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## OWNER'S RECORD

The serial number of this product is located at the rear panel of your eBox-2300SX series. Refer to the model and serial number when you contact your nearest dealer or DMP offices for services. The Model No. of this product is also indicated on the product label of your gift box as: eBox-2300SX, eBox-2300SX-H, eBox-2300SX-M and eBox-2300SX-JSK.

## SAFETY INFORMATION

### **WARNING**

- ▶ Do not expose eBox-2300 to rain or moisture, in order to prevent shock and fire hazard.
- ▶ Never install eBox-2300SX 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 adaptor and display monitor are disconnected.
- ▶ Locate eBox-2300SX 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-2300SX.
- ▶ When using eBox-2300SX, 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 not 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-2300SX, which is a simplified & an economical design of an embedded eBox-2300SX for Special Purpose Personal Computing. The basic specification of this product comprises of the x86 technology design, and with onboard 128MB System memory, Display, USB, Keyboard, PS2 Mouse, LAN, and Audio Interfaces.

### **DISTRIBUTION CONVENTION:**

1. This Product includes a gift box, an inner case, a PC, a Power adaptor, User's Manual, Utilities & Drivers CD, and IDE cable (standard eBox-2300SX configuration do not have the IDE 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 thereafter the expiration period of 3-days from the date of purchase.
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 a RMA number (RMA stands for Return Merchandise Authorization – please see the 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:**

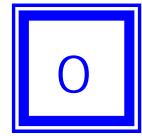
If there is other particular issue not listed in the above conditions, both parties agreed to follow the General Law of Commerce with fair and reasonable discussion in handling and resolving the argument.

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## UNPACKING YOUR EMBEDBOX

**Congratulation!** You have just acquired eBox-2300SX, the world's smallest and compact PC (See Figure 1), please check the following items:

### PACKING LIST FOR eBOX-2300SX SERIES

Item	Description	Q'ty
①	eBox-2300SX VEA PC	1
②	Max. 15-watts External Power Adaptor, Vin: 100~240VAC • 60/50Hz, 1.0A / Vout: +5.0~5.25VDC @ 3A max.	1

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

### CHECK BEFORE USE



**Figure 1**

## PREFACE

### eBox-2300SX: VESA PC



eBox-2300SX is a revolutionary device, that is especially designed for limited physical space and temperature concerns. No matter you are in a jammed office, a crowded place, or public transportation, it can be easily integrated with a VESA LCD to bring you eBox-2300SX access at any time.

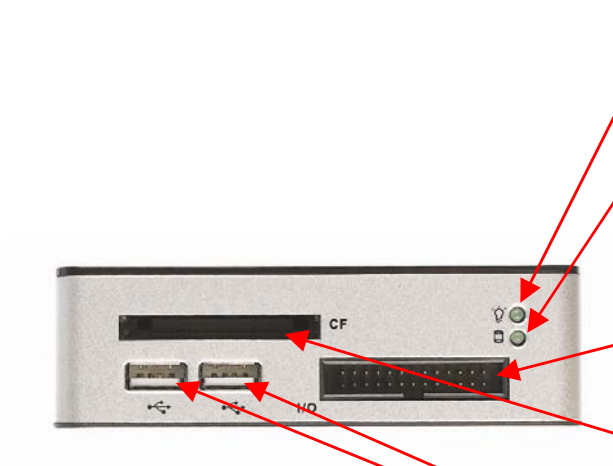
It can attach to any VESA mounting fixture, allowing it to be securely mounted onto desks, walls, or buildings, and thereby optimizes your work area. It can also attach directly to any size LCD for a mobile system for the use at trade shows, presentations, promotions, etc. Unlike traditional portable laptop design, the eBox-2300SX can be used with a large size LCD. Furthermore, with FANLESS design, eBox-2300SX 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 but at the same time uses less power consumption, then eBox-2300SX 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. eBox-2300SX is designed to fit this standard to make monitor attachment quick and easy.

## eBox-2300SX OVERVIEW

### Front Panel



#### Power LED

The power LED lights up, when system is turn on.

#### HDD LED

The HDD LED flashes when the system is working. Please do not turn off the system when HDD start running

#### GPIO (optional)

24-bit GPIO connector.

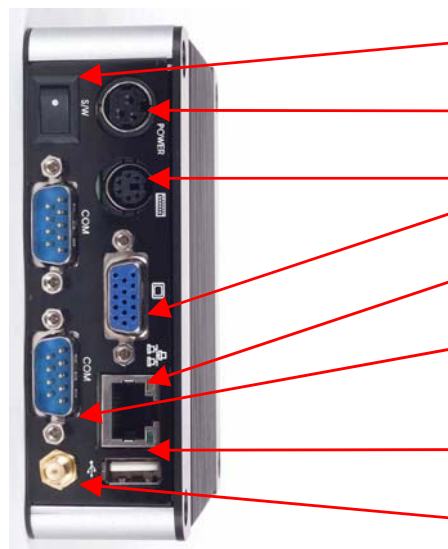
#### CF Slot

For connection to Device with CF Card and Micro Driver.

#### USB port

For connection to devices with USB interface(HDD, CD/DVD-ROM, Memory Stick, etc.)

### Back Panel



#### ▶ Power switch

#### ▶ DC Power Jack (3-pin)

#### ▶ PS/2 Keyboard or Mouse (6-pin)

#### ▶ VGA

#### ▶ RJ-45 LAN Jack

#### ▶ Serial Port (option for eBox-2300SX-JSK)

#### ▶ USB Port

#### ▶ Wireless Antenna connector (optional)

## ■ About Embedded CPU Board

### SYSTEM SPECIFICATION

#### CPU

Vortex86SX SoC (System on Chip)

#### Main Memory

128MB DDR2

#### BIOS

AMI BIOS

#### VGA

XGI Z9S with 32MB DDR2

Resolution up to 1,280x1,024 High Colors

#### Keyboard and Mouse

PS/2 Keyboard and Mouse

#### On-Board IDE

Enhanced IDE interface, 44-pin box header x 1

#### Peripheral

1. USB V2.0 (host) x 3
2. Serial port x2(available for eBox-2300SX-JSK)
3. 24-bit GPIO (available for eBox-2300SX-JSK)
4. MiniPCI socket (available for eBox-2300SX-JSK)
5. Type I/II CF Slot (Support Micro Driver)

#### Dimension & Weight

115 x 115 x 35 mm / 505g

#### Operating System

Suitable for –

Windows Embedded CE

DOS

Linux

## PERIPHERALS

### CONNECTING THE POWER ADAPTOR



#### Power Adaptor

To use eBox-2300SX immediately, take and use the supplied AC adapter as a power source. See the left diagram for visual connection.

Connect the DC power jack of the power adaptor to the DC Input jack of eBox-2300SX.



#### Turning ON eBox-2300SX

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

### CONNECTING THE MONITOR



#### VGA Connection

Depending on your choice of viewing, select a conventional CRT or the LCD VGA monitor.

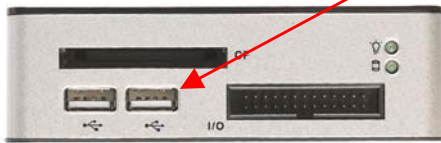
Make your connection by following the reference diagram from the VGA cable of your cable to the 15-pin D-Sub VGA port of eBox-2300SX.

## PERIPHERALS

### CONNECTING THE USB

eBox-2300SX provides USB port (Two in front & one at the back).

#### Front cabinet



#### USB Ports

The second USB port is available for connection to USB devices.

### CONNECTING SPEAKER/EARPHONE AND LAN



#### Connecting to LAN

There is an available RJ-45 LAN jack for connection to the hub of your intranet; and via your server for internet service (see diagram for RJ-45 LAN jack).

## CONNECTING THE KEYBOARD AND MOUSE



PS/2 Keyboard or Mouse (6-pin)

The PS/2 Port is available for connect Keyboard or Mouse.

## CONNECTING SERIAL PORT



Serial Ports

The serial port is usually connected to a serial device like modem (option for eBox-2300SX-JSK)



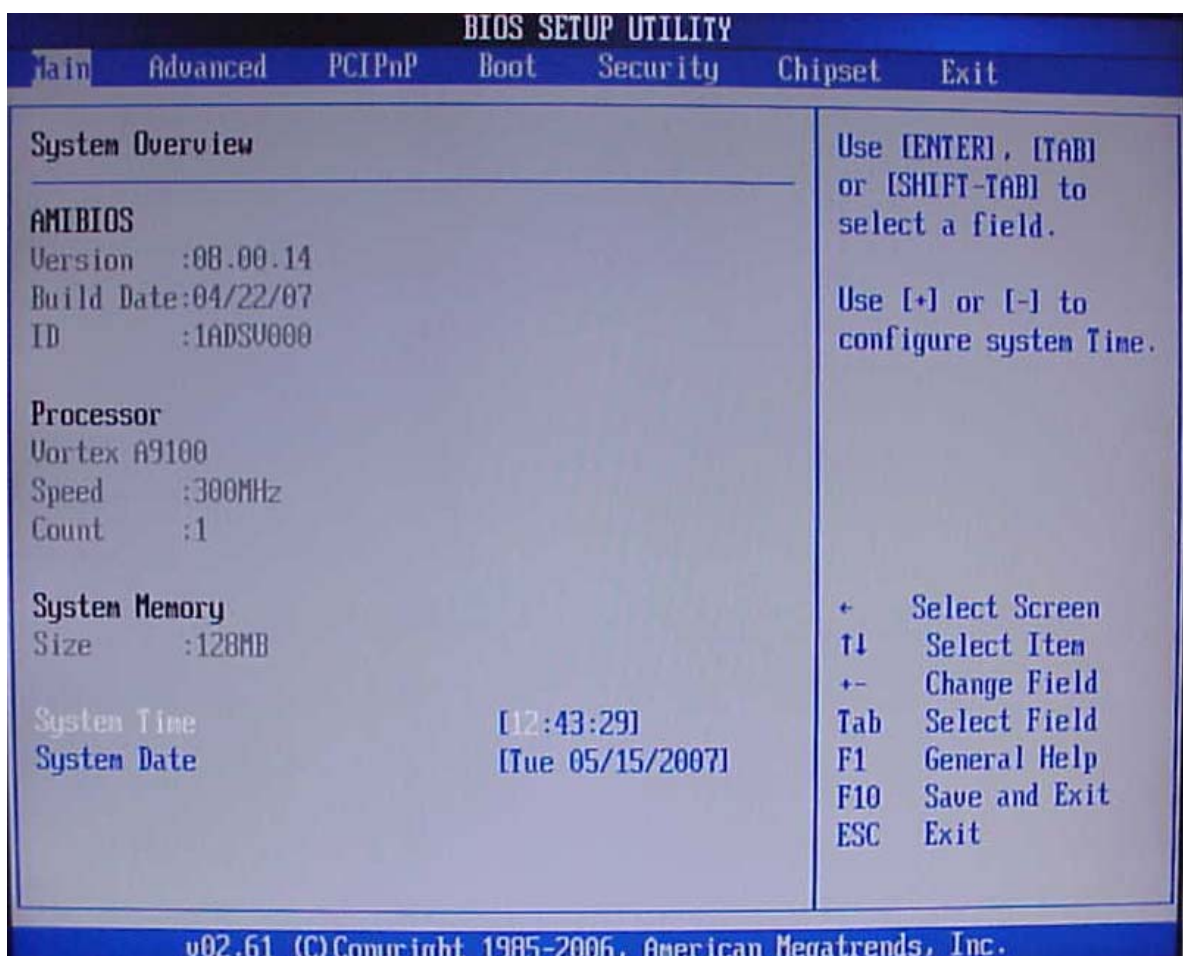
GPIO Ports

24-bit GPIO port  
(option for eBox-2300SX-JSK)

## BIOS

### RECONFIGURING eBox-2300SX

1. Take note that AMI BIOS is used in the eBox-2300SX. To reconfigure the eBox-2300SX, depress or hit the <Del> key to enter your BIOS setup main menu.
2. Select from the menu, the desired setup for change.
3. Press <Esc> to go back to main menu.
4. Move "Exit" TAB and select "Save Settings and Exit", press "Y" to save the changes that you just made. eBox-2300SX will restart accordingly to your new setup.





## TECHNICAL SPECIFICATION

Features	Description
CPU	Vortex86SX SoC
BIOS	AMI BIOS
System Memory	Onboard 128MB DDR2
Expansion	1x Mini-PCI connector (option for eBox-2300SX-M)
<b>I/O</b>	
MIO	1 x EIDE (44-pin) 2 x RS-232**, 1x PS/2 for K/B or Mouse 1 x RJ-45 Ethernet Connector 1 x Type I/II Compact Flash slot
USB	3 x USB 2.0 Ports (two in front)
<b>Display</b>	
VGA	XGI Z9S with 32MB DDR2 External 15-pin D-type female VGA connector
Resolution	Up to 1280x1024
<b>Ethernet</b>	
Remote Boot ROM	Built-in boot ROM function
<b>Mechanical &amp; Environment</b>	
Power Requirement+	5V @ 1080mA
Operating Temperature <sup>0</sup>	0 ~ 60°C
Operating Humidity	0% - 90% relative humidity, non-condensing
Size (W x H x D)	115 x 115 x 35 mm
Weight	505g
Certification	CE,FCC

## TAKING CARE eBox-2300SX

This section gives you guidelines on using eBox-2300SX – Safe using, Storing and Handling.

### STORING

- ▶ Do not place eBox-2300SX 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
  - Ambient temperature of more than 95°F (35°C) or less than 32°F (0°C)
- ▶ Do not place other electronic device or electrical equipment near eBox-2300SX. The electromagnetic field of the eBox-2300SX may cause interference subjecting to malfunction.
- ▶ Provide adequate air ventilation (circulation) to prevent internal buildup of heat. Do not place eBox-2300SX 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-2300SX.
- ▶ Change of environmental temperature: Problems may occur when there is a sudden change of environmental temperature, or if the eBox-2300SX is brought directly from a cold location to a warm one, moisture may condense inside eBox-2300SX. Turn off eBox-2300SX, and contact your nearest dealer.
- ▶ Checking the surrounding appliance(s) before using eBox-2300SX. Since the eBox-2300SX 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-2300SX by a suitable distance away from the set.
- ▶ Do not drop the eBox-2300SX from the working table nor place heavy objects on top of the eBox-2300SX.

## USING CABLES FOR CONNECTION

- ▶ To avoid problem, use only the specified interface cables in your accessory bag. The supplier will not be responsible for the connection arising from the other unspecified peripheral equipment.
- ▶ Do not use cut or damaged cables for connection.

## CLEANING YOUR VESA PC

- ▶ Clean the eBox-2300SX with a soft, dry cloth or a soft cloth 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-2300SX.
- ▶ When a solid object falls or a liquid spills onto the eBox-2300SX, turn off the eBox-2300SX immediately and unplug the LAN and power cables. Contact a qualified person or your dealer to check the eBox-2300SX before you use it again.
- ▶ Always disconnect the power cord from the power source before cleaning the eBox-2300SX.

## TROUBLESHOOTING

This section describes the techniques of resolving some basic problems that you encounter when using eBox-2300SX. 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-2300SX 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-2300SX Overview”.
- ▶ When the eBox-2300SX 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-2300SX to malfunction for a while. If this happens, do not use the eBox-2300SX for at least one hour.
- ▶ When you have checked all the above guidelines and the eBox-2300SX does not work. Remove the power adaptor from the eBox-2300SX, unplug the power cord, and plug it in again. Then turn on the power.

#### B. BIOS Error Message –

##### BIOS error message appear when my VESA PC starts

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

1. Press <DEL>, and the BIOS Setup main menu appears, check if HDD is detected at “Pri Master”. If it is not detected, use “Sel” keys <↑↓> to choose “AUTO” and then go back to the main menu by pressing <ESC>. Move your cursor down with “Sel” 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 “Auto Configuration with Optimal Settings” using the “Sel” keys <↑↓>, then press <Enter>. A message dialog appears as seen below, hit “Y” key and press <Enter> to save and recover the factory setting.

“Load high default settings (Y/N)? N”

### C. “Operating System Not Found” –

A message indicating that “Operating system not found” appear when my VESA PC starts (Windows won’t start)

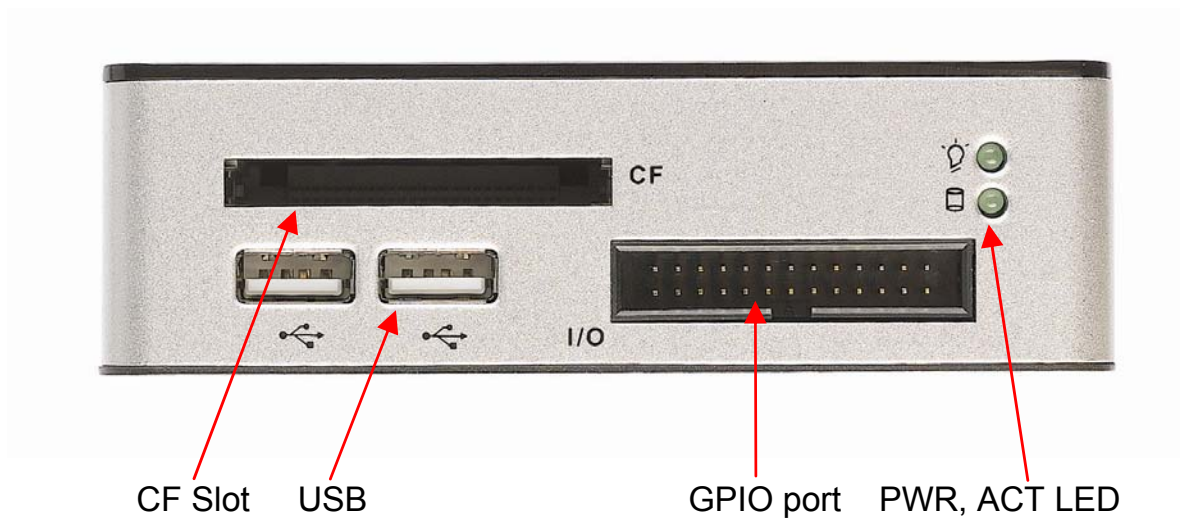
- ▶ Enter your BIOS setup main menu by pressing <DEL> key, be sure that your C: drive is enable.
  
- ▶ If Windows still does not start, follow these steps to initialize the BIOS:
  1. Turn off the eBox-2300SX.
  2. Remove any peripheral devices connected to the eBox-2300SX.
  3. Restart the eBox-2300SX..
  4. Press <DEL> to enter **BIOS Setup main menu** window.
  5. Follow the steps as written in item **B. BIOS error message**.
  
- ▶ **For eBox-2300SX** : If you have just connect eBox-2300SX to a CD/DVD or USB Drivers, remove these peripherals.. And restart eBox-2300SX to confirm that the Windows operating system starts properly. If eBox-2300SX continues to display the message ”Operating system not found,” and Windows does not start, please contact your nearest dealer for servicing.

ONBOARD CONNECTORS SUMMARY

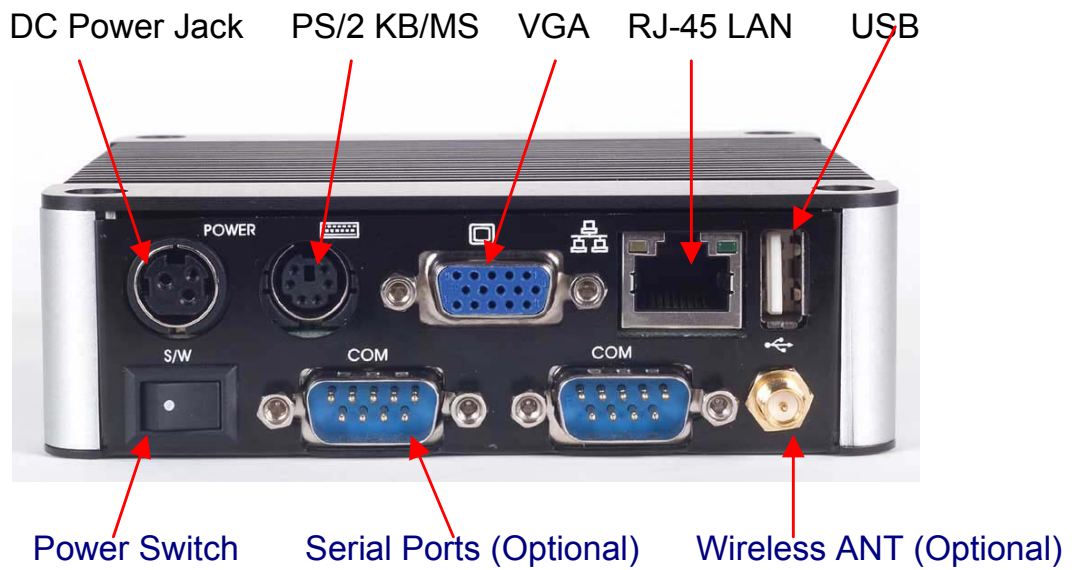
**SUMMARY TABLE FOR CPU BOARD**

Nbr	Description	Type of Connections	Pin nbrs.
J1	IDE connector	Box Header 22x2 2.0mm	44-pin
J2	CF Device Jumper	Close : Master	2-pin
J3	USB (Back)	USB Connector	8-pin
J4,J5	USB (Front)	USB Connector	8-pin
J6	JTAG		5-pin
J7	RST (Reset)	Hear 2x1 2.0mm	2-pin
J8	PS/2 keyboard or Mouse	Mini DIN Connector	6-pin
J10	GPIO	Box Header 23x2 2.54mm	26-pin
J9,J11	COM Port	Box Header 5x2 2.0mm	10-pin
J12	DC 5V Input	Mini-Din Connector	3-pin
J14:	Mini PCI	Mini PCI socket	124-pin
J15	VGA Connector	D-Sub Connector	8-pin
LAN	LAN	RJ-45	8-pin

► FRONT CONNECTORS OUTLINE FOR eBox-2300SX

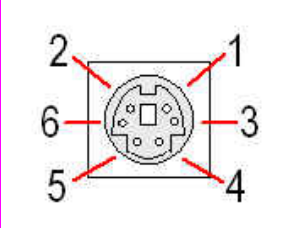


## ► REAR CONNECTORS OUTLINE FOR eBox-2300SX

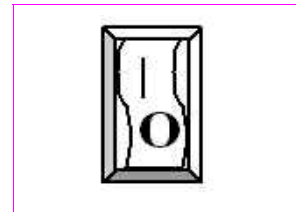


## ► PIN ASSIGNMENTS

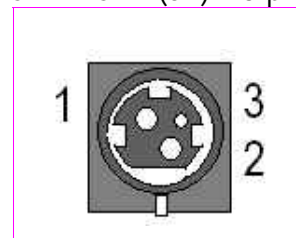
J8:PS/2 Keyboard or Mouse – 6-pin Mini-Din Connector

	<b>Pin #</b>	<b>Signal Name</b>
	1	KBCLK
	2	PMCLK
	3	GND
	4	KBDAT
	5	PMDAT
	6	SB5V

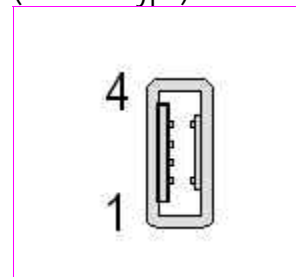
Power SW – Push Button Switch

	<b>Pin #</b>	<b>Status</b>
		ON
	○	OFF

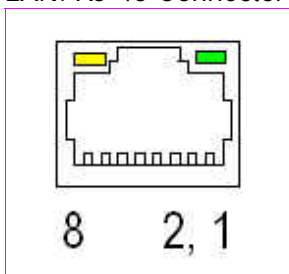
J12: DC-IN (5V) – 3-pin Mini-Din Lock Pin Socket

	<b>Pin #</b>	<b>Signal Name</b>
	1	VCC
	2	GND
	3	NC

J3: USB (90°)– 4-pin USB Type 1 Connector (Vertical Type)

	<b>Pin #</b>	<b>Signal Name</b>
	1	VCC
	2	USB0-
	3	USB0+
	4	GND
	5	GGND
	6	GGND

LAN: RJ-45 Connector

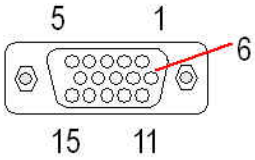
	<b>Pin #</b>	<b>Signal Name</b>	<b>Pin #</b>	<b>Signal Name</b>
	1	FTXD+	2	FTXD-
	3	FRXIN+	4	NC
	5	NC	6	FRXIN-
	7	NC	8	NC



## ► PIN ASSIGNMENTS

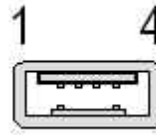
J15: VGA – 15-pin D-Sub Connector

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



J4,J5:USB (USB2): For connection to external USB device –4-pin USB Type 1 Connector (H)

Pin #	Signal Name
1	VCC
2	USB2-
3	USB2+
4	GND
5	NC
6	NC



J10 : GPIO

Pin #	Signal Name	Pin #	Signal Name
1	VCC	2	GND
3	GP10	4	GP00
5	GP11	6	GP01
7	GP12	8	GP02
9	GP13	10	GP03
11	GP14	12	GP04
13	GP15	14	GP05
15	GP16	16	GP06
17	GP17	18	GP07
19	GP34	20	GP30
21	GP35	22	GP31
23	GP36	24	GP32
26	GP37	26	GP33

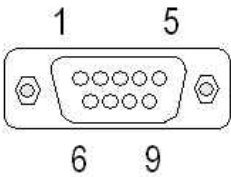
LEDS: POWER ON/OFF & HDD R/W

LED Color	State
Green	Power On
Red	HDD On
Red Flashes	HDD R/W



J9,J11: COM - 9-pin Dsub Connector

Pin #	Signal Name	Pin #	Signal Name
1	DCD1	2	RXD1
3	TXD1	4	DTR1
5	GND	6	DSR1
7	RTS1	8	CTS1
9	RI1	--	--



## TERMS AND CONDITIONS

### 1. Warranty

The warranty terms for eBox-2300SX are twelve (12) months from the beginning on the date of invoice. During the warranty period, DMP Electronics Will repair replace the product covered under this limited warranty.

### 2. 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-2300SX sold by DMP Electronics Inc. The technical support service does not offer software tutoring or training.

### 3. 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 is depends on the parts, the 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 Media Stream Tech. is charges to Purchaser 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.

### 4. 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 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.

MEMO

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