News

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Single Board Computing		Full Size CPU Card
Addon Card		Half Size CPU Card
Intelligent Industrial Solution		Backplane
Embedded System		Industrial Motherboard
Industrial Panel Appliance		Embedded Board
Power Solution		ETX / COM EXPRESS / Q7
Industrial Chassis		RISC Single Board Computers
POS Solution		Peripherals
Video Wall Controller		
Medical Solution by PACSmate®		
Digital Signage		
AIDC Solution	▶	
Industrial Ethernet Communication	▶	
OEM/ODM Service		

ECN-381B

Intel ® GM45 High

Date: March 16, 2010

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

➡ **Specifications**   ➡ **Dimensions**   ➡ **Ordering Information**   ➡ **Packing List**

GM45 Leadership Performance

Montevina Platform – Key Features

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

GM45
- Support for High Def decode in H/W
- Integrated DisplayPort™ & HDMI/HDCP
- Additional USB & SATA ports (no PATA)
- Integrated TPM and Packet Filtering

ICH9M
- 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
FSB	667/800/1066MHz	667MHz
Memory support	DDR3 800/1066MHz	DDR2 400/533/667MHz
Graphic engine	GMA4500MHD	GMA950
Render clock	533-MHz core render clock	250-MHz core render clock
DP/HDMI	Available, with HDCP support	N/A
Multimedia features	• High performance MPEG-2 decoding • WMV9 (VC-1) and H.264 (AVC) support • Hardware acceleration for MPEG2 VLD/iDCT • Blu-ray* support @ 40 Mb/s	N/A
DirectX Version	DirectX 10	DirectX 9.1

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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 tempeature1, and support up to 31W CPU TDP fan-less 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 |

1 *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

The ECN-381B 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-381B is more than competent to fulfill these requirement.

VGA up to 2048x1536

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.

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

I/O Interface

A. IEEE 1364a (6-pin)	I. RS-232
B. VGA	J. RS-232
C. HDMI	K. RS-232
D. GbE	J. TB DC in
E. GbE	M. Line out
F. Dual USB	N. Mic in
G. Dual USB	O. Reset
H. DC in	

IEEE 1394a
♦ Industrial high speed camera
● Industrial inspection
● Machine vision
● Healthcare and medical
● Security and traffic

♦ HD camcorder
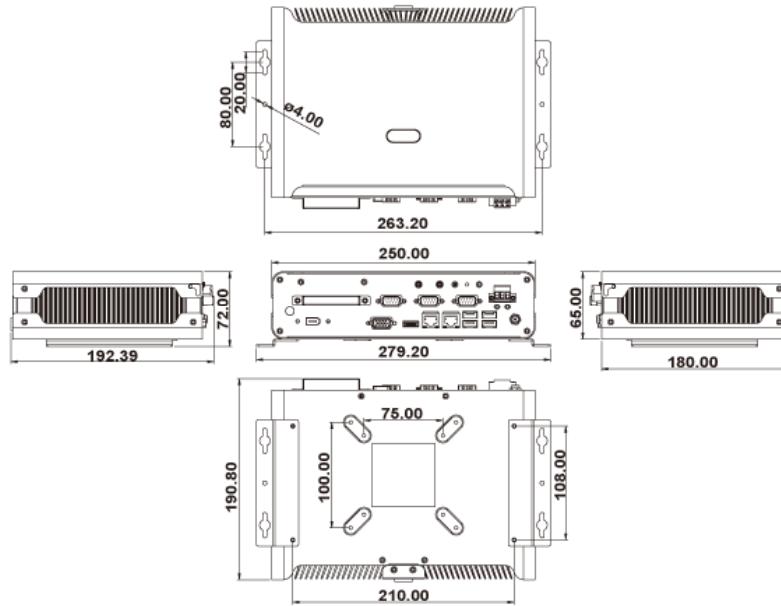● Broadcasting business
● Professional video editing

Specifications

SBC	NANO-GM45A2
Processor	Intel® Core 2 Duo 2.26GHz 3MB L2 cache, processor P8400 Intel® Celeron™ M 2.0 GHz 1MB L2 cache, processor 575
Chipset	Intel® GM45 with ICH9M
System Memory	Pre-installed 204-pin 1GB DDR3 SDRAM SO-DIMM
Ethernet	Dual Realtek RTL8111CP GbE
Display	HDMI, VGA
USB	4 x USB 2.0
Serial Port	3 x RS-232
Audio	1 x mic in, 1 x speaker out
Storage	1 x CompactFlash Type II slot, 1 x 2.5" SATA HDD, SATA DOM compatible
Expansions	1 x PCIe mini card slot, reserved for WiFi
Power Input	12VDC in, with 60W power adaptor (with EUP and PSE certificates)
Power Consumption	48 W (Intel® Core 2 Duo 2.26GHz P8400 with 1GB DDR3)
Chassis Construction	Aluminum Alloy
Operating Temperature	0°C ~ 40°C (with HDD) with air flow* 0°C ~ 45°C (SATA DOM/CompactFlash) with air flow*

Operating Shock	Half-sine wave shock 3G; 11ms; 3 shocks per axis
Operating Vibration	MIL-STD-810F 514.5C-2
Weight (Net/Gross)	2.6 kg / 3.9 kg
Dimensions (DxWxH)	252 mm(W) x 186 mm(D) x 64 mm (H)
Mounting	Desktop, wall mount, VESA mount
EMC/Safety	CE, FCC class A, CCC

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

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Dimensions (mm)

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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 EUP 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 EUP 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 EUP 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 EUP and PSE certificates, Reflex Blue C+8403C, RoHS

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Packing List

1 x QIG   1 x screw set

2 x wall mount bracket   1 x driver CD

1 x SATA hard drive cable   1 x power cord

1 x 2dbi wireless antenna (for wireless model only)   1 x 12VDC 60W power adaptor (with EUP and PSE certificates)

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