

**NEW**

# ECN-381B

## Core 2 Duo Fan-less Multimedia Box





- ◆ 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







1 Industrial Computing Solutions

2 Embedded Computing Solutions

3 Industrial Data Collector and Controller

4 Video Capture Solutions

5 I/O Communication Solutions

6 Panel Solutions

7 ORing Network Communication

8 Power Supply/Peripherals

### 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>	667MHz	800/1066MHz
<b>Memory support</b>	DDR2 667/800MHz	DDR2 400/533/667MHz
<b>Graphic engine</b>	Gen. 5.0	Gen. 3.5
<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 Fan-less



The ECN-381B has a passive cooling architecture design. The heat pipes and extruded aluminum fins transfer heat from CPU and chipset instantly to the system aluminum enclosure by natural convection. With Intel® mobile Core™2 Duo 2.26GHz, the ECN-381B is verified its reliability and stability under 40°C high temperature<sup>1</sup>, and support up to 31W CPU TDP fan-less operation.



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



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

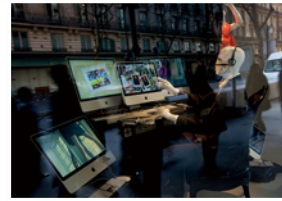
<sup>1</sup> High temperature operation test is performed with ambient air speed 0.5 meter / sec, compliant to IEC-68-2-2 standard.

## Full HD Dual Display



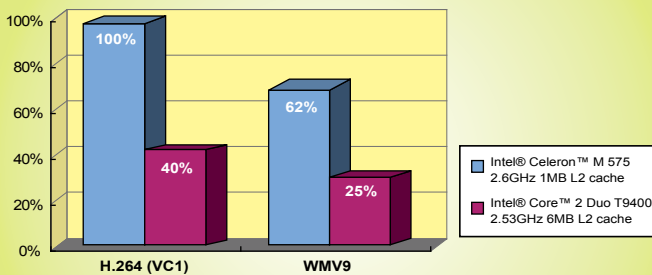
VGA up to 2048x1536

The ECN-GM45A has VGA and HDMI dual display interfaces which support high resolution and independent screen with audio output. Applications like fine art demonstration, high fashion show window, large screen digital signage, all need high definition graphic performance to show the true beauty of product and content. The ECN-GM45A is more than competent to fulfill these requirement.



## 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.



Intel® GM45 Multimedia Performance test (1920 x 1080)

## Specifications

<b>SBC</b>	NANO-GM45A
<b>Processor</b>	Intel® Core 2 Duo 2.26GHz 3MB L2 cache, processor P8400 Intel® Celeron™ M 2.0 GHz 1MB L2 cache, processor 575
<b>Chipset</b>	Intel® GM45 with ICH9M
<b>System Memory</b>	Pre-installed 200-pin 1GB DDR2 SDRAM SO-DIMM
<b>Ethernet</b>	Dual Realtek RTL8111CP GbE
<b>Display</b>	HDMI, VGA
<b>USB</b>	4 x USB 2.0
<b>Serial Port</b>	3 x RS-232
<b>Audio</b>	1 x mic in, 1 x speaker out
<b>Storage</b>	1 x CompactFlash Type II slot, 1 x 2.5" SATA HDD, SATA DOM compatible
<b>Expansions</b>	1 x PCIe mini card slot, reserved for WiFi
<b>Power Input</b>	12VDC in, with 60W power adaptor
<b>Power Consumption</b>	48 W
<b>Chassis Construction</b>	Aluminum Alloy
<b>Operating Temperature</b>	0°C ~ 40°C (with HDD) with air flow* 0°C ~ 45°C (SATA DOM/CompactFlash) with air flow*
<b>Operating Shock</b>	Half-sine wave shock 3G; 11ms; 3 shocks per axis
<b>Operating Vibration</b>	MIL-STD-810F 514.5C-2
<b>Weight (Net/Gross)</b>	2.6 kg / 3.9 kg
<b>Dimensions (DxWxH)</b>	252 mm(W) x 186 mm(D) x 64 mm (H)
<b>Mounting</b>	Desktop, wall mount, VESA mount
<b>EMC/Safety</b>	CE, FCC class A, CCC

\* Ambient air speed pre IEC-68-2-2 standard.

## Storage Support

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



2.5" SATA hard drive



CompactFlash II



SATA DOM

1

Industrial Computing Solutions

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Video Capture Solutions

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I/O Communication Solutions

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Panel Solutions

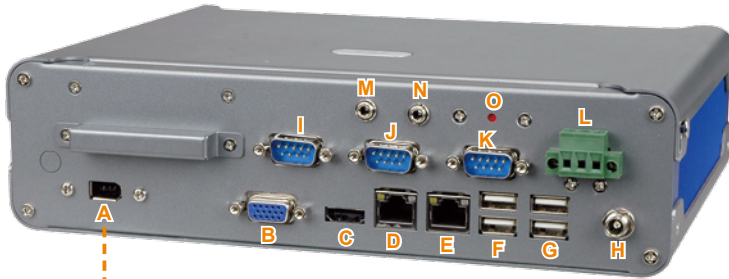
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ORing Network Communication

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Power Supply Peripherals

## 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. RS232
- J. RS232
- K. RS232
- L. TB DC in
- M. Line out
- N. Mic in
- O. Reset



### IEEE 1394a

#### ◆ Industrial high speed camera

- Industrial inspection
- Machine vision
- Healthcare and medical
- Security and traffic

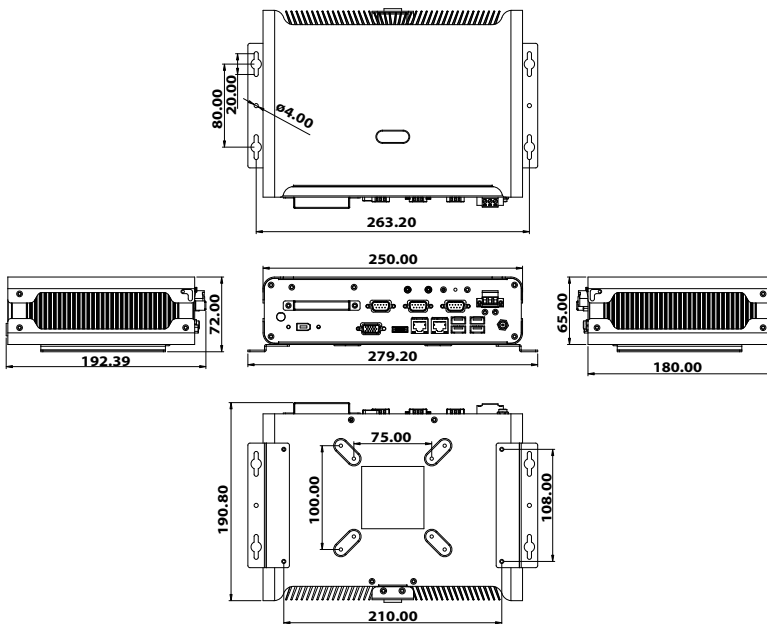


#### ◆ HD camcorder



- Broadcasting business
- Professional video editing

## 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

## 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 DDR2 memory, 12VDC, 60W power adaptor, 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 DDR2 memory, 12VDC, 60W power adaptor, 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 DDR2 memory, 12VDC, 60W power adaptor, 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 DDR2 memory, 12VDC, 60W power adaptor, RoHS

## Embedded OS support

Part No.	Description
ECNCF-381B-GM45-XPE	Windows XP Embedded OS image, for ECN-381B-GM45, with 1GB compactFlash memory card, RoHS

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Industrial  
Computing  
Solutions

2  
Embedded  
Computing  
Solutions

3  
Industrial Data  
Collector  
and Controller

4  
Video  
Capture  
Solutions

5  
I/O  
Communication  
Solutions

6  
Panel  
Solutions

7  
ORing  
Network  
Communication

8  
Power Supply/  
Peripherals