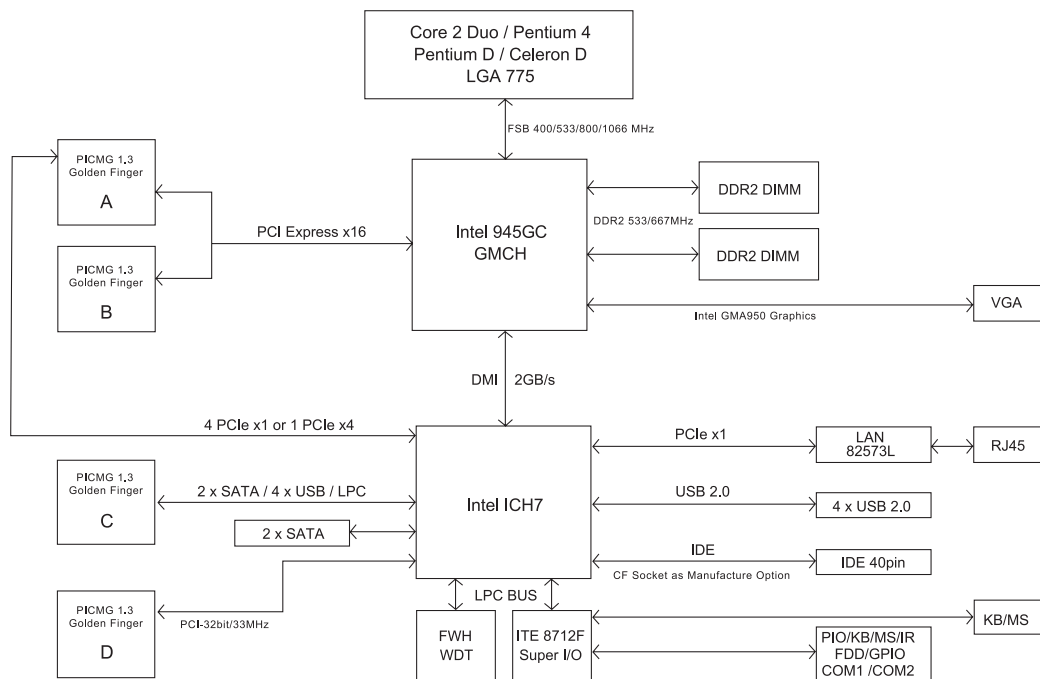
### Display

- Intel® 945G GMCH Integrated Intel® GMA 950, Max 128 MB of DVMT for graphics memory allocation
- Analog display support up to 2048 x 1536 @ 85 Hz for CRT

### Audio

- AC' 97 Audio Codec, Realtek ALC655
- 3 x (1x4 pin header) for Line in /Line out /MIC in

## Block Diagram



### I/O Interface

- USB 2.0: 8 ports (4 on board, 4 to backplane)
- Serial port: 2 port, with 2x5pin headers
- IDE: 1 x 40-pin connector. Support Ultra ATA 100/66/33
- Disk on Module: 1 x 2-pin power connector for DOM
- SATA HDD: 4 ports, Support RAID 0,1
- Parallel port: 1 x 26-pin connector
- Floppy: 1 x 34-pin connector
- GPIO: Supports 4 sets general purpose I/O each with TTL level (5 V) interface
- On-board buzzer / 2-pin power on button switch
- SMBus 2.0 to backplane
- On-board 2-pin header for reset / 4-pin for PC speaker
- 5-pin for key lock/power LED / HDD Power LED
- 1 x 4-pin fan connector (for CPU); 2 x 3-pin fan connectors (for System)
- 1 x 5-pin JST connector for chassis or backplane front Keyboard/Mouse
- I/O On SBC Bracket
  - 1 x VGA DB-15 connector
  - 2 x RJ45 Gigabit Ethernet LAN port
  - 1 x PS/2 Keyboard/Mouse

### Watchdog Timer

- 1-minute increments from 1 to 255 minutes
- 1-second increments from 1 to 255 seconds
- On-chip RTC with battery backup
- 1 x External Li-Ion battery

### System Monitor

- 8 voltages (For +1.5 V, +3.3 V, +5 V, -5 V, +12 V, -12 V, Vcore and +5 Vsb)
- 2 temperature
- 3 fan speed monitors

### Dimensions

- PICMG 1.3 SHB  
338.58 mm (L) x 126.39 mm (W) (13.3" x 4.9")

### Power Input

- Power source from backplane through golden finger
- Supports both ATX or BTX power supplies
- 4-pin +12 V power input connector

CPU: 2 x Core 2 Duo (E6700) 2.66G	+12V	+5V	+3.3V	+5Vsb
Memory: 2 x DDR2 533Mhz 1GB				
Full-Loading Mode	4.43 A	3.42 A	0.63 A	0.03 A
Light-Loading Mode	2.48 A	3.12 A	0.65 A	0.03 A

### NOTE:

1. Full Loading: Utilize CPU 100% with Burn-in test running
2. Light Loading: Utilize CPU loading below 5% without data or application running.

### Environment

- Board level operating temperature: 0°C to 60°C
- Storage temperature: -20°C to 80°C
- Relative humidity: 10% to 90% (Non-condensing)

### Certifications

- CE approval
- FCC Class A

## Ordering Information

### ♦ PEAK 870GC (P/N: 10P0870GC00X0)

PICMG 1.3 Full-Size SHB, Intel® 945GC Chipset, LGA775 Celeron®/ Pentium® 4/ Core™ 2 Duo with 533/800MHz FSB, 32bit/33MHz PCI, DDR2 DIMM x 2  
VGA integrated, Intel 82573L PCI Express Gigabit Ethernet x 1, Four Serial ATA Ports COM2 without RS422/485, without Audio