

Main Features

- Intel® LGA775 Core 2 Duo / Pentium® 4 / Pentium® D / Celeron® D processors with 533/800/1066 MHz
- Supports dual channel non-ECC DDR2 533/667 MHz up to 2 GB
- 2 x 82573L PCI Express Gigabit Ethernet LAN
- 4 x SATA, 8 x USB 2.0, 2 x COM , 1 x Parallel , 1 x Floppy

Product Overview

SB870VEE is the first PICMG 1.3 full-size Single Board Computer (SBC), which support Intel® Core™2 Duo technology. Featuring Intel® 945G and ICH7 chipsets, the SB870VEE supports socket LGA775 of Intel® Pentium® 4/Pentium® D/Celeron® D processor with 533/800/1066 MHz FSB supporting speeds up to 3.8 GHz and Hyper-Threading technology.

The Intel® 945G supports dual channel non-ECC DDR2 533/667 MHz memory up to 2 GB maximum 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 two PCI Express Gigabit LAN ports.

The SB870VEE 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 / PentiumD / Celeron D processors
- Intel Embedded Processor List (Intel Longevity CPU):
Intel Core™2 Duo Processor E6400 & E4300
Intel Pentium4 Processor 651 & 551
Intel Celeron D Processor 352 & 341
Intel Celeron Processor 440
- 533/800/1066 MHz FSB support

Main Memory

- 2 x 240-pin DIMM, for up to 2 GB dual channel Non-ECC DDR2 533/667 SDRAM

Chipset

- Intel 945G +ICH7R chipset

BIOS

- Award System BIOS

- Plug & Play support

- Advanced Power Management and Advanced Configuration & Power Interface support

On-board LAN

- 2 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

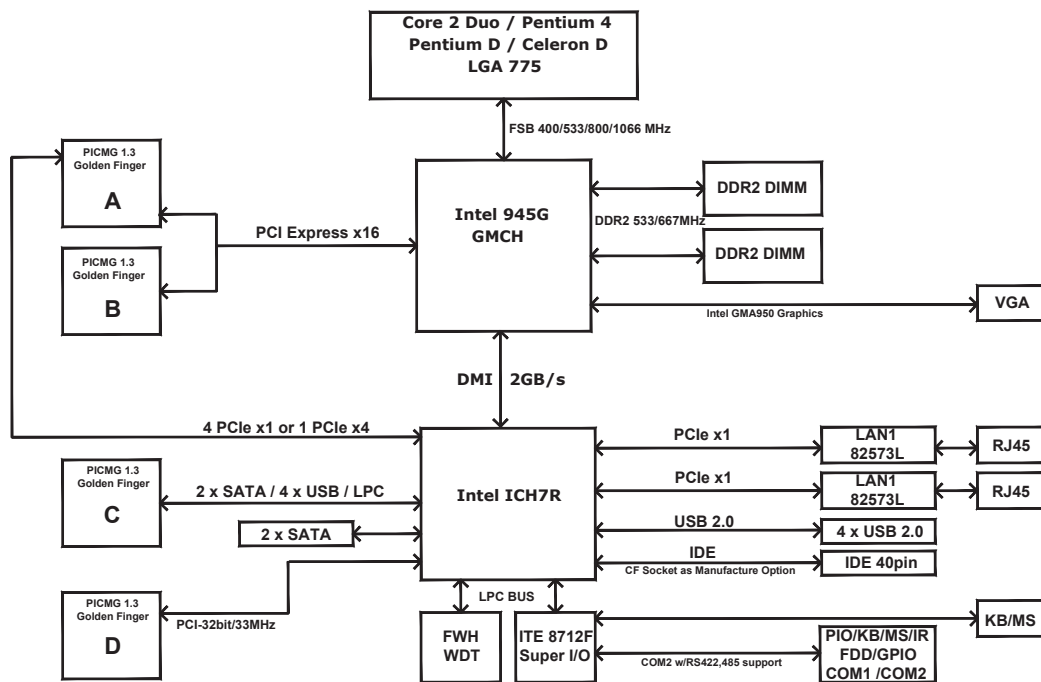
Audio

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

Watchdog Timer

- 1-minute increments from 1 to 255 minutes

Dimension Drawing



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

I/O Interface

- USB 2.0: 8 ports (4 on board, 4 to backplane), bandwidth: 480 Mb/s
- Serial port: 2 port, with 2x5pin headers (COM 2 support RS232 / RS422/RS485)
- 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 (5V) interface
- On-board buzzer / 2-pin power on button switch
- SMBus 2.0 (2-pin header) to backplane
- On-board 2-pin header for reset / 4-pin for 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

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

Power Requirements

- Maximum designed power based on Pentium 4 3.8 GHz CPU
- 5 V: 18 A
- 12 V: 20 A
- 3.3 V: 5 A
- 5 Vsb: 2 A

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

- SB870VEE RoHS Compliant
- PICMG 1.3 Full-Size SBC, Intel 945G Chipset, LGA775 Core 2 Duo CPU support
- Max. 2 GB DDR2 400 DIMM, VGA integrated, 2 x Intel 82573L PCI Express Gigabit Ethernet, 4 x SATA ports