

Intel® North Harbor Box PC

Intel SBC inside, Low Power, High Performance Design with Intel Core Duo Processor and offers multiple expansions and I/Os

User Guide Version 1.0

FCC Statement



This device complies with part 15 FCC rules. Operation is subject to the following two conditions :

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class "a" digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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Warranty

We warrant that each of its products will be free from material and workmanship defects for a period of one year from the invoice date. If the customer discovers a defect, We will, at its option, repair or replace the defective product at no charge to the customer, provided it is returned during the warranty period of one year, with transportation charges prepaid. The returned product must be properly packaged in its original packaging to obtain warranty service.

If the serial number and the product shipping data differ by over 30 days, the in-warranty service will be made according to the shipping date. In the serial numbers the third and fourth two digits give the year of manufacture, and the fifth digit means the month (e. g., with A for October, B for November and C for December).

For example, the serial number 1W07Axxxxxxx means October of year 2007.

Check List

Before using this BOX PC, please make sure that all the items listed below are present in your package

- 1 x North Harbor unit
- 1 x Driver & Manual CD
- 1 x North Harbor BOX PC User Guide
- 1 x EPIC User Manual
- 1 x VESA Wall-Mount Kits.

Make sure that all of the items listed above are present. Do not attempt to apply power to the system if there is damage to any of its components.

Customer Service

We provide service guide for any problem as follow steps : First, contact with your distributor, sales representative, or our customer service center for technical support if you need additional assistance. You may have the following information ready before you call :

- Product serial number
- Peripheral attachments
- Software (OS, version, application software, etc.)
- Description of complete problem
- The exact wording of any error messages

In addition, free technical support is available from our engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products. Please do not hesitate to call or e-mail us.

Safety Precautions

◆ **Warning!**



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

◆ **Caution!**



Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

Safety and Warranty

1. Please read these safety instructions carefully.
2. Please keep this user's manual for later reference.
3. Please disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
12. Never pour any liquid into an opening. This could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
14. If any of the following situations arises, get the equipment checked by service personnel:
 - A. The power cord or plug is damaged.
 - B. Liquid has penetrated into the equipment.
 - C. The equipment has been exposed to moisture.
 - D. The equipment does not work well, or you cannot get it to work according to the user's manual.
 - E. The equipment has been dropped and damaged.
 - F. The equipment has obvious signs of breakage.
15. Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20° C (-4°F) or above 60° C (140° F). It may damage the equipment.

Revision History

Version	Date	Note
1.0	2009.09.25	✓ First Version

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Chapter 1 GENERAL INFORMATION

1-1 Introduction

The Intel North Harbor BOX PC is high performance, low power PC with Intel® GM45 chipset. The Intel® Core 2 Quad/Core 2 Duo/Core Processor, high performance CPU delivers the most performance per watt available in the market. The BOX PC is designed to satisfy most in the digital signage and industrial market, such as Shopping Mall, Education and Transportation. It's a PC-based system with DDR3 SDRAM, DVI-I and HDMI controller, multi-COM port interface, and on-board Ethernet. North Harbor integrates Mini-PCIe, one PCIEx4 for WIFI/WIMAX and upgrade graphic card. It is a compact design to meet the demanding performance requirements of today's business and Signage applications.



North Harbor Type II

1-2 EPIC BOX PC Specifications

System Specification	
Processor	Intel® Core 2 Duo Processors, up to 2.53GHz (Socket P)
Chipset	Intel® GM45 / ICH7M-E
Memory	2 x DDR3 DIMM socket, supports up to 8GB DDR3 800/1066 SDRAM
BIOS	AMI 4MB Flash
Graphic Chipset	Integrated in Intel GM45, DVI/HDMI display output Up to 384MB shared with system memory
Ethernet	2 x Giga LAN (Intel 82574L+82567LM)
Audio	Realtek ALC888 (Line-in, Line-out, Mic in)
USB	4 ports, USB 2.0
Serial	2 x RS232 (Type III and Type IV)
Mechanical Specification	
Construction	Aluminum housing
Mounting	VESA Mount
Power Supply	
Power input	+12V DC-IN(Lockable, Power Jack)
Environmental Specification	
Operation Temperature	0~35 °C
Operating Humidity	30%~90% (non-condensing, RH)

Chapter 2 Getting Started

2-1 Input / Output Devices

The following figure shows the I/O arrangement of North Harbor BOX PC. The backside of the chassis contains most of the connectors. Intel North Harbor Box PC has four types.

1. Intel North Harbor Type I BOX PC



Label	Device
I.	Power Button
II	HDD LED
III.	Reset Button
IV.	Audio Jack
1.	RJ-45
2.	USB
3.	HDMI
4.	DVI
5.	12V DC-IN

Intel North Harbor Type I BOX PC



System Specification	
Processor	Intel® Core 2 Duo P8400 2.26GHz Processor
Chipset	Intel® GM45 / ICH7M-E
Memory	1 x DDR3 DIMM socket, supports up to 8GB DDR3 800/1066 SDRAM
BIOS	AMI 4MB Flash
Graphic Chipset	Integrated in Intel GM45, DVI/HDMI display output Up to 384MB shared with system memory
Ethernet	1 x Giga LAN (Intel 82567LM)
Audio	Realtek ALC888 (Line-in, Line-out, Mic in)
USB	4 ports, USB 2.0
Display output	1 x HDMI and 1 x DVI-I
Mechanical Specification	
Construction	Aluminum housing
Mounting	VESA Mount
Power Supply	
Power input	+12V DC-IN(Lockable, Power Jack)
Environmental Specification	
Operation Temperature	0~35 °C
Operating Humidity	30%~90% (non-condensing, RH)

2. Intel North Harbor Type II BOX PC



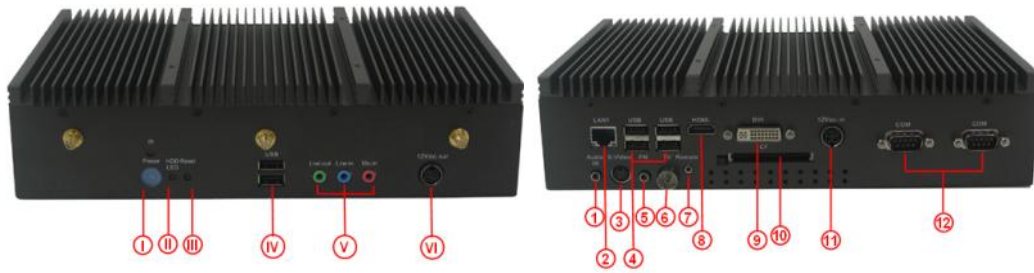
Label	Device
I.	Power Button
II	HDD LED
III.	Reset Button
IV.	Audio Jack
1.	RJ-45
2.	USB
3.	HDMI
4.	DVI
5.	12V DC-IN

Intel North Harbor Type II BOX PC



System Specification	
Processor	Intel® Core 2 Duo T9400 2.53GHz Processor
Chipset	Intel® GM45 / ICH7M-E
Memory	1 x DDR3 DIMM socket, supports up to 8GB DDR3 800/1066 SDRAM
BIOS	AMI 4MB Flash
Graphic Chipset	Integrated in Intel GM45, DVI/HDMI display output Up to 384MB shared with system memory
Ethernet	1 x Giga LAN (Intel 82567LM)
Audio	Realtek ALC888 (Line-in, Line-out, Mic in)
USB	4 ports, USB 2.0
Display output	1 x HDMI and 1 x DVI-I
Mechanical Specification	
Construction	Aluminum housing
Mounting	VESA Mount
Power Supply	
Power input	+12V DC-IN(Lockable, Power Jack)
Environmental Specification	
Operation Temperature	0~35 °C
Operating Humidity	30%~90% (non-condensing, RH)

3. Intel North Harbor Type III BOX PC



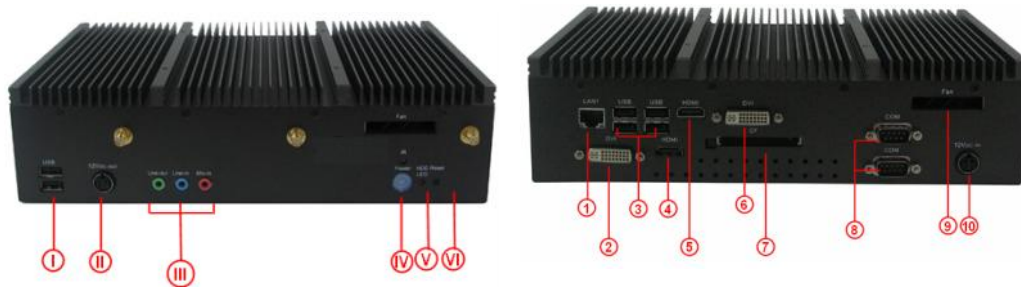
Label	Device
I.	Power Button
II.	HDD LED
III.	Reset Button
IV.	USB
V.	Audio Jack
VI.	12V DC Out
1.	Audio in
2.	LAN
3.	S-Video
4.	USB
5.	FM
6.	TV
7.	Remote
8.	HDMI
9.	DVI
10.	CF Card Slot
11.	12V DC In
12.	COM

Intel North Harbor Type III BOX PC



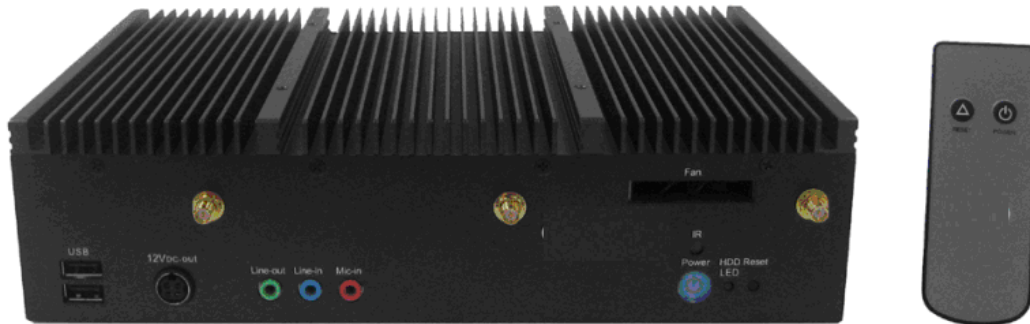
System Specification	
Processor	Intel® Core 2 Duo P8400 2.26GHz Processor
Chipset	Intel® GM45 / ICH7M-E
Memory	1 x DDR3 DIMM socket, supports up to 8GB DDR3 800/1066 SDRAM
BIOS	AMI 4MB Flash
Graphic Chipset	Integrated in Intel GM45, DVI/HDMI display output Up to 384MB shared with system memory
Ethernet	1 x Giga LAN (Intel 82567LM)
TV Card	Audio in/S-Video/FM/TV/Remote
Audio	Realtek ALC888 (Line-in, Line-out, Mic in)
USB	6 ports, USB 2.0
Display output	1 x HDMI and 1 x DVI-I
Mechanical Specification	
Construction	Aluminum housing
Mounting	VESA Mount
Power Supply	
Power input	+12V DC-IN(Lockable, Power Jack)
Environmental Specification	
Operation Temperature	0~35℃
Operating Humidity	30%~90% (non-condensing, RH)

Intel North Harbor Type IV BOX PC



Label	Device
I.	USB
II	12V DC Out
III.	Audio Jack
IV.	Power
V.	HDD LED
VI.	Reset
1.	LAN
2.	DVI
3.	USB
4.	HDMI
5.	HDMI
6.	DVI
7.	CF Card Slot
8.	COM
9.	Fan
10.	12V DC In

Intel North Harbor Type IVBOX PC



System Specification	
Processor	Intel® Core 2 Duo T9400 2.53GHz Processor
Chipset	Intel® GM45 / ICH7M-E
Memory	1 x DDR3 DIMM socket, supports up to 8GB DDR3 800/1066 SDRAM
BIOS	AMI 4MB Flash
Graphic Chipset	Integrated in Intel GM45, DVI/HDMI display output Up to 384MB shared with system memory
Ethernet	1 x Giga LAN (Intel 82567LM)
Graphic Card	1 x HDMI and 1 x DVI
Audio	Realtek ALC888 (Line-in, Line-out, Mic in)
USB	6 ports, USB 2.0
Display output	1 x HDMI and 1 x DVI-I
Mechanical Specification	
Construction	Aluminum housing
Mounting	VESA Mount
Power Supply	
Power input	+12V DC-IN(Lockable, Power Jack)
Environmental Specification	
Operation Temperature	0~35 °C
Operating Humidity	30%~90% (non-condensing, RH)

2-2 Starting the BOX PC & O/S Installation

1. Connect the power to AC/DC adapter, and connect the power cord to the AC outlet.
2. Press the power on switch to start the Panel PC.
3. Press “DEL” to enter the CMOS setting and check the BIOS setup.
4. You may install your own O/S if it is not installed.

When installing O/S for this BOX PC, please follow the steps and use external equipment as **Keyboard and Mouse.**

- (a) Please use external USB DVD-ROM to run the O/S and Driver setting



2-3 Driver Installation

The BOX PC comes with a User's Manual and Driver CD that contains most of the drivers and utilities of your needs.

1. Following the step by step to install Driver (Please refer North Harbor SBC User's Manual Chapter 3, 4, 5, 6) include: Chipset, VGA, Audio, and Ethernet.