EBOX-333x Series

User's Guide

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Safety Information

WARNING

➢   Do not expose EBOX to rain or moisture, in order to prevent shock and fire hazard.
➢   Never install EBOX in wet locations.
➢   Do not open the cabinet to avoid electrical shock. Refer to your nearest dealer for qualified personnel servicing.
➢   Never touch un-insulated terminals or wire unless your power adapter and display monitor are disconnected.
➢   Locate EBOX as close as possible to the socket outline for easy access and to avoid force caused by entangling of your arms with surrounding cables from the EBOX.
➢   Avoid using or installing the modem to the serial port during a storm or a lightning.
➢   Do not use the modem or a telephone to report a gas leak in the vicinity of the leak.
➢   USB connectors are supplied with Limited Power Sources.

> **DO NOT ATTEMPT TO OPEN OR TO DISASSEMBLE THE CHASSIS (ENCASING) OF THIS PRODUCT. PLEASE CONTACT YOUR NEAREST DEALER FOR SERVICING FROM QUALIFIED TECHNICIAN.**

Regulatory

FCC Class A Note

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 in which case the user will be required to correct the interference at his own expense. Testing was done with shielded cables. Therefore, in order to comply with the FCC regulations, you must use shielded cables with your installation.

WARNING

This product complies with EN55022 class A. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference - causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications.

Manufacturer's Declaration of Conformity

This equipment has been tested and found to comply with the requirements of European Community Council Directives 89/336/EEC and 73/23/EEC relating to electromagnetic compatibility and product safety respectively.

Attention

This product has been designed and certified to comply with certain regulatory requirements pertaining to Information Technology Equipment. This product has not been designed for use as a medical device. Without limitation of the foregoing, this product is not intended and has not been certified for use in a hospital or clinical environment to diagnose, treat, or monitor patients under medical supervision, and is not intended and has not been certified to make physical or electrical contact with patients, nor to transfer energy to or from patients and/or to detect such energy transfer to or from patients.

Purchase Agreement

Purpose:

In accordance to the general commercial conduct of Trust and Fair Trade, herewith below is the agreement for the protection for both parties, DMP and Users in pursuant of trading.

Product Description:

With this product, herewith also known as EBOX-333x Series, which is a simplified and economical design of an embedded device for Special Purpose Personal Computing. The basic specification of this product is comprised of the x86 technology design, and with onboard 1GB/ 2GB DDR2 System memory, VGA display, USB, COM ports, and LAN Interfaces.

Distribution Convention:

1. This Product includes a gift box, an inner case, a PC, a Power adaptor, and SATA cable. Upon receiving this product, kindly please refer to the User' Manual to check for the contents and appearance of this product; contact immediately your nearest dealer or DMP office for any defective or missing parts. The supplier will not be responsible for any reported discrepancy there after the expiration period of 3-days from the received date.

2. In consideration of transportation and the cost of storage, the supplier provides to the distributors a warranty of 12-months. This warranty covers the failure caused by hardware breakdown (excluding hard drives), but does not cover the act of misuse and mishandling.

3. The supplier will not accept unknown post, therefore if you wish to repair or to return your goods – kindly please contact your nearest dealer to make your declaration, and at the same time, apply for an RMA number (RMA stands for Return Merchandise Authorization – please ask for RMA form and fill-up for authorization).

4. The freight for return goods for repair will follow the International customary practice and convention: Both parties is to pay for freight of one shipment each. The shipper is required to prepay the freight from the place of origin (This means that the returnee (user) covers the freight for return goods, while the Supplier covers the freight for goods after the repair).

5. Obsolete warranty is referred to as: (1) Expiration of warranty or (2) Damage due to misuse within warranty. The Supplier will be taken into consideration of the circumstances, to provide repair service with charges expense for obsolete warranty. This expense includes the cost of material and the cost of labor.

Note: If there is other particular issue not listed in the above conditions, both parties agreed to follow the General Law of Commerce with fair and reasonable discussion in handling and resolving the argument.

Contents

Chapter1

Unpacking Your EBOX Mini PC

Congratulation! You have just acquired EBOX-333x Series, please check the following items:

Packing List:

Item No.	Description	Q'ty
1	EBOX-333x Series VESA PC	x 1
2	Max. 22.5 watts External Power Adaptor, Vin: 100~240VAC 50/60Hz.	x 1

Note: The accessories are subject to change without immediate notice.

Check Before Use

1. EBOX-333x Series Unit

2. AC Power Adaptor

Total 4 types: US, UK, EU and AU power plug to choose before purchase, buyers can choose one of it.

Preface

EBOX-333x Series VESA PC

EBOX-333x Series is a revolutionary device which is especially designed for limited physical space and temperature concerns. No matter you are in a jammed office, a crowded place, or public transportation, EBOX-333x can be easily integrated with a VESA LCD to bring it to access at any time.

It can be attached to any VESA mounting fixture; allowing it to be securely mounted onto desks, walls, or buildings, and thereby optimizes your work area. It can also be attached directly to any size LCD for a mobile system for the use at trade shows, presentations, promotions, etc. Unlike traditional portable laptop design, the EBOX-333x Series can be used with a large size LCD. Furthermore, with FANLESS design, the EBOX-333x Series is ideal to be used in the environment where temperature demand is critical.

So, if you are looking for a device that is able to provide you with more mobility, space, less power consumption, then the EBOX-333x Series will be surely meet your need.

The VESA® FDMI™ Standard defines mounting interfaces, hole patterns and associated cable/power supply locations for LCD monitors, plasma displays and other flat panel devices. The EBOX-333x Series is designed to fit this standard to make monitor attachment quickly and easily.

Chapter*2*

EBOX-333x Series Overview

Front Panel

A: Power LED
The power LED lights up when the system is turned on.

B: SD Card LED
Green flashing LED indicates SD card activity.

C: Line Out
EBOX-333x Series default audio in Line out.
Note: Mic in instead Line out can be optional.

D: USB 2.0 port
Connection for external USB devices.

E: SD Card Slot
For the storage SD Card, the system is bootable from SD Card.

F: COM port
COM3 is optional for RS-232 or GPIO port.

G: COM port
COM4 is optional for RS-232, GPIO or CANbus port.

H: CF Card Slot
The system is bootable from CF Card.

I: Mic in
For Microphone Input.

J: COM port
COM3 is optional for RS-232, RS-485 or GPIO port. (on EB-336x RS485 x3, x4 Series only)

K: COM port
COM4 is optional for RS-232, RS-485 or GPIO port. (on EB-336x RS485 x3, x4 Series only)
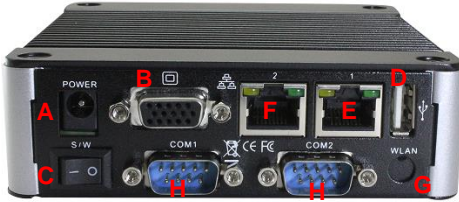
Back Panel

A: Power Jack
Volt: DC +8V~+24V.

B: VGA port

C: Power switch

D: USB 2.0 port

E: RJ-45 LAN Jack
LAN 1 is 10/100 Mbps.

F: RJ-45 LAN Jack
LAN 2 is 1Gbps. (Optional)

G: Wireless Antenna connector (Optional)

H: COM port
COM1 & COM2 are optional for RS-232,
RS-485, RS-422 or GPIO ports.

I: Printer port
Parallel port for connecting peripheral.

J: RJ-45 LAN Jack
LAN 1 and LAN 3 are 1Gbps.

K: RJ-45 LAN Jack
LAN 2 is 10/100 Mbps.

System Specifications

CPU

Vortex86DX2 (933MHz)

Main Memory

1GB DDR2 (32-bit DRAM bus, EBOX-3330 Series)

2GB DDR2 (32-bit DRAM bus, EBOX-3332 Series)

※ For Windows 7 users, EBOX-333x Series support 32-bit version only, 64-bit version does not support.

BIOS

AMI BIOS

VGA

Resolution up to 1920 x 1440 pixels

On-Board SATA

SATA 2.0 connector x1

※ mSATA support (mSATA to SATA adapter required)

On-Board mPCIe

mPCIe port x 1 (available for mPCIe version)

Peripheral

1. USB 2.0 x 4 (External: 3 ports; Internal: 1 port)

2. SD Card slot x 1

3. CF Card slot x 1 (available for CF Card version)

4. Serial port x 4 (available for some listed models)

5. GPIO port x 2 (available for GPIO version)

6. Printer port x 1 (available for printer port version)

7. Audio (Line out as standard)

8. Mic in x 1 (available for LAN x 3 version)

Dimension & Weight

115 x 115 x 35mm / 510g ~ 540g

Supported Operating System

Windows 7 Home/ Pro.

Windows 7 Embedded

Windows XP Home/ Pro.

Windows XP Embedded

Windows Embedded CE

Linux OS:

(click Linux Support List for details)

Peripherals
Connecting the Power Adaptor

A: DC Power Jack

To use EBOX-333x Series immediately, please attach the supplied adapter for the power source. See the left diagram for visual connection.

Connect the DC power jack of the power adaptor to the DC Input of EBOX-333x Series.

B: Turning ON EBOX-333x Series

Switch on power as indicated on your left-side figure, the system will start.

Note: Unit with Auto Power On support function, it will turn on automatically after power adaptor plug on.

Connecting the Monitor

C: VGA out Connection

Connect your LCD display Monitor with VGA cable (Not included in EBOX console bundles) to the 15-pin D-Sub VGA port.

*Chapter***3**

BIOS Reconfiguring

AMI BIOS is used in the EBOX-333x Series. To reconfigure the BIOS, press <Del> key repeatedly to enter BIOS setup main menu as below:
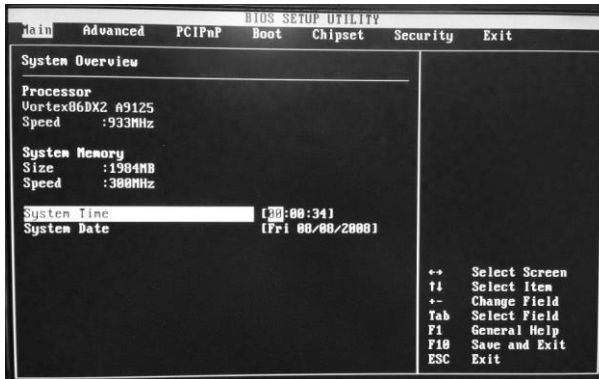
Use ← and → keys to select screen; ↑ and ↓ keys to scroll the selected item. Press <ESC> return to previous screen and press <F9> if you want to load factory default setting. Following guide concentrated only those settings that may need to change.

Primary IDE Pin Select setting:

1.   Boot up EBOX unit and press <Del> to get into BIOS menu.
2.   Move to **Advanced** "Primary IDE Pin Select":
      ➔ Parallel IDE = use 2.5" SATA HDD, SATA DOM or CF card as main storage.
      ➔ SD Card = use SD card as main storage.
3.   Press <F10> to save the setting and exit.
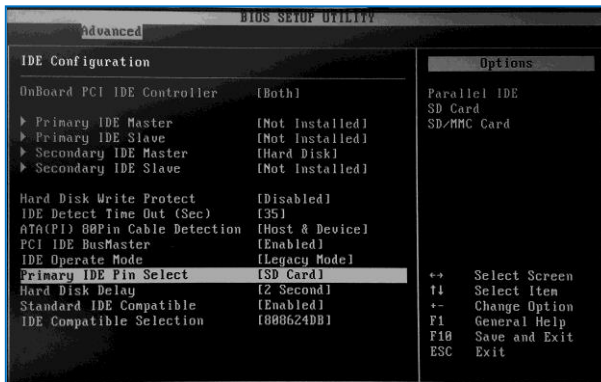
mPCIe signal setting:

EBOX-333x with mPCIe socket support both USB and COM port signals. And EBOX-333x mPCIe Series COM port signal support function defaulted as disabled, user can use mPCIe via USB signal without setting.
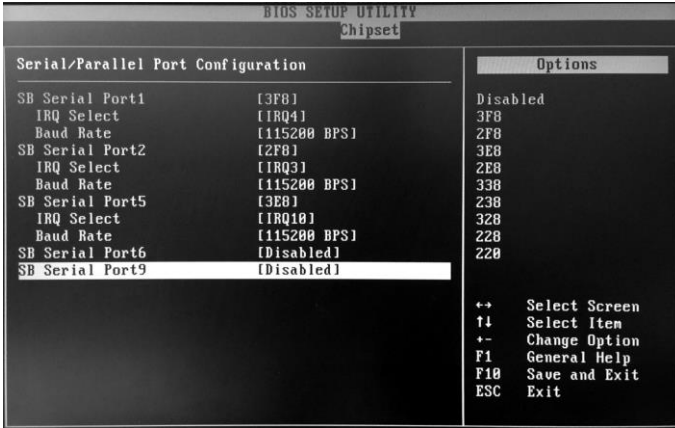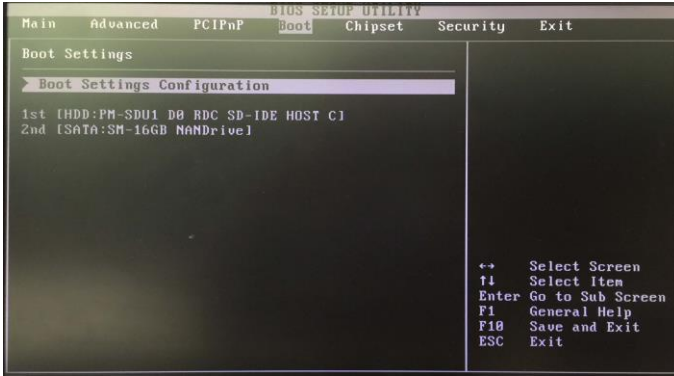

For user want to use mPCIe via COM port signal, set BIOS SB Serial Port9 enabled as below:
Move to **Chipset ➔** SB Serial Port9 and set BIOS COM9 Port Interface as 228 to enable. Press <F10> to save the setting and exit.
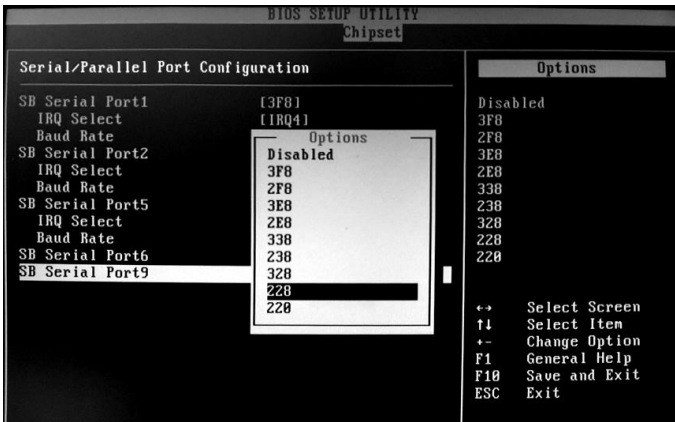
Boot setting:

1.   Boot up EBOX unit and press <Del> to get into BIOS menu.
2.   Move to **Boot** "Boot Settings Configuration" and press Enter

3.   Set your main storage as 1st boot..

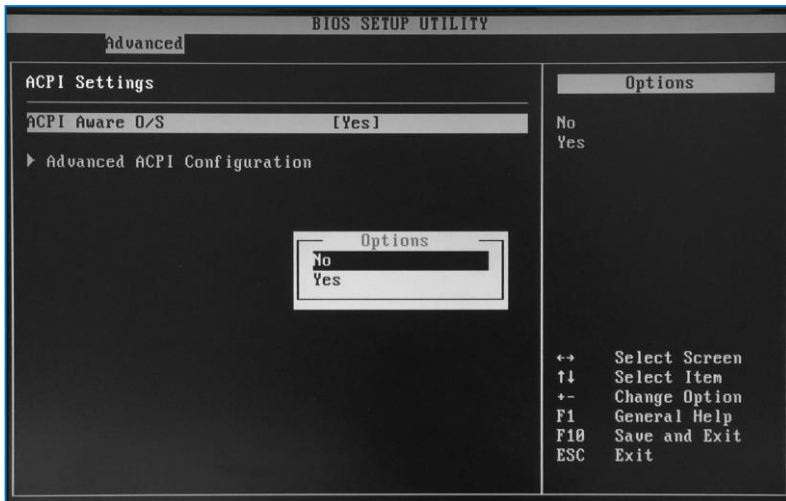4.   Press <F10> to save the setting and exit.

ACPI setting:

For Windows XP or XPe OS users, please set ACPI Aware O/S to [No], steps as below:

1.   Boot up EBOX unit and press <Del> to get into BIOS menu.

2.   Move to **Advanced** and select "ACPI Configuration" then press ENTER.
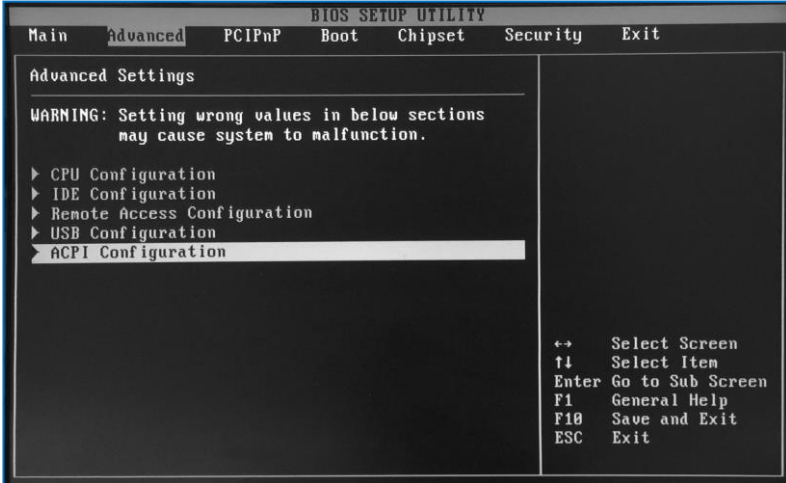
3.   Press ENTER.on "ACPI Aware O/S" and choose [No] in the pop out options, then press "F10" to save the setting and exit.
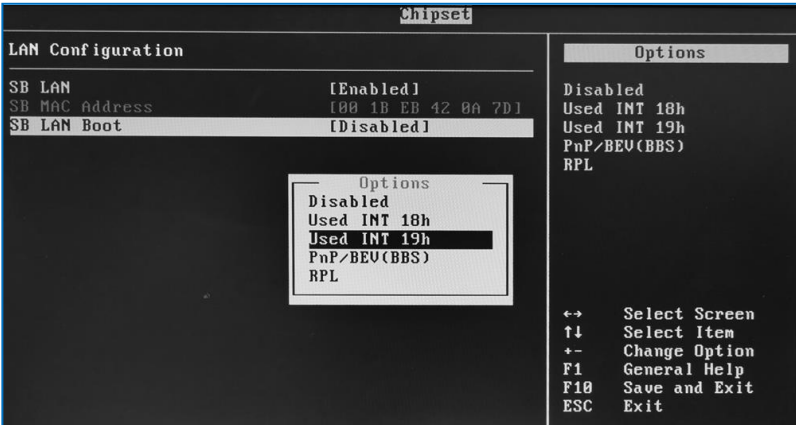
PXE Diskless boot setting:

1.   Boot up EBOX unit and press <Del> to get into BIOS menu.

2.   Move to **Chipset** then select "SouthBridge Configuration" and press ENTER.
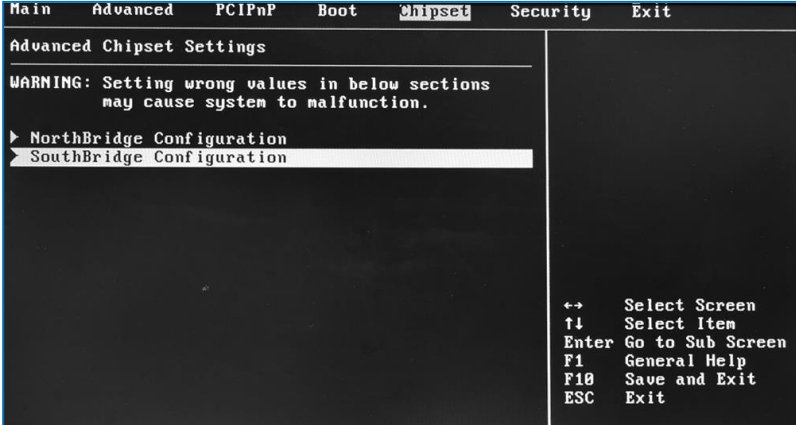
3.   Move to "LAN Configuration" and enter "SB LAN Boot" to choose "Used INT 19h".

4.   Press "F10" to save the setting and exit.

Drivers Installation guide

Under the Windows series OS, the following drivers need to be installed manually.
1.   VGA driver
2.   Ethernet driver
3.   Wireless LAN Dongle driver (Optional)
4.   Audio driver (for windows XP only)

Note:
1.   Please find the mating drivers from EBOX support page .
2.   For Windows 7 or WES7 OS, install the XMPlay for audio player download here.

VGA driver:

Unzip the downloaded file and double click the setting .exe file then "Next"as below to install:
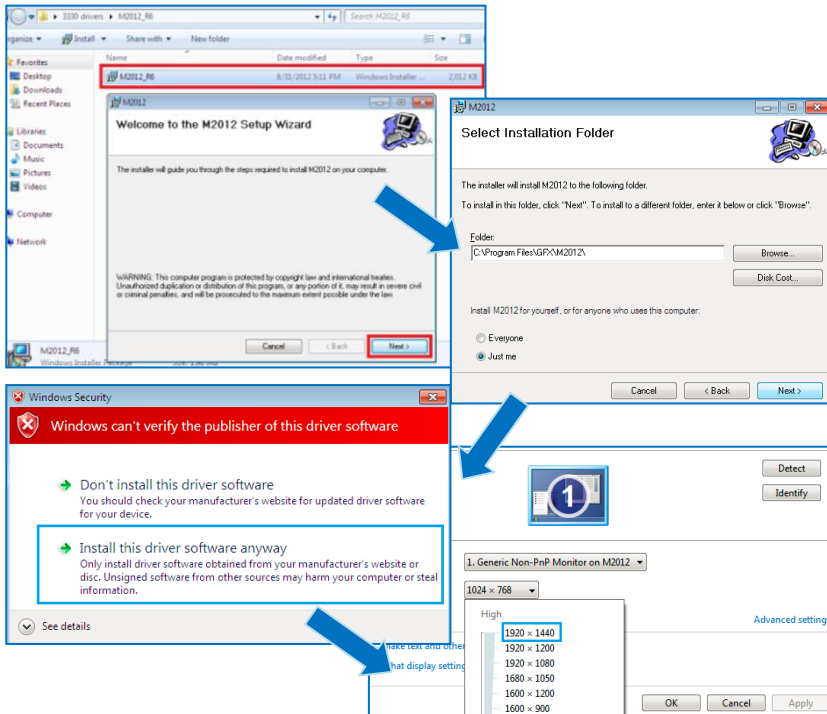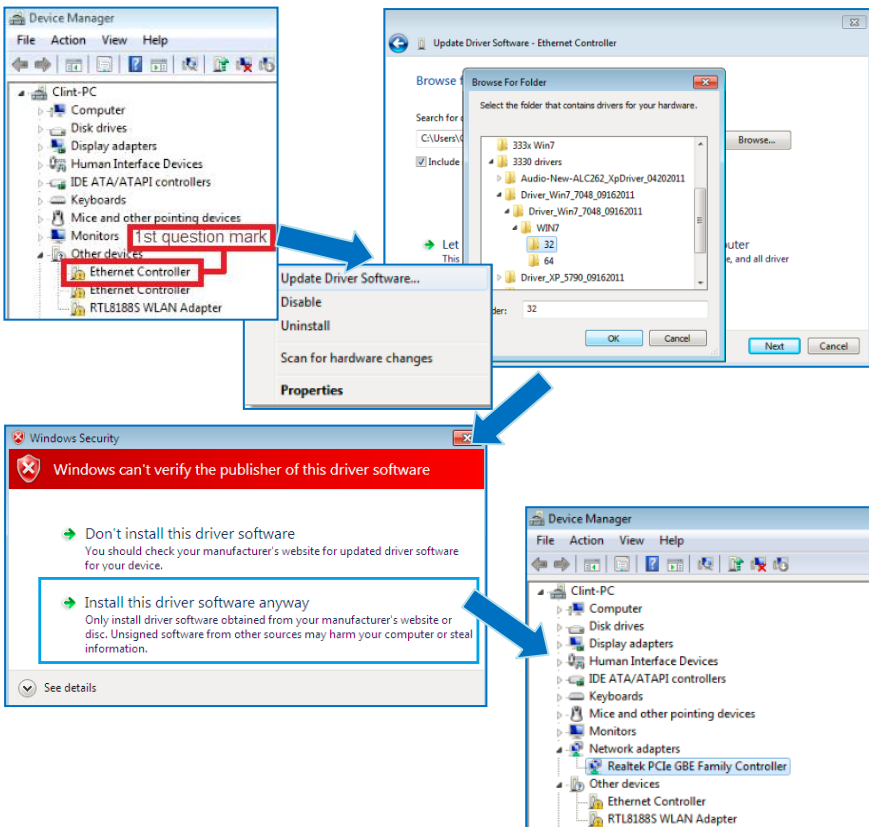

After VGA driver installation completed, you will have to restart the computer. Then you will be able to select the resolution up to 1920 x 1440 pixels.

Ethernet driver:

1.   Download corresponding Ethernet drivers from <u>EBOX-333x Series driver page</u> and unzip.
2.   Find the yellow question mark of Ethernet in the Device Manager under the control panel/ system.
3.   Select "Update Driver Software" and choose the right path, then click " Install this driver software anyway " when Windows Security popped out.
4.   After installation completed, the Device Manager will update and show the correct device.

Note:
1.   For dual LAN version, the 1st question mark need to be installed 1G LAN driver.
2.   For EBOX-333x-L3U4C1, the 1st and 2nd question marks need to be installed 1G LAN driver.

Audio driver:

Unzip the downloaded file and double click the setting .exe file, then "Next" as below to install. After the installation completed, the Device Manager will update and show the correct device.
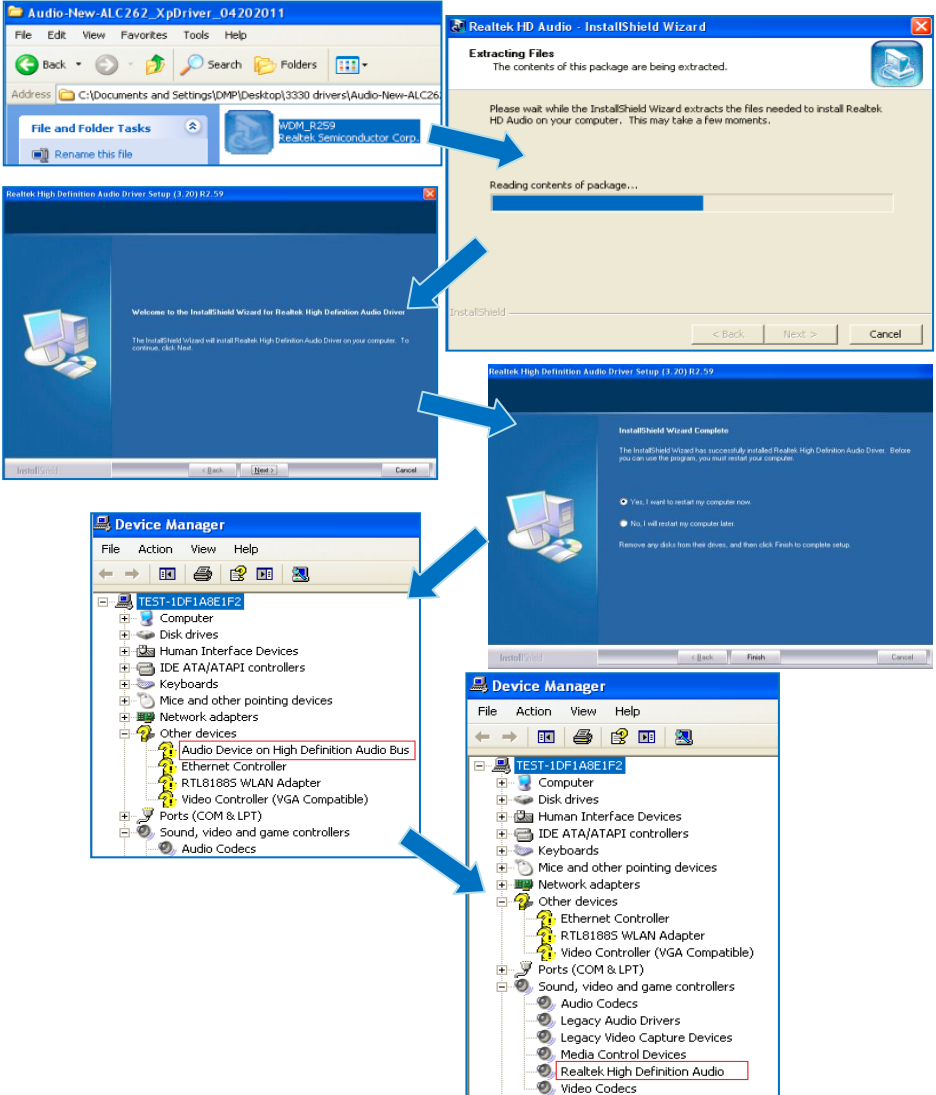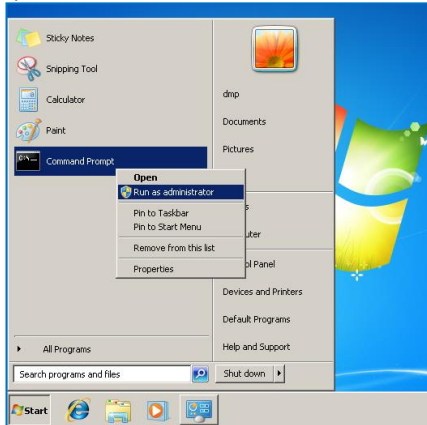
Additional information

Disable TRIM function:

TRIM function sets enable as default in Windows 7 and WES7 OS. EBOX-333x Series does not support storages with TRIM function (SSD/ Disk on Module). User has to disable TRIM function manually by following steps:

1.   Open command prompt as Administrator.

2.   Excute **fsutil behavior query disabledeletenotify** to check TRIM status.

      Results explained below:
      DisableDelecteNotify = 1 (Windows TRIM commands are disabled)
      DisableDelecteNotify = 0 (Windows TRIM commands are enabled)

3.   To disable the TRIM function by excuting **fsutil behavior set disabledeletenotify 1**

4.   Excute **fsutil behavior query disabledeletenotify** again and make sure the TRIM Commands are disabled. ie: DisableDelecteNotify = 1.
5.

Screen rotation:

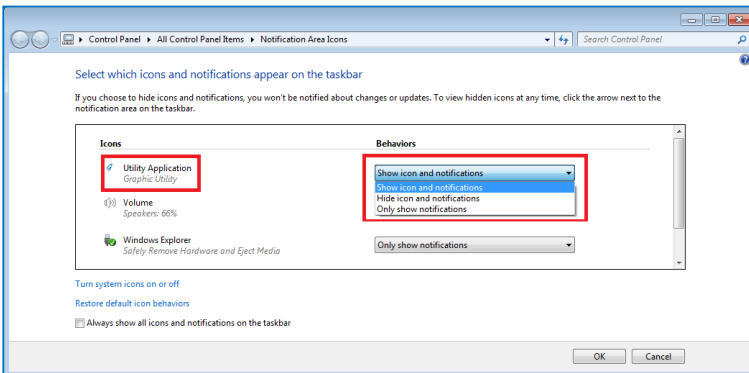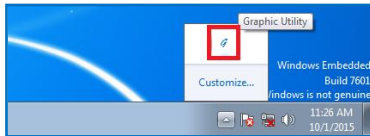1.   After VGA driver installation completed, type "Customize icons" in search bar.
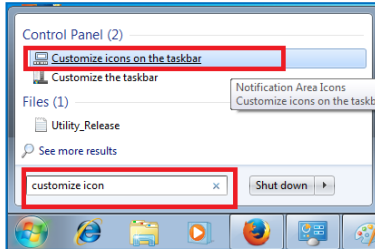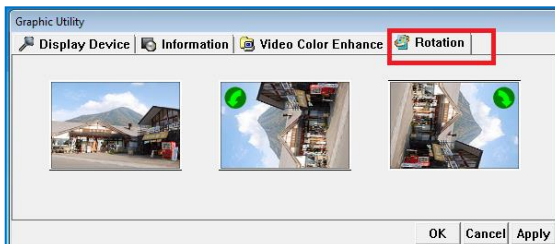

2.   Adjust Utility Application to "Show icon and notifications".

3.   A blue icon = Graphic Utility appears on screen, double click it.

4.   In Graphic Utility, go to Rotation section. Select the direction of rotation then press Apply to test and OK to save the changes.

Turn off the display function setting:

For Windows 7 or WES7 OS users, click **Start Menu** > **Control Panel** > **Power Options**, or simply search for "**Power Options**" (without quotes). You will see a list of different power plans.
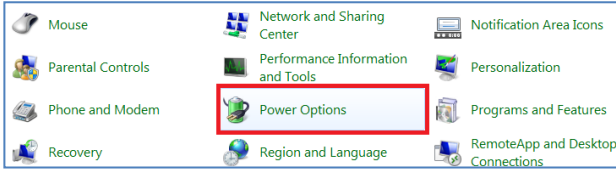
The plan currently in use has a blue dot in front of it. Click "**Change Plan Settings**" next to the power plan currently in use. Click on the drop-down menu list, that is exactly next to "Turn off the display". From the options, you can set the amount of idle time.
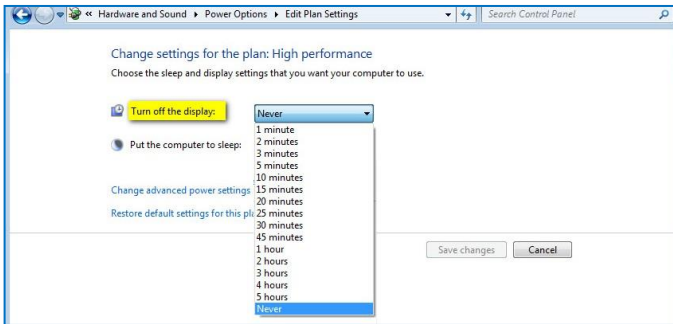
EBOX-333x Series does not support sleep function, it cannot wake up after sleep.
To avoid the unwakeable sleep, please disable function by setting "Put the computer to sleep" to "Never".
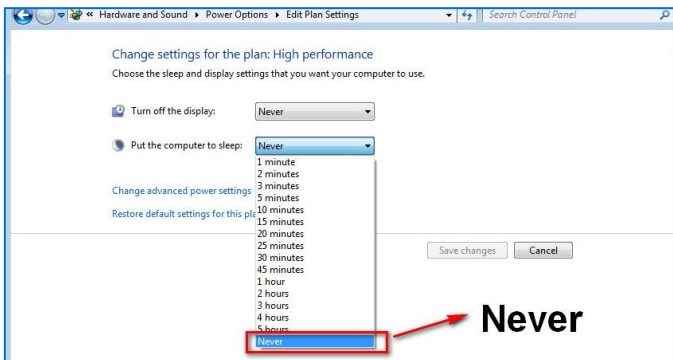
CANbus information:

In EBOX-333x CANbus Series, the serial port (COM4) has been adapted for CANbus use.
And the CANbus is onboard, it doesn't need extra external power.

PIN assignmnet:
J14: COM - 9-pin D-Sub connector (CANbus)

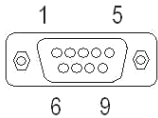| Pin #	Signal Name	Pin #	Signal Name
1	- -	2	CANL
3	CAN_GND	4	- -
5	- -	6	- -
7	CANH	8	- -
9	- -	- -	- -

EBOX-333x CANbus Series provide a UART (serial) interface with HOST to communicate, support CANbus 2.0A and CANbus 2.0B, to work as a UART to CANbus bridge.

The CANbus only requires a minimum of three pins, those three pins are assigned to Ground,
CANH: CAN High is an input of a "high" voltage.
CANL: CAN Low is an input of a "low" voltage.

In computing terms, the communication architecture is subdivided into 7 layers. Each layer follows   a different protocol that is standard. Two standards commonly listed are:

Data frame
CAN network can be configured to work with two different frame formats:
a. Base frame format CAN 2.0A with 11 bits identifier.
b. Extended frame format CAN 2.0B with 11-29 bits identifier.

Standards
ISO 11898 specifies physical and datalink layer. Following are two commonly listed CAN physical layer and standards:
a. ISO 11898-2:
    This protocol specifies the high-speed at transmission rates of up to 1 Mbit/s.
    Supports a cable length of up to 40 meters

b. ISO 11898-3:
   This protocol specifies low-speed at transmission rates above 40 kBit/s up to 125 kBit/s.
    Support a much longer cable length, 500 to 1000 meters.

Linux installation guide For Debian7.0/ Ubuntu10.04

Regarding the system installation of Debian7.0/ Ubuntu10.04, please follow the steps and suggestions to complete the system installation on the EBOX-333x Series platform. The following is a brief instruction, users may configure it according to their specific needs.

1. Configuration of BIOS

● The first step is to ensure BIOS has correctly configured that necessary function was enabled for IDE device. (for Debian7.0 especially)

```
        Advanced
*******************************************************************************
* IDE Configuration                                       *          Options       *
******************************************************   *                          *
* OnBoard PCI IDE Controller        [Both]               * Disabled                 *
*                                                        * Enabled                  *
* * Primary IDE Master              [Not Detected]       *                          *
* * Primary IDE Slave               [Not Detected]       *                          *
* * Secondary IDE Master            [Not Detected]       *                          *
* * Secondary IDE Slave             [Not Detected]       *                          *
*                                                        *                          *
* Hard Disk Write Protect           [Disabled]           *                          *
* IDE Detect Time Out (Sec)         [35]                 *                          *
* ATA(PI) 80Pin Cable Detection     [Host & Device]      *                          *
* IDE Operate Mode                  [Legacy Mode]        *                          *
* PCI IDE BusMaster                 [Enabled]            * **    Select Screen      *
* Primary IDE Pin Select            [Parallel IDE]       * **    Select Item        *
* Hard Disk Delay                   [2 Second]           * +-    Change Option      *
* Standard IDE Compatible           [Enabled]            * F1    General Help       *
* IDE Compatible Selection          [808624DB]           * F10   Save and Exit      *
*                                                        * ESC   Exit               *
*                                                        *                          *
*******************************************************************************
        v02.69 (C)Copyright 1985-2010, American Megatrends, Inc.
```

● Keep pressing the key <Del> can assist entering BIOS when the power turned on. The BIOS functions you need to check locate <u>Advanced \ IDE Configuration \ Standard IDE Compatible.</u> Set as Enabled.

2. Basic system installation

- For Debian7.0, after booting from the installation CD, moving straight to install system would get a text mode system only, please choose Graphic Install for Graphical User Interface OS installation.
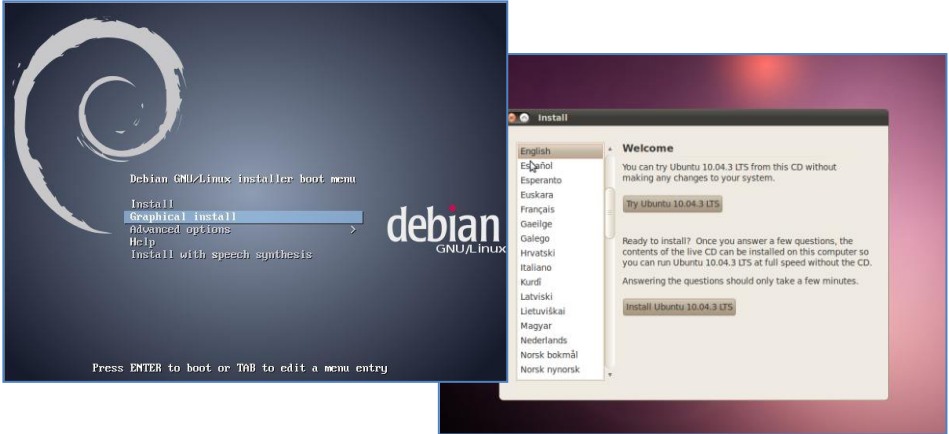
- Set basic configuration such as language, keyboard map and time zone, etc. steps by steps.

- Then the system will detect the network hardware, and requires users to load the firmware files for network device rtl8168, just answer no for this inquiry and move forward.

- Next the system will detect multiple network interfaces on the EBOX-333x Series, and users have to decide the primary network interface, both of them could be chosen. Note: the Ethernet cable must be plugged in during this period.

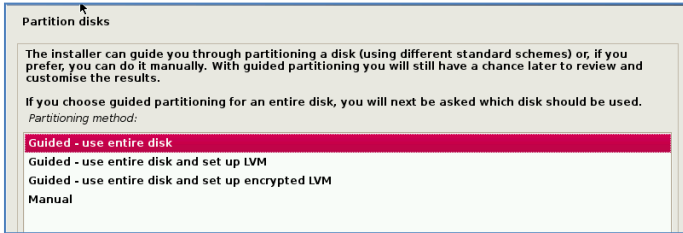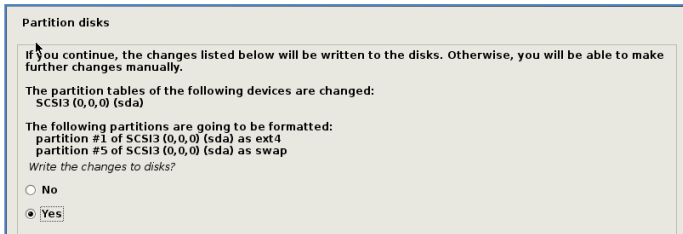● During the installation process, the system would ask users to create partitions for the operating system. Following example is using entire disk for the beginner. Choose "Guided - use entire disk".

● Select "Yes" to create the partition.


● Then the system would keep popping out questions for configuration, suggestions as below:
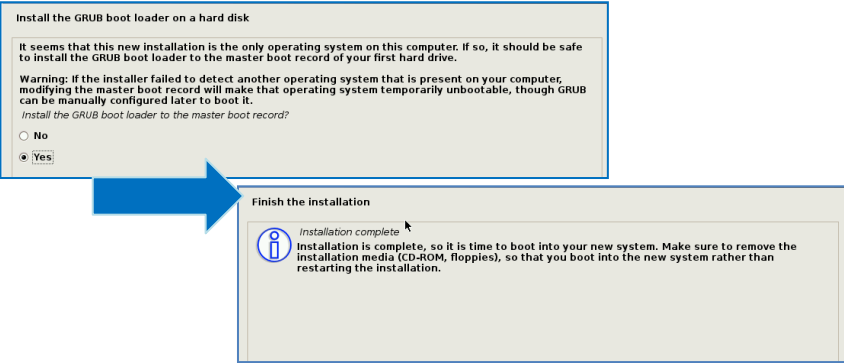
For Software selection:
Please remark both the Debian desktop environment and standard system utilities, then click to continue. It would start the package installation, and around hundred packages would be installed, after installation completed, the next indication message would pop up.
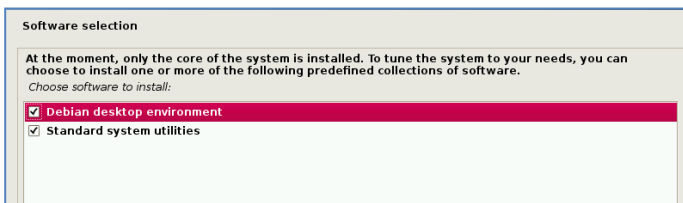
For Install the GRUB boot loader on a hard disk:
    Answer YES to complete the installation as last procedure.

Install the GRUB boot loader on a hard disk

It seems that this new installation is the only operating system on this computer. If so, it should be safe to install the GRUB boot loader to the master boot record of your first hard drive.

Warning: If the installer failed to detect another operating system that is present on your computer, modifying the master boot record will make that operating system temporarily unbootable, though GRUB can be manually configured later to boot it.

Install the GRUB boot loader to the master boot record?

○ No
⊙ Yes

Finish the installation

Installation complete
Installation is complete, so it is time to boot into your new system. Make sure to remove the installation media (CD-ROM, floppies), so that you boot into the new system rather than restarting the installation.

● When it's completed, the disc tray will eject with pop-up message, press continue to restart and be ready to enjoy the new system!

The Debian7.0
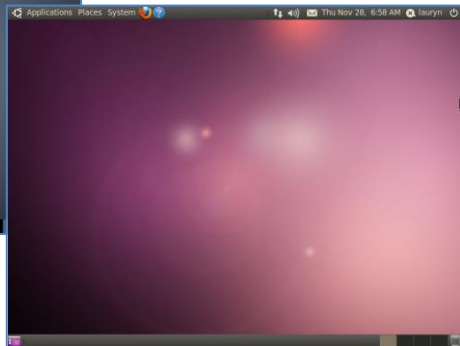
The Ubuntu10.04

3. Install the VGA driver (Console mode)

- Switch to console mode by pressing key <Ctrl> + <Alt> + <F1>, then copy the VGA driver rdc_drv.so to the driver folder /usr/lib/xor/modules/drivers/, please refer to Linux support page for most updated drivers.

- Follow instruction below to execute.

```
#/etc/init.d/gdm stop
#X –configure
#cp /root/xorg.conf.new /etc/X11/xorg.conf
#/etc/init.d/gdm restart
```

※Please click xorg.conf to download for your system, if the display is out of range.

- Reboot and make sure all the display is normal then set the resolution as requested.
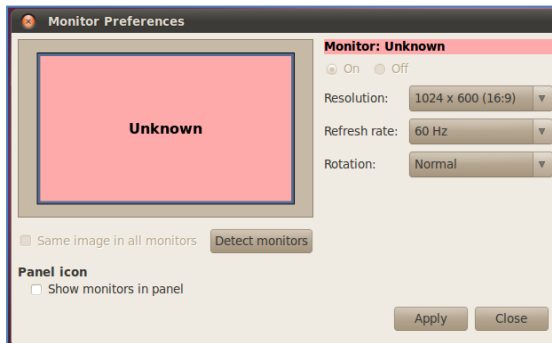

The supported resolutions:

|		
1920x1200 (16:10)	1400x960	1280x768 (16:10)
1920x1080 (16:9)	1280x1024 (5:4)	1280x720 (16:9)
1600x1200 (4:3)	1440x900 (16:10)	1024x768 (4:3)
1680x1050 (16:10)	1280x960 (4:3)	800x600 (4:3)
1400x1050 (4:3)	1366x768 (16:9)	640x480 (4:3)
1440x960 (3:2)	1360x768 (16:9)	

4. The system configuration:

Enable the Auto login
System / Administration / Login Screen

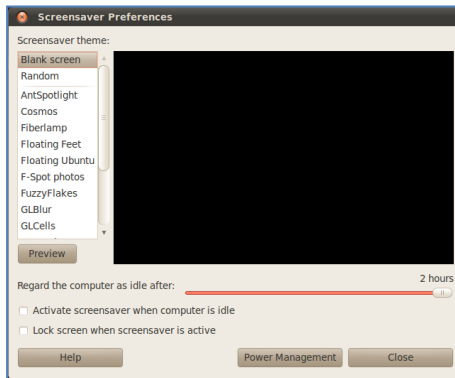Execute the utility "Login Screen" and enter the password to process it.
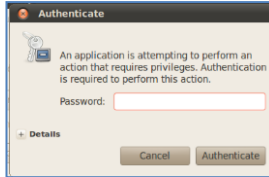
Set the Log in as "user account" automatically.
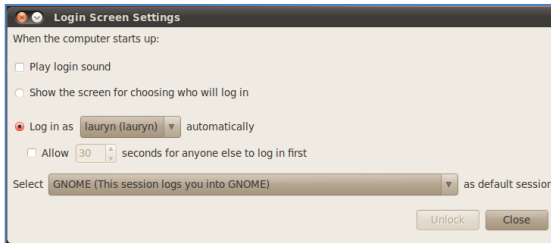
Disable the power saving mode when system idle,
System / Preference / Screensaver

Unmarked the option "Active the screensaver when computer is idle".

Click close to complete the system configuration.

5. Setting adjustment for Gigabit LAN device (RTL-8111/8168 for Debian 7.0 system only).

● To add the parameters "pci=nomsi" in the line of Linux of GRUB as below. The MSI/MSI-X must disabled for application of Gigabit LAN (RTL-8111/8168) on the EBOX-333x Series, it could be set permanent by edition of file /boot/grub/grub.cfg.

```
                    GNU GRUB   version 1.99-27+deb7u1

   setparams 'Debian GNU/Linux, with Linux 3.2.0-4-486'

   load_video
   insmod gzio
   insmod part_msdos
   insmod ext2
   set root='(hd0,msdos1)'
   search --no-floppy --fs-uuid --set=root 16dcc3b2-7d16-4b1e-9f79-bb79\
   a94af682
   echo 'Loading Linux 3.2.0-4-486 ...'
   linux /boot/vmlinuz-3.2.0-4-486 root=UUID=16dcc3b2-7d16-4b1e-9f79-bb\
   79a94af682 ro  pci=nomsi
   echo 'Loading initial ramdisk ...'
   initrd /boot/initrd.img-3.2.0-4-486



      Minimum Emacs-like screen editing is supported. TAB lists
      completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for
      a command-line or ESC to discard edits and return to the GRUB
      menu.
```

Chapter*4*

Onboard Connectors Summary

Summary Table for EBOX PCB Board			
Nbr	**Description**	**Type of Connections**	**Pin nbrs.**
J1	SODIMM-SOC-200P-1.8V	SODIMM socket 200 Pin	200-pin
J3	SATA	SATA socket	7-pin
J5	USB1 (Front)	USB connector	4-pin
J6	USB2 (Front)	USB connector	4-pin
J7	USB3 (Back)	USB connector	4-pin
J8	USB4 (Inside or Back)	USB connector	4-pin
J9	Ethernet LAN	RJ-45	8-pin
J10/ J11	Ethernet LAN	G-LAN, RJ-45	8-pin
J11/ J12	COM1 port (Back)	Box Header 5 x 2 2.0mm	9-pin
J12	COM2 port (Back)	Box Header 5 x 2 2.0mm	9-pin
J13	COM3 port (Front)	Box Header 5 x 2 2.0mm	9-pin
J14	COM4 port (Front)	Box Header 5 x 2 2.0mm	9-pin
J14	Line out	Audio jack	2-pin
J15	DC +8V~+24V Input	DC JACK	1-pin
J15	Mic in	Audio jack	2-pin
J16	Power switch	Power switch	4-pin
J17	DC +8~+24V Input	DC JACK	1-pin
J18	VGA	D-Sub connector	15-pin
J20	Line out	Audio jack	2-pin
J26	mPCIe	mPCIe slot	52-pin
CF1 (CF Card Series)	CF Card	CF Card slot	50-pin
J20 (Printer port Series)	Printer port	Parallel port	25-pin

Note:
J11, J12, J14, J15, J17 and Back is specific for EB-333x-L3U4C1 unit only.

▶ Front Connectors Outline

A: SD Card Slot   **B**: USB 2.0   **C**: Line out
D: COM or GPIO port   **E**: COM, GPIO or CANbus port
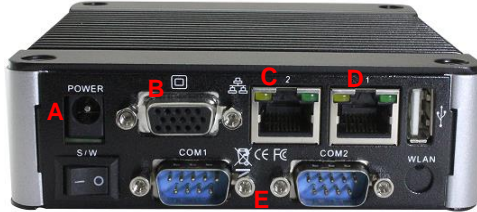

F: CF Card Slot   **G**: Power & HDD LED

H: Mic in

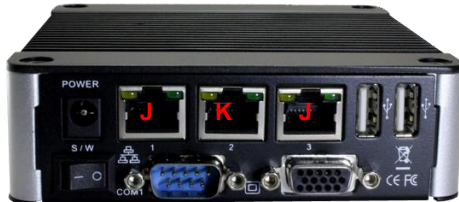*EBOX-333x Models all with Auto Power On feature, do NOT have front Reset Button

▶ Rear Connectors Outline

A: DC Power Jack   **B**: VGA   **C**: 1 Gbps LAN
D: 10/100 Mbps LAN   **E**: GPIO or COM ports

F: Printer port   **G**: Power Switch
H: 10/100 Mbps LAN   **I**: USB 2.0

J: 1 Gbps LAN   **K**: 10/100 Mbps LAN

Pin Assignments

For standard version :

J16: Power SW - Push Button Switch

	Pin #	Status
			ON
	O	OFF

J15: DC-IN (+8V~+24V) - 2-pin Jack

	Pin #	Signal Name
	1	+8~+24V Input
	2	GND

J5, J6, J8: USB 2.0 (180°)   J7: USB 2.0 (90°)

Horizontal Type	Pin #	Signal Name	Vertical Type	Pin #	Signal Name
1 4	1	VCC	4	1	VCC
	2	Data --		2	Data --
	3	Data +		3	Data +
	4	GND	1	4	GND
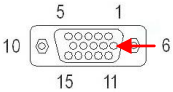
LEDS: POWER ON/ OFF & SD Card R/W

	LED Color	State
●	Green	Power On
●	Green	SD Card On
	Green Flashes	SD Card R/W
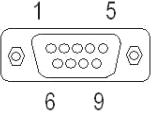
J9, J10: LAN RJ-45 connector

	Pin #	Signal Name	Pin #	Signal Name
	1	FTXD+	2	FTXD-
	3	FRXIN+	4	NC
	5	NC	6	FRXIN-
8 2, 1	7	NC	8	NC
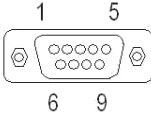
J18: VGA 15-pin D-Sub connector

	Pin #	Signal Name	Pin #	Signal Name	Pin #	Signal Name
5 1	1	MR	6	GND	11	NC
	2	MG	7	GND	12	VCC
10	3	MB	8	GND	13	HYSYNC
15 11	4	NC	9	NC	14	VSYNC
	5	GND	10	GND	15	VCC

J11 (COM1), J12 (COM2): RS-232/ RS-485/ RS-422, 9-pin D-Sub connector
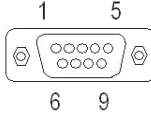
Pin #	Signal Name	Pin #	Signal Name
1	DCD/ RS-485- / 422TX-	2	RXD/ RS-485+ / 422TX+
3	TXD/ 422RX+	4	DTR1/ 422RX-
5	GND	6	DSR
7	RTS	8	CTS
9	RI	- -	- -

J13 (COM3), J14 (COM4): RS-232, 9-pin D-Sub connector
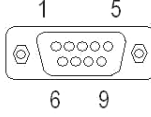
Pin #	Signal Name	Pin #	Signal Name
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	- -	- -

For CANbus version :
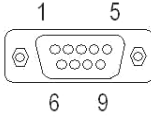
J11 (COM1), J12 (COM2): RS-232/ RS-485/ RS-422, 9-pin D-Sub connector

Pin #	Signal Name	Pin #	Signal Name
1	DCD/ RS-485- / 422TX-	2	RXD/ RS-485+ / 422TX+
3	TXD/ 422RX+	4	DTR1/ 422RX-
5	GND	6	DSR
7	RTS	8	CTS
9	RI	- -	- -
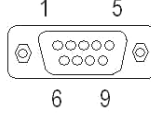
J11 (COM1), J12 (COM2): GPIO P4 and P5, 9-pin D-Sub connector

Pin #	Signal Name	Pin #	Signal Name
1	PORT 40/ PORT 50	2	PORT 44/ PORT 54
3	PORT 41/ PORT 51	4	PORT 45/ PORT 55
5	GND	6	PORT 46/ PORT 56
7	PORT 42/ PORT 52	8	PORT 47/ PORT 57
9	PORT 43/ PORT 53	- -	- -

J13 (COM3): RS-232, 9pin D-Sub connector
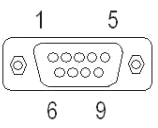
Pin #	Signal Name	Pin #	Signal Name
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	- -	- -

J14 (COM4): CANbus, 9pin D-sub connector
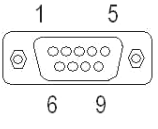
Pin #	Signal Name	Pin #	Signal Name
1	- -	2	CANL
3	CAN_GND	4	- -
5	- -	6	- -
7	CANH	8	- -
9	- -	- -	- -

For 8-bit GPIO version with RS-232 port :
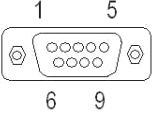
J11 (COM1): GPIO P4, 9-pin D-sub connector

Pin #	Signal Name	Pin #	Signal Name
1	PORT 40	2	PORT 44
3	PORT 41	4	PORT 45
5	GND	6	PORT 46
7	PORT 42	8	PORT 47
9	PORT 43	- -	- -

J12 (COM2): GPIO P5, 9-pin D-Sub connector
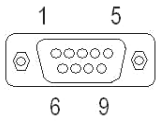
Pin #	Signal Name	Pin #	Signal Name
1	PORT 50	2	PORT 54
3	PORT 51	4	PORT 55
5	GND	6	PORT 56
7	PORT 52	8	PORT 57
9	PORT 53	- -	- -

J13 (COM3), J14 (COM4): RS-232, 9-pin D-Sub connector
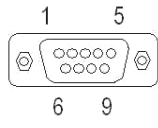
Pin #	Signal Name	Pin #	Signal Name
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	- -	- -

For 8-bit GPIO version with RS-485 port :
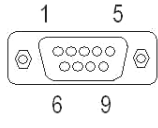
J11 (COM1), J12 (COM2): RS-485, 9-pin D-Sub connector

Pin #	Signal Name	Pin #	Signal Name
1	RS-485-	2	RS-485+
3	TXD	4	DTR1
5	GND	6	DSR
7	RTS	8	CTS
9	RI	- -	- -

J13 (COM3): GPIO P0, 9-pin D-Sub connector
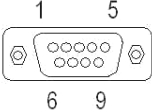
Pin #	Signal Name	Pin #	Signal Name
1	PORT 00	2	PORT 04
3	PORT 01	4	PORT 05
5	GND	6	PORT 06
7	PORT 02	8	PORT 07
9	PORT 03	- -	- -

J14 (COM4): GPIO P1, 9-pin D-Sub connector
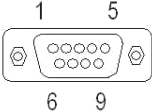
Pin #	Signal Name	Pin #	Signal Name
1	PORT 10	2	PORT 14
3	PORT 11	4	PORT 15
5	GND	6	PORT 16
7	PORT 12	8	PORT 17
9	PORT 13	- -	- -

For RS-485 x3, x4 version :
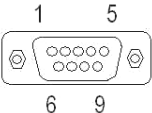
J11 (COM1): RS-232, GPIO P4, 9-pin D-sub connector

Pin #	Signal Name	Pin #	Signal Name
1	DCD/ PORT 40	2	RXD/ PORT 44
3	TXD/ PORT 41	4	DTR/ PORT 45
5	GND	6	DSR/ PORT 46
7	RTS/ PORT 42	8	CTS/ PORT 47
9	RI/ PORT 43	- -	- -
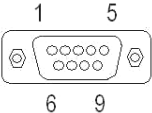
J12 (COM2): RS-232, GPIO P5, 9-pin D-Sub connector

Pin #	Signal Name	Pin #	Signal Name
1	DCD/ PORT 50	2	RXD/ PORT 54
3	TXD/ PORT 51	4	DTR/ PORT 55
5	GND	6	DSR/ PORT 56
7	RTS/ PORT 52	8	CTS/ PORT 57
9	RI/ PORT 53	- -	- -

J13 (COM3): RS-232, RS-485, GPIO P0, 9-pin D-Sub connector

Pin #	Signal Name	Pin #	Signal Name
1	DCD/ RS-485-/ PORT 00	2	RXD/ RS-485+/ PORT 04
3	TXD/ PORT 01	4	DTR/ PORT 05
5	GND	6	DSR/ PORT 06
7	RTS/ PORT 02	8	CTS/ PORT 07
9	RI/ PORT 03	- -	- -

J14 (COM4): RS-232, RS-485, GPIO P1, 9-pin D-Sub connector

Pin #	Signal Name	Pin #	Signal Name
1	DCD/ RS-485-/ PORT 10	2	RXD/ RS-485+/ PORT 14
3	TXD/ PORT 11	4	DTR/ PORT 15
5	GND	6	DSR/ PORT 16
7	RTS/ PORT 12	8	CTS/ PORT 17
9	RI/ PORT 13	- -	- -

Chapter*5*

Taking Care of your EBOX

This section gives you some guidelines on using EBOX-333x Series **–** Safe using, Storing and Handling.

Storing

▶ Do not place EBOX-333x Series in a location that is subject to:

- Heating sources, such as stove, oven, heater, radiator or air duct
- Direct contact from sunlight
- Rain or moisture area
- Excessive dust accumulation area
- High humidity place
- Constant or occasional mechanical movement, vibration or shock
- Strong magnets or magnetic fields or magnetically unshielded speakers
- Out of the operating temperature range from 5°C to 50°C

▶ Do not place other electronic device or electrical equipment near EBOX-333x Series. The electromagnetic field of the EBOX-333x Series may cause interference subjecting to malfunction.

▶ Provide adequate air ventilation (circulation) to prevent internal buildup of heat. Do not place EBOX-333x Series near the wall, behind the curtains or draperies, in between two books that block its ventilation slots. Leave a space of at least 8 inches (20cm) behind the sides and back panel of the EBOX-333x Series.

▶ Change of environmental temperature: Problems may occur when there is a sudden change of environmental temperature, or if the EBOX-333x Series is brought directly from a cold location to a warm one, moisture may condense inside EBOX-333x Series. Turn off the device, and contact your nearest dealer.

▶ Check the surrounding appliance(s) before using EBOX-333x Series. Since the EBOX-333x Series uses high-frequency radio signal and may interface with radio or TV reception causing interference or poor signal display. When this happens, relocate the EBOX-333x Series by a suitable distance away from the set.

▶ Do not drop the EBOX-333x Series from the working table nor place heavy objects on top of it.

Cleaning Your VESA PC

▶ Clean the VESA PC with a soft dry cloth to lightly moistened with a mild detergent solution.
▶ Do not use any type of abrasive pad, scouring powder, or solvent such as alcohol or benzene,   as these may damage the finish of EBOX.
▶ When a solid object falls or a liquid spills onto the EBOX, turn off the EBOX immediately and unplug the LAN and power cables. Contact a qualified person or your dealer to check the EBOX before you use it again.
▶ Always disconnect the power cord from the power source before cleaning the EBOX.

Troubleshooting

This section describes the techniques of resolving some basic problems that you encounter when using EBOX-333x Series. For more troubleshooting guidelines, please contact your nearest dealer for technical support.

Troubleshooting Your VESA PC

A. VESA PC does not start –

▶ Make sure the EBOX-333x Series is properly secured and plugged into a power source before it is turned on. Make sure the power indicator shows the power is on. See section 2 for more information about "EBOX-333x Series Overview".

▶ When the EBOX-333x Series is plugged into a power strip or the UPS (Uninterruptible Power Supply), make sure the power strip or UPS is turned on and working normally.

▶ Check if your VGA or LCD monitor is properly plugged into a power source and turned on. Make sure the brightness and contrast controls are adjusted correctly. See the manual that came with your display (monitor) for details.

▶ Check if your power control button does not function, by removing the AC adaptor. Wait for one minute, and then reattach all power connection before pressing the power button.

▶ Condensation may cause the EBOX-333x Series to malfunction for a while. If this happens, do not use the EBOX-333x Series for at least one hour.

▶ When you have checked all the above guidelines and the EBOX-333x Series does not work.
   Remove the power adaptor from the EBOX-333x Series, unplug the power cord, and plug it in again.
   Then turn on the power.

B. BIOS Error Message –

**BIOS error message appears when my VESA PC starts**

If the BIOS error message appears, press any key to resume or, hit <DEL> to enter the BIOS setup main menu, follow these steps:

1.   Press <DEL>, and the BIOS Setup main menu appears, check if HDD is detected. If it is not detected, use Direction keys <↑↓> to choose "AUTO" and then go back to the main menu by pressing <ESC>. Move your cursor down with Direction keys <↓>, and choose "Save Settings and Exit", a message dialog appears as seen below, hit <Enter>.

       "Save current settings and exit (Y/N)? Y"

2.   Go to "Exit" menu using the Direction keys <↑↓> and choose the option "Load Optimal Defaults", then press <Enter>. A message dialog appears as seen below, hit "Y" key and presses <Enter> to save and recover to the factory setting.

    "Load Optimal Defaults (Y/N)? Y"
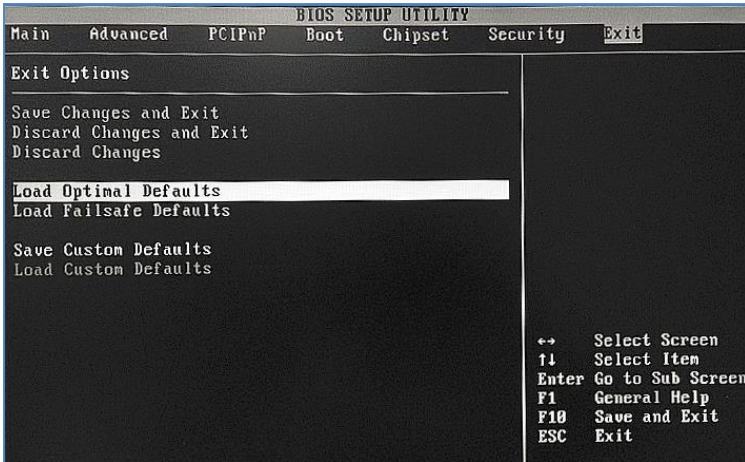
(BIOS Setup menu "Exit")

C. "Operating System Not Found" –

A message indicating that "Operating system not found" appear when the VESA PC starts (Windows won't start)

► Enter the BIOS setup main menu by pressing <DEL> key, make sure that the correct boot drive is enabled.

► If Windows still does not start, follow these steps to initialize the BIOS:
   1.   Turn off the EBOX-333x unit.
   2.   Remove any peripheral devices connected to the EBOX-333x unit.
   3.   Restart the EBOX-333x unit.
   4.   Press <**DEL**> to enter **BIOS Setup main menu** window.
   5.   Follow the steps as written in item **B. BIOS** error message.

► If you have just connected EBOX-333x Series to a CD/DVD or USB Drivers, remove these peripherals. And restart to confirm that the Windows operating system starts properly. If EBOX-333x unit continues to display the message "Operating system not found," and Windows does not start, please contact your nearest dealer for servicing.

Chapter*6*

Terms and Conditions

Warranty

The warranty terms for EBOX-333x Series are twelve (12) months from the shipped month. During the warranty period, DMP Electronics Will repair replace the product covered under this limited warranty.

Service and Support

DMP Electronics Inc. provides the technical support for hardware problems with your system throughout the warranty period. The technical support service is limited to configuration and operation of EBOX-333x Series sold by DMP Electronics Inc. The technical support service does not offer software tutoring or training.

Return Merchandise Authorization（RMA）policy

If the DMP staff or dealer determines that a part is defective. Purchaser must call our technical support service to obtain an RMA number before attempting to return any part. Please refer to your nearest dealer for

To obtain an RMA number, Purchaser must follow procedures as below：

1. Complete the DMP Electronics Inc. standard RMA Form and fax back to the RMA Department.
2. The RMA Number must be used within 7 DAYS
3. The RMA Number must be shown clearly on your shipping label.
4. DMP Electronics Inc. must receive all Returns before a replacement will be sent.
5. The repair cost depends on the parts, damage reasons, and whether under warranty period
    … etc. The Seller will charge the Purchaser in a reasonable price.
6. A copy of the invoice for the RMA product(s) will also be shipped to Purchaser.
7. The freight of return to DMP Electronics Inc. is charged to the Purchaser's account and
    accompanied by an RMA number. Any Returns with freight collect will be refused and returned to
    you. After Repairing, the cost of freight will be paid by Seller.
8. DMP Electronics Inc. must receive all returned goods within the warranty period.

Shipping Policy

The Purchaser must pre-pay shipping for any defective system or parts returned under the warranty. DMP Electronics Inc. shall not be liable for risk of loss or damage during shipment of your returned system or parts if you fail to insure the shipment.
All products must be shipped back to DMP Electronics Inc. in original or equivalent packaging. DMP Electronics Inc. will ship the repaired or replacement product(s) to the Purchaser by freight prepaid. Purchaser assumes the risk of loss. DMP Electronics Inc. shall not be responsible for failure of the delivery service to make on-time delivery.