

# ECN-381B Intel® Socket P Core 2 Duo Fanless Multimedia Box



## Features

- ◆ Intel® 45nm mobile Core™ 2 Duo fanless design
- ◆ Intel® GM45 rich media features with VGA+HDMI dual display
- ◆ 1080i/p Full HD by HDMI with HDCP support
- ◆ High quality media MPEG-2 decoding, WMV9 (VC-1), H.264 (AVC), DirectX 10
- ◆ IEI One Key Recovery solution allows you to create rapid OS backup and recovery



## GM45 Leadership Performance

### Montevina Platform – Key Features



- Penryn on 45nm process (6M, 1066FSB)
- Introduces DDR3 Support (800/1066)
- SSE4 (SIMD Software enhancements)
- Enhanced Graphics Engine (Gen 5 gfx)



- Support for High Def decode in H/W
- Integrated DisplayPort™ & HDMI/HDCP
- Additional USB & SATA ports (no PATA)
- Integrated TPM and Packet Filtering



- Smaller FormFactor Chipsets and CPUs
- Deep Power Down Technology (w/ C6 state)
- Thermal compatibility with Santa Rosa

As the latest 3-chip mobile solution, Intel® GM45 has substantial improvement on graphic and media related features over 945GME including HD display and Blu-ray support as well as MPEG-2 decoding acceleration. Its High-Definition Multimedia Interface(HDMI) enables 1080p HD digital output to large size panel, ideal for signage application.

	GM45	945GME
<b>FSB</b>	667/800/1066MHz	667MHz
<b>Memory support</b>	DDR3 800/1066MHz	DDR2 400/533/667MHz
<b>Graphic engine</b>	GMA4500MHD	GMA950
<b>Render clock</b>	533-MHz core render clock	250-MHz core render clock
<b>DP/HDMI</b>	Available, with HDCP support	N/A
<b>Multimedia features</b>	<ul style="list-style-type: none"> <li>• High performance MPEG-2 decoding</li> <li>• WMV9 (VC-1) and H.264 (AVC) support</li> <li>• Hardware acceleration for MPEG2 VLD/iDCT</li> <li>• Blu-ray* support @ 40 Mb/s</li> </ul>	N/A
<b>DirectX Version</b>	DirectX 10	DirectX 9.1

## Core™2 Duo Fanless

The ECN-381B has a passive cooling architecture design. The heat pipes and extruded aluminum fins instantly transfer heat from CPU and chipset to the system aluminum enclosure by natural convection. With an Intel® Mobile Core™2 Duo 2.26GHz CPU, the ECN-381B has verified reliability and stability operating under 40°C, and supporting up to 31W CPU TDP fanless operation.

### Intel® Core™2 Duo

Intel® Mobile Core™2 Duo 2.26GHz, Processor P8400  
3MB L2 cache  
TDP 25W

### Intel® Celeron® M

Intel® Celeron® M 2.0 GHz, Processor 575  
1MB L2 cache  
TDP 31W



*A high temperature operation test is performed with ambient air speed of 0.5 meter/sec, compliant with IEC-68-2-2 standard.*

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3

Embedded Computing Solutions

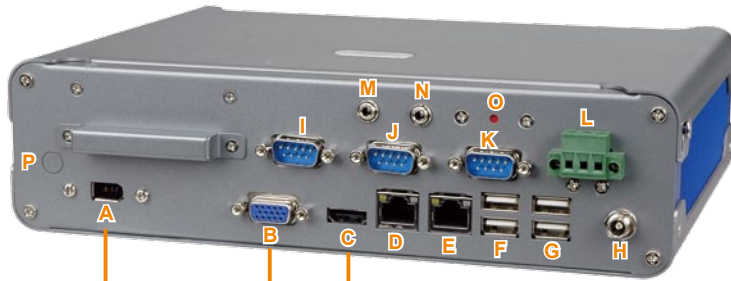
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Power Supply/Peripherals

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Panel Solutions Introduction

## I/O Interface



- A. IEEE 1394a (6-pin)
- B. VGA
- C. HDMI
- D. GbE
- E. GbE
- F. Dual USB
- G. Dual USB
- H. DC-in
- I. RS-232
- J. RS-232
- K. RS-232
- L. TB DC in
- M. Line-out
- N. Mic-in
- O. Reset
- P. Antenna (option)



### IEEE 1394a

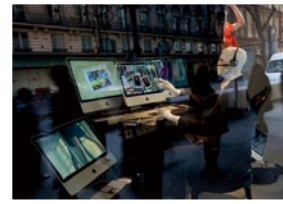
- ◆ Industrial high speed camera
  - Industrial inspection
  - Machine vision
  - Healthcare and medical
  - Security and traffic
- ◆ HD camcorder
  - Broadcasting business
  - Professional video editing



## Full HD Dual Display

The latest 3-chip mobile solution, the Intel® GM45, has substantially improved graphics and medias including an HD display, Blu-ray support as well as MPEG-2 decoding acceleration. Its High-Definition Multimedia Interface (HDMI) support provides 1080p HD digital output perfect for large sized panels and signage applications.

The ECN-381B has VGA and HDMI dual display interfaces for high resolution, and independent screen with audio output. Possible applications include: fine art demonstrations, high fashion displays, large screen digital signage, etc. Any application that requires high definition graphics performance in order to show the true beauty of products and content. The ECN-381B is an excellent choice to fulfill high-end digital signage needs.



## Storage Support

The ECN-381B supports three kinds of storage devices including 2.5" Serial ATA hard drive, CompactFlash® and SSD. Using the ECN-381B as a signage player, you can install the operating system on a CF card while storing multimedia content in the hard drive. This protects the OS image from damage caused by frequent read/write during content playback and update.



2.5" SATA hard drive/SSD



CompactFlash® II

## About HDMI

HDMI is a compact audio/video interface for transmitting uncompressed digital data. It represents a digital alternative to consumer analog standards such as Radio Frequency (RF) coaxial cable, composite video, S-Video, SCART, component video, D-Terminal, and VGA. HDMI connects digital audio/video sources such as set-top boxes, Blu-ray Disc players, personal computers, video game consoles, and AV receivers to compatible digital audio devices, computer monitors, and digital televisions.

## Ordering Information

Part No.	Description
ECN-381B-R10/CM575/1GB	Fanless embedded system with Intel Celeron M 575 2.0 GHz 1MB L2 cache, GM45 chipset, with 1GB DDR3 memory, 12VDC, 60W power adaptor with ERP and PSE certificates, Reflex Blue C+8403C, RoHS
ECN-381B-R10/P8400/1GB	Fanless embedded system with Intel Core 2 Duo P8400 2.26 GHz 3MB L2 cache, GM45 chipset, with 1GB DDR3 memory, 12VDC, 60W power adaptor with ERP and PSE certificates, Reflex Blue C+8403C, RoHS
ECN-381BW-R10/CM575/1GB	Fanless embedded system, Intel Celeron M 575 2.0 GHz 1MB L2 cache, GM45 chipset, built-in 802.11b/g wireless, with 1GB DDR3 memory, 12VDC, 60W power adaptor with ERP and PSE certificates, Reflex Blue C+8403C, RoHS
ECN-381BW-R10/P8400/1GB	Fanless embedded system, Intel Core 2 Duo P8400 2.26 GHz 3MB L2 cache and GM45 chipset, built-in 802.11b/g wireless, with 1GB DDR3 memory, 12VDC, 60W power adaptor with ERP and PSE certificates, Reflex Blue C+8403C, RoHS

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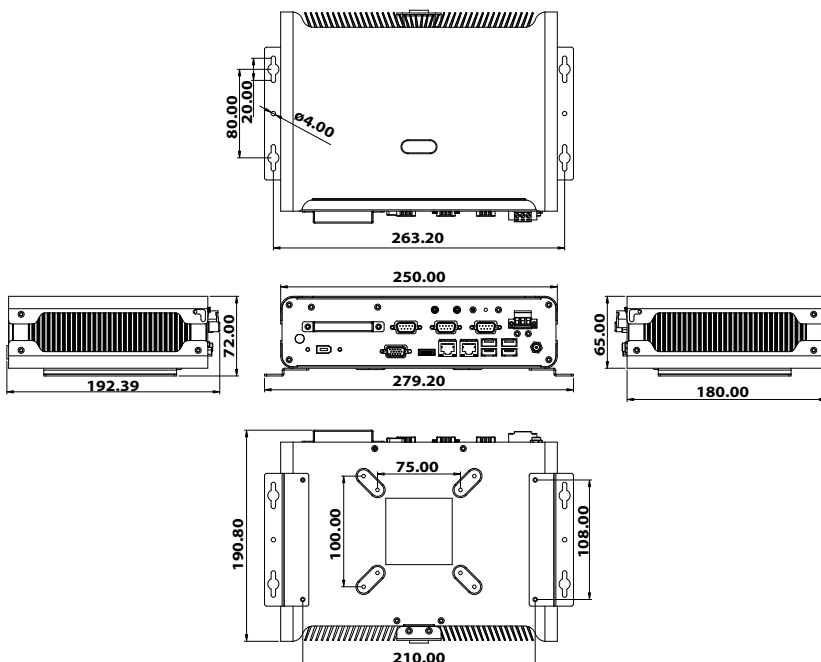
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## Specifications

Model Name		ECN-381B
Chassis	Color	Cool Gray+Blue
	Dimensions	252 x 186 x 64mm
	Chassis Construction	Aluminum alloy with heavy duty metal
Motherboard	Motherboard Model	NANO-GM45A2
	M/B Size	EPIC (165mm x 115mm)
	Processor CPU	Intel® Core™ Duo 2.26GHz, 3MB L2 cache, processor P8400 Intel® Celeron™ M 2.0GHz 1MB L2 cache, processor 575
	Chipset	Intel® GM45 + ICH9M
	System Memory	1 GB DDR3 204-pin SODIMM memory pre-installed
Storage	Hard Drive	1 x 2.5" SATA HDD Space
	CompactFlash®	1
System Function	USB 2.0	4
	Ethernet	2 x Realtek 8111CP PCIe GbE
	RS-232	3
	Display	1 x VGA + 1 x HDMI
	Resolution	2048 x 1536 @ 75 Hz (Analog) 1080P (HDMI)
	Audio	1 x Mic-in, 1 x Speaker out
	Other	1 x IEEE-1394a
	Wireless	1 x 802.11 b/g/n
	Expansions	1 x PCIe Mini card slot (reserved for Wi-Fi)
Power	Power Input	12V DC in
	Power Consumption	12V@3.24A (Intel® Core™2 Duo P8400 2.53G, DDR3 2GB)
Reliability	Mounting	Desktop, VESA mount, wall mount
	Operating Temperature	-10°C ~ 45°C with CompactFlash®/SSD ; -10°C ~ 40°C with 2.5" HDD
	Operating Shock	Half-sine wave 3G; 11ms 3 shocks per axis
	Operating Vibration	Meet MIL-STD-810F 514.5C-1; MIL-STD-810F 514.5C-2
	Weight (Net/Gross)	2.6kg/3.9kg

### Dimensions (unit: mm)



### Packing List

- 1 x QIG
- 2 x wall mount bracket
- 1 x SATA hard drive cable
- 1 x 2dbi wireless antenna (for wireless model only)
- 1 x screw set
- 1 x driver CD
- 1 x power cord
- 1 x 12VDC 60W power adaptor (with ERP and PSE certificates)
- 1 x One Key Recovery CD

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