

# MoDT

Cool Stuff is Hot Stuff, MoDT is the Right Stuff

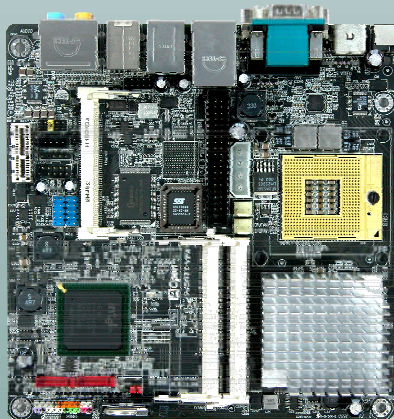


## MoDT Flex 945

Enable the Power of Flex ATX Form Factor

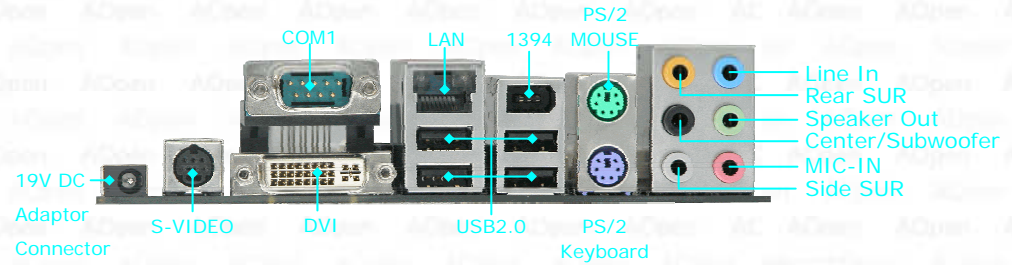


**i945Gt-VFA**



**i945Gm-FA**

MoDT is initiated by AOpen since 2004



- 1394 connector
- Realtek HD audio codec
- JLED2
- Front audio connector
- CD Audio in connector
- PCI Express x1 slot
- COM 2 Connector
- S/PDIF Connector
- JLED1
- USB2.0 Connectors
- Mini PCI slot
- S-ATA connector
- Front Panel connector

- Chrontel 7307C DVI DEC
- IDE Connector
- intel PCIe Gigabit Lan Chip
- 4 Pins 5V DC Power Out
- 479 Socket for Yonah CPU
- BIOS with AWARD support
- CPUFAN
- SYSFAN
- SODIMM x 2
- Super IO—Winbond
- Boot LED
- Standby LED
- intel 945GT/945GM
- intel ICH7MDH/ICH7M
- JP14 CMOS clear jumper
- Battery

Picture i945Gt-VFA



Accessories List in MoDT Flex 945

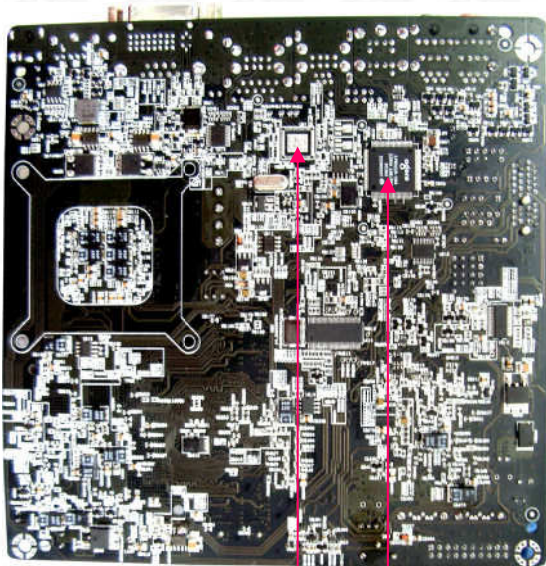
AOpen reserves the right to revise all the specifications and information contained in this document, which are subject to change without notice.



EASY Installation

EASY Installation Guide





Realtek Gigabit Lan placement  
Agere 1394

**Picture i945GTt-VFA**

MoDT Flex 945 is Mobile on Desktop solution. The main features it brings:”

**Energy saving**



It consume low energy which is half power needed in Intel 775 MB. That can help you to save 90W around while you use it. And since it save energy so it can save you money.

**Silent**



With superior design, the noise level can be control under 28 dB which meet your silent & quiet environment. Also intel speed stepping technology can keep silent well.

**AV—Multimedia**



With 945GT/GM, it delivers high performance to users. HDTV and high quality of audio which MoDT Flex 945 will give you extreme AV experience.

**Cool**

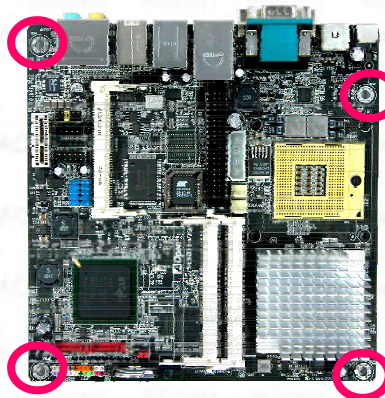


By using **Mobile on Desktop** technology. One can enjoy cool & comfortable experience on Flex 945. Keep your system with stable and long life.

**MoDT Flex 945 Specification Table**

Model Name	i945GTt-VFA	i945GMt-FA
Form Factor	Flex ATX	
PCB Size	170mm x 170mm	
CPU	Yonah Core Duo & Core Solo	
CPU Socket	479 Socket	
Chipset	945GT + ICH7MDH	945GM + ICH7M
Memory type	Dual Channel DDR II 667/533	
Memory slot	SODIMM DDR II x 2	
Memory Max. size	Maximum 2GB	
DVI Chip	Chrontel 7307	
Ethernet LAN Chip	Intel 83573L G LAN	Realtek PCIe G LAN
Audio Chip	Realtek ALC882D 7+1 audio channels	
Firewire 1394	Agere FW3226-1394A	
Rear Connectors	DVI x 1, s-VIDEO x 1 Ethernet LAN x 1, COM x 1 Azalia Audio Rack x 1 USB2.0 x 4, 1394 x 1, PS/2 x 2 19V DC in x 1	
On board Slots & Internal Connectors	Socket 479, SODIMM DDRII x 2 PCIe * 1 x 1, s-ATA x 2, Firewire - 1394 x 1 CD-In x 1, Cooling fan x 2, Panel x 1 IDE x 1, USB2.0 x 4, COM x 1, Front Audio x 1, 12V/5V DC OUT- 4PINs Power connector x 1	
O.S.	Window XP/ Window MCE	
Power	90 W AC-DC Adaptor	

MoDT Flex 945 is Flex ATX form factor. It is 170mm width x 170mm height. Flex ATX comes from mATX, it has same



size of rear panel specification with mATX & ATX and it's four screw holes—left picture. The holes' position and size are also same with mATX & ATX. You can put it exactly into ATX or mATX chassis. But we recommend that you can find a suitable chassis for Flex ATX. Since small is MoDT Flex 945 designed to be.

Before you start to make Hardware installation, please make sure no power is connected

**HARDWARE INSTALLATION**

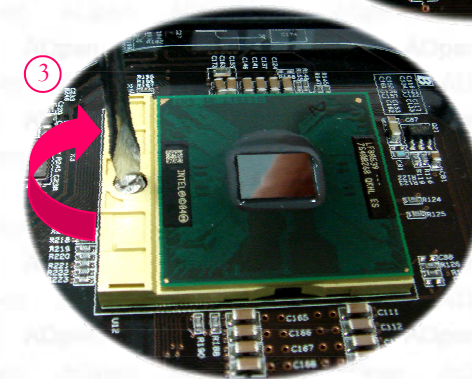
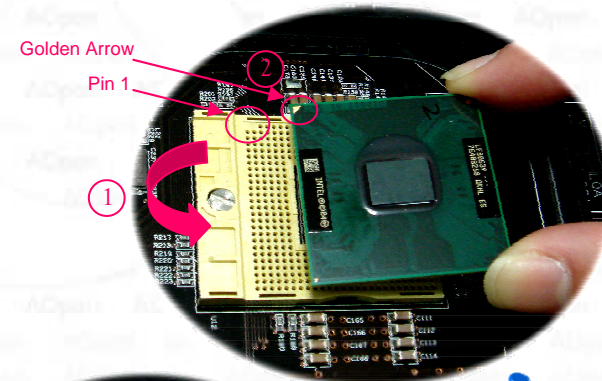
1

**CPU Installation**

MoDT Flex 945 support Intel® Core™ Duo & Core™ Solo processor. The Intel® Core™ Duo processor and the Intel® Core™ Solo processor are built on Intel's next generation 65 nanometer process technology with copper interconnect. The Intel Core Solo processor refers to single core processor and the Intel Core Duo processor refers to dual core processor.

Start to install CPU. Find the position of CPU socket. This socket support uFCPGA package CPU, which is the latest Intel® Core™ Duo & Core™ Solo processor.

1. Unscrew socket screw counter-clockwise
2. Locate the **Pin 1** in the socket and look for a **golden arrow** on the CPU upper interface. Match Pin 1 and golden arrow. Then insert the CPU into the socket.
3. Lock the socket screw clockwise to fasten CPU



**Note:**  
1. When unscrewed the socket, the socket will horizontally shift.  
2. When screw the socket. You will hear a slight sound "Dock". That means you already installed CPU successfully.



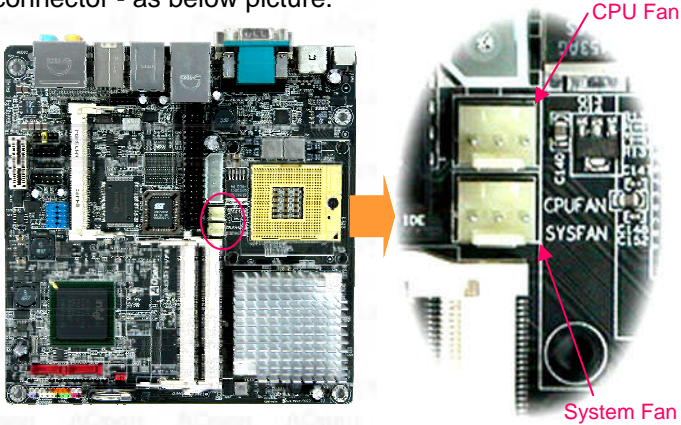
Processor Number	Architecture	Clock Speed	Front Side Bus	Cache	Ratio
Core Duo T2700	65nm	2.33GHz	667MHz	2MB L2	14
Core Duo T2600	65nm	2.16GHz	667MHz	2MB L2	13
Core Duo T2500	65nm	2GHz	667MHz	2MB L2	12
Core Duo T2400	65nm	1.83GHz	667MHz	2MB L2	11
Core Duo T2300	65nm	1.66GHz	667MHz	2MB L2	10
Core Solo T1400	65nm	1.83GHz	667MHz	2MB L2	11
Core Solo T1300	65nm	1.66GHz	667MHz	2MB L2	10

**Note:** With CPU speed changing rapidly, there might be faster CPU on the market by the time you received this installation guide. This table is kindly for your references only.

Above table is Intel® Core™ Duo and Core™ Solo CPU numbers and simple specification for your reference only.

## 2 CPU Cooler & System Fan Installation

Find the CPU fan power connector and system fan power connector - as below picture.



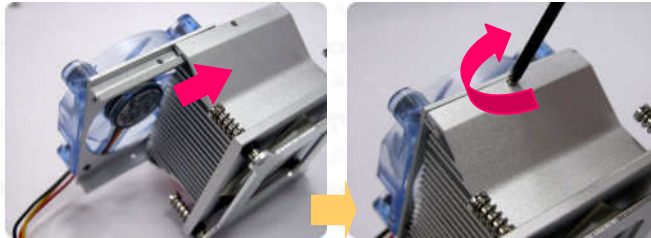
**Install the SYSTEM FAN** Connect your system Fan power with above "SYSFAN" connector. Be care of the direction of fan power connector, it has anti-direction stick on it. Please make your system fan power connect correctly with it.

### Install the CPU FAN

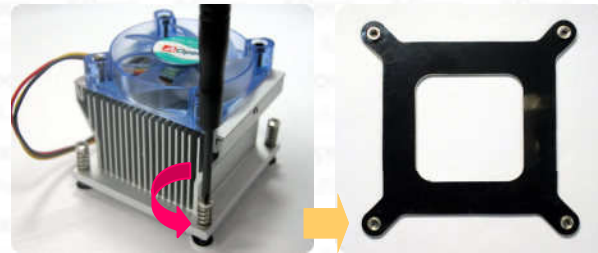
1. Please check the all parts are in the CPU cooler's box. And take them out. ( If you don't have any of them, please contact with local AOpen technical support team.



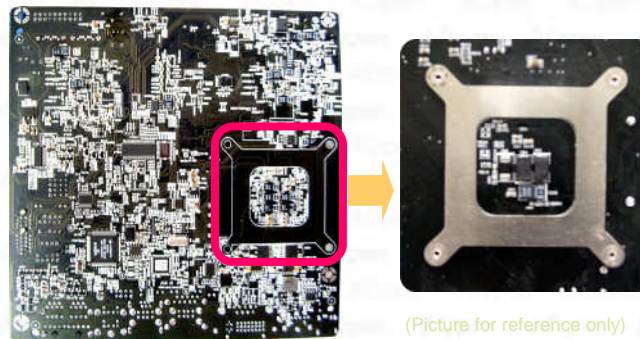
2. Insert CPU FAN into the top of CPU heatsink. After that please lock the screw between the CPU FAN and CPU heatsink. ( as pictures below )



3. Remove the four screws of the CPU heatsink and take the bracket from heatsink.

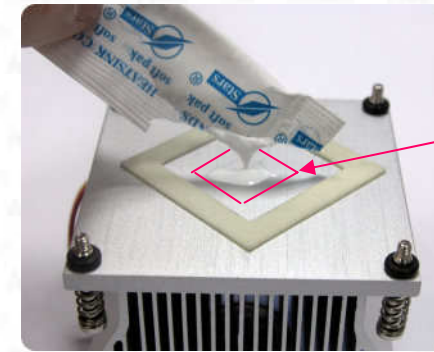


4. Place bracket properly on the back side of MoDT Flex 945 as picture.



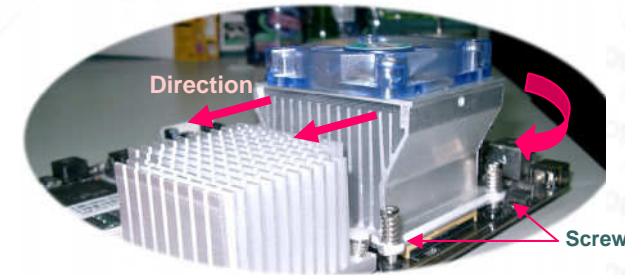
(Picture for reference only)

5. Smear over the thermal compound under the center of heatsink smoothly and let it be well mixed.



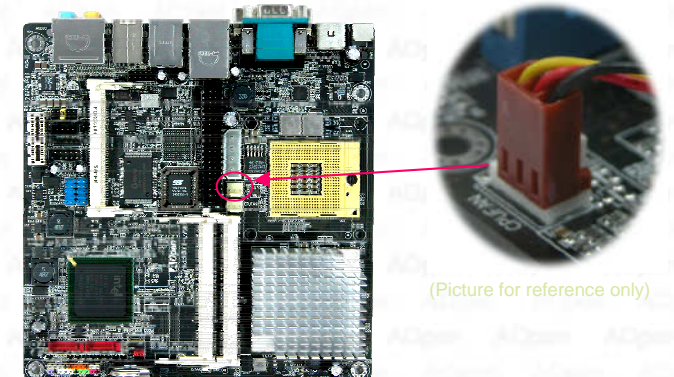
**Note**  
The thermal compound should not paste too much on the heatsink. Please paste with left red area around (recommend). The compound thin with 1 ~ 2mm will be better.

6. Put the CPU Fan & heatsink on the processor and lock the four screws of the heatsink with bracket. (on the MB back side) Please make sure the screws are well tied between the motherboard and heatsink. Notice the CPU Fan & heatsink must have direction as below picture. Keep the heatsink direct the air flow to North bridge's heatsink. That can help to get good thermal in system operation.



(Picture for reference only)

7. Plug the CPU fan power into "CPUFAN" connector properly.



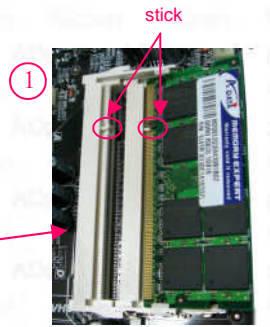
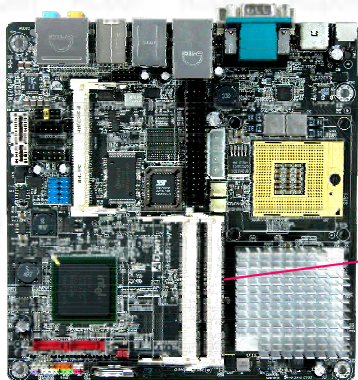
(Picture for reference only)



### 3

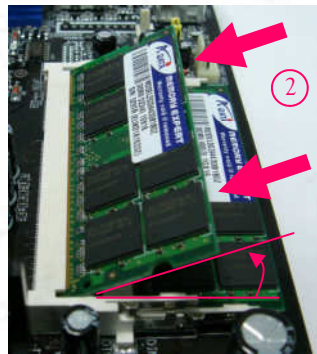
## Memory Installation

MoDT Flex 945 provide SODIMM type memory support. There're two SODIMM memory slots which Flex 945 provided. The installation of memory module as below



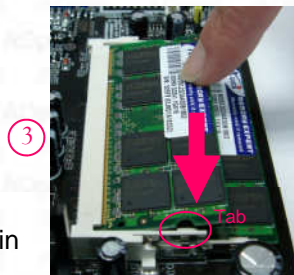
(Picture for reference only)

1. Put the memory module with correct direction. Notice there's one stick to make sure direction is correct.



(Picture for reference only)

2. Plug in memory module into SODIMM slot with angle 20~30°. Make sure memory module plug into slot completely.



(Picture for reference only)

3. There're tabs which located in the side of SODIMM holder. Use finger to push memory module vertically until the tabs lock memory module tightly.



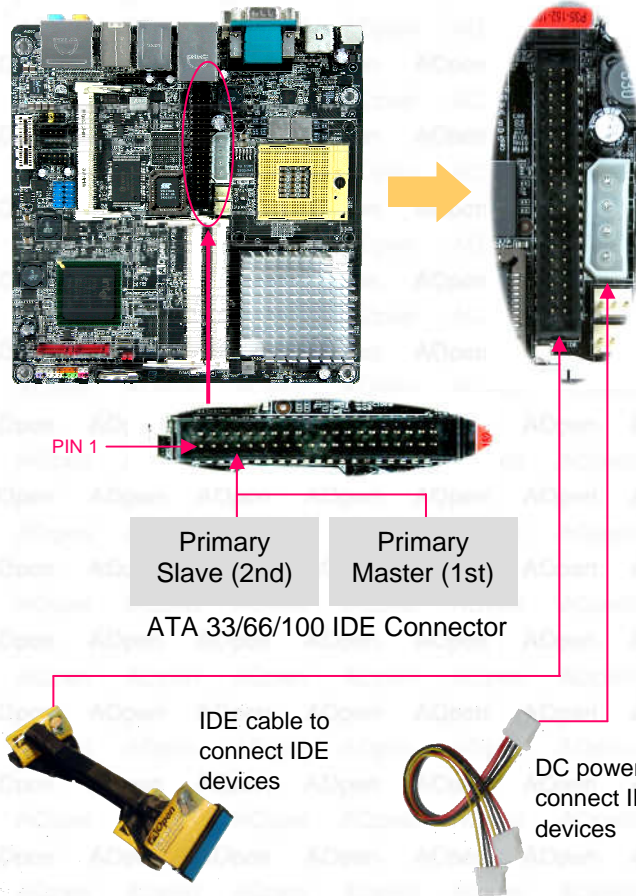
(Picture for reference only)

4. Now, the memory modules have been plugged properly with horizontal flat.

### 4

## IDE Installation

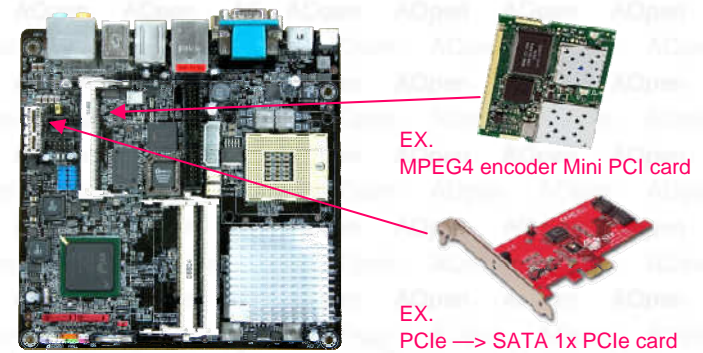
MoDT Flex 945 provides one IDE connector which allow you to connect two ATA 33/66/100 IDE devices like HDD.



### 5

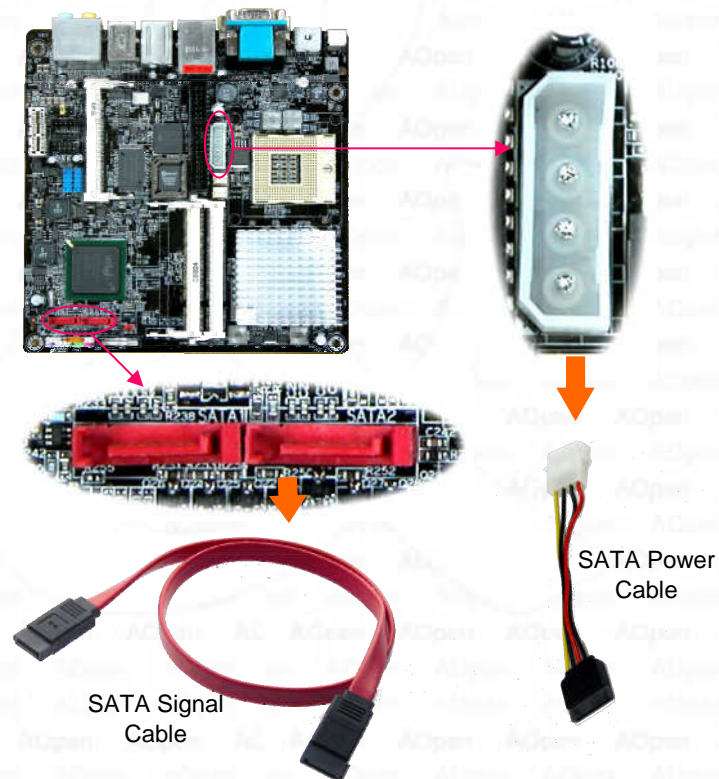
## Mini PCI and PCIe x1 Installation

MoDT Flex 945 provides one Mini PCI slot and one 1x PCIe slot for users to upgrade his PC functions. Now, the Mini PCI can have digital TV tuner and Video MPEG4 decoder card ...etc for expansion. The 1x PCIe cards have sATA and Firewire and USB cards ... etc for expansion.



### 6

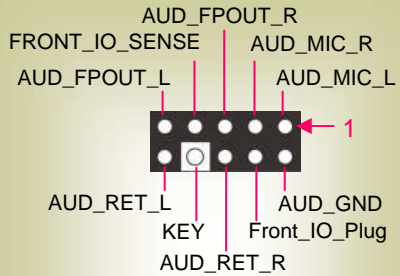
## SATA Installation



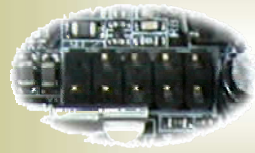
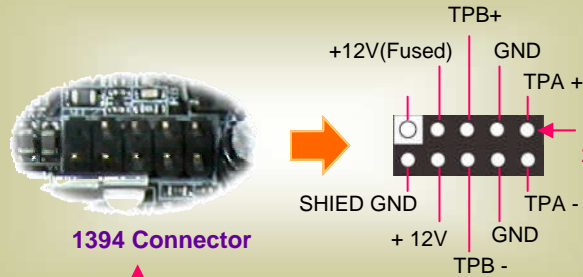
MoDT Flex 945 provides two SATA connectors. i945GTt-VHL has raid function on it as well. But i945GMt-HL do have SATA only.

Connect SATA cable to the on board SATA connector. You can find SATA cable in our package. (this is SATA signal cable) And please also connect 5V power connector with SATA power cable.

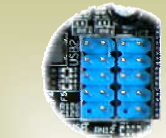




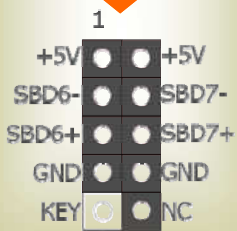
Front Audio Connector



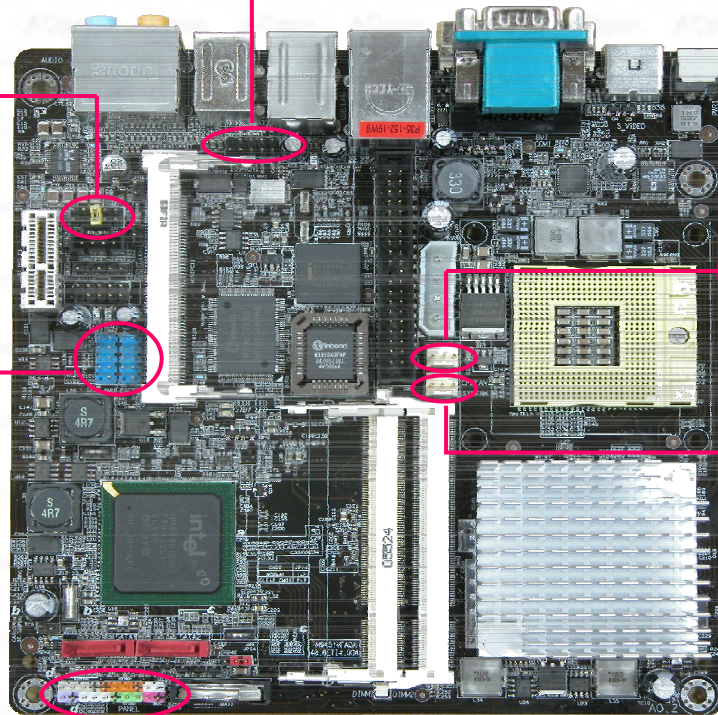
1394 Connector



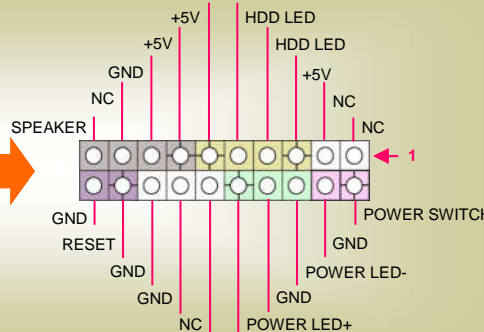
USB2.0 Connector



USB 2.0 Connector



Front Panel Connector



The **MoDT Flex 945** board design provides:

Parts	Voltage	Current	Power
CPU	1.3x V	43A Max.	60W Max.
Memory	1.8 V	9A Max.	16.2W Max.
North & South Bridge	1.5 V	12A Max.	18W Max.
DC 5V devices	5 V	10A Max.	50W Max.
DC 12V devices	12 V	3A Max.	36W Max.

The power consumption — 60 W provides basic system configuration as below

- i945GT-VFA Flex ATX board
- Intel® Core™ Duo CPU T2600 x1
- 256MB SODIMM memory Module x 2
- IDE 3.5" hard disk x 1
- USB keyboard x 1
- USB Mouse x 1
- CPU Fan + Heatsink x 1



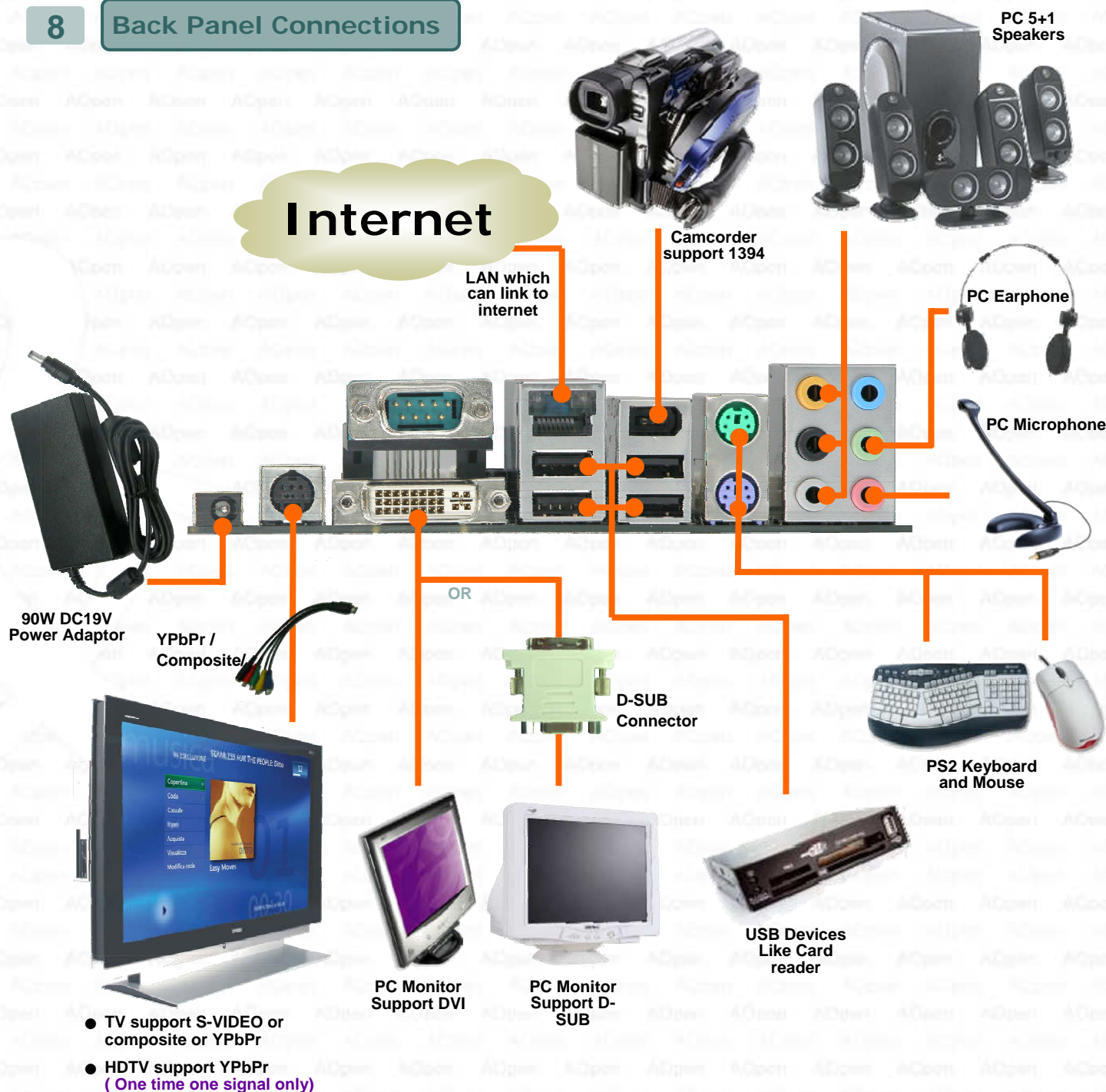
**MoDT Flex 945** had bundle one **90W** AC to DC power adaptor, it's specification as

- INPUT AC100-240V ~1.5A
- OUTPUT DC 19V—4.74A

**NOTE**

Please notice on the power, AOpen **MoDT Flex 945** provided, is **90W** AC-DC adaptor. And the board can offer 180W to connect different peripherals. But it needs to be careful while connecting many peripherals and cause power over 90W. It will causes the system cannot boot-up or cannot work smoothly base on the loading your system has. If your system over 90W please change it to bigger power supply:19V AC-DC adaptor.





## 8.1 VGA & Video Support

MoDT Flex 945's Graphic/Video Output as left pictures. It supports DVI-I connector. But there's DVI to D-SUB connector bundle which allows you to connect D-SUB monitor. Also, it provided a S-VIDEO connector in back side which allows you to connect Video consumer electronics. MoDT Flex 945 has "S-VIDEO to YPbPr/Composite" cable which can link TV or HDTV or DVD recorder.

Notice: YPbPr/S-VIDEO/Composite. These three video signals can act one time one signal since common source. Users cannot connect it together to show video.

**PC graphic resolution table**

Resolution	Color depth
1600 x 1200	256/ 16bit/ 32bit
1280 x 1024	256/ 16bit/ 32bit
1024 x 768	256/ 16bit/ 32bit
640 x 480	256/ 16bit/ 32bit

### PC Graphic resolution support

Maximum : 1600 x 1200 x 32bit

### Video resolution support

HDTV: 480p/720p/1080i/1080p  
TV video resolution support

### Special resolution 16:9 support

AUO 32" 16:9 Panel: 1366 x 768  
(Users need to check with your TV panels vender about it)

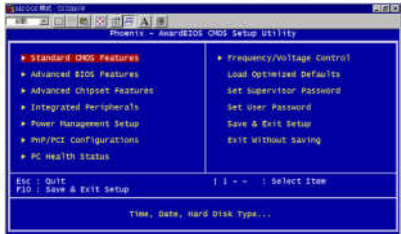


# SOFTWARE INSTALLATION

## 1 BIOS Setup when 1st Power On



After finish the setting of jumpers and connect correct cables. Power on and enter the BIOS Setup, then press <Del> during POST (Power On Self Test). Choose "Load Optimized Defaults" for recommended optimal performance.



## 2 Drive Installation

After you install window XP, please insert AOpen Bonus CD to start on Driver installation



After you insert AOpen Bonus CD, it will automatically show below "Ezinstall" screen.

- Install driver
- Install utility
- Browse CD Contents
- Readme
- Exit CD
- Click to install online manual
- AOpen branches information

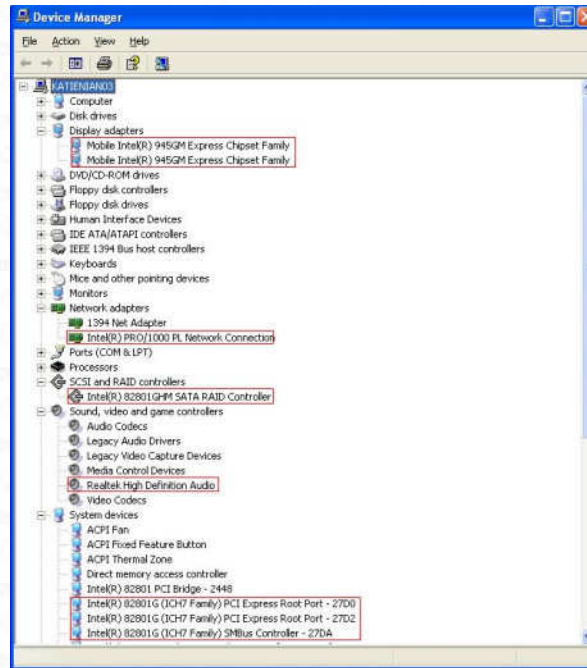


Use "mouse pointer" to Tab "Install Driver", then click left button of mouse on it. Ezinstall will have "Install Driver" page come out as below

Please check the items of driver which it shows. In default, it will select all necessary driver in the list. After check, please use "mouse pointer" to click button "GO".



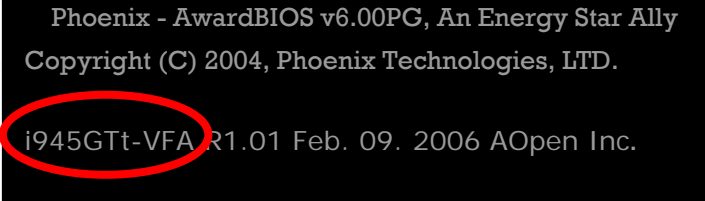
The "Ezinstall" will take you minutes on install driver for you. Do not click other functions during the process of driver installation. While complete driver installation. It will automatically show "Reboot". Please choose button "YES". System will reboot and enter window O.S. Below is "window device Manager", you can check driver are installed properly.



EX. i945Gt-VFA device manager picture

## Model Name and BIOS Version

Model name and BIOS version can be found on upper left corner of first boot screen (POST screen). For example:



i945Gt-VFA is model name of motherboard; R1.01 is BIOS version

## Register Your Motherboard

Thanks for choosing AOpen product, please take time to register the product registration, <http://club.aopen.com.tw/productreg/>. This will ensure that you can receive the most updated information from AOpen in the future. Please prepare the following information before you start: **Model Name, Part Number (P/N), Serial Number (S/N) and Purchase Date.** The Part Number and Serial Number are printed on the bar code label. You can find this bar code label on the outside packing or on component side of PCB. For example:



Part No. Serial No.

P/N: 91.88110.201 is part number, S/N: 91949378KN73 is serial number.

## Phoenix-Award BIOS Error Message

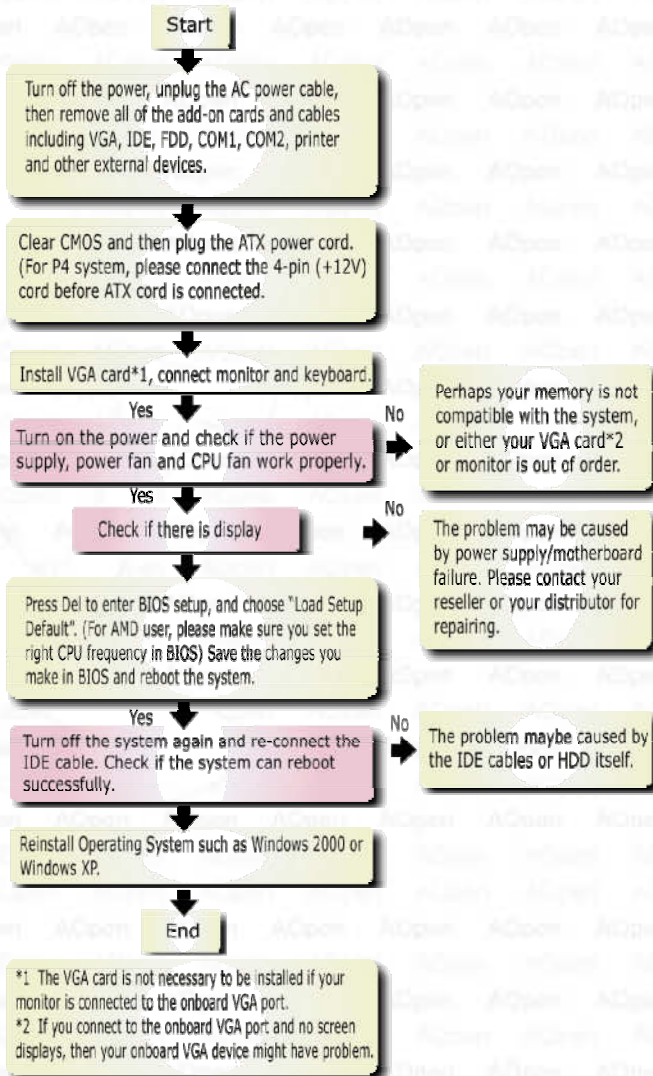
Beep Sound	Message
1 short (Beep)	System booting is normally.
1 long - 1 short (Beep)	DRAM error
1 long - 2 short (Beep)	Display Card connected error Monitor Connected error
1 long - 3 short (Beep)	Keyboard error
Long (Beep) continuous	DRAM hasn't insert correctly.





## Trouble Shooting

If you encounter any trouble to boot your system, follow the procedures accordingly to resolve the problem.



## Technical Support

Dear Customer,

Thanks for choosing AOpen products. We invite you to register at <http://www.aopen.com> to become a Gold Member of Club AOpen so as to ensure quality service in the future. In order to maintain the best service to every customer of us, we recommend you to follow the procedures below and seek help from our branches according to the region you buy the product. With your help, we can then continue to provide efficient and the best quality service to every customer.

Thanks very much for your understanding!

AOpen Technical Supporting Team

### Europe

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Email: [Support@AOpen.NL](mailto:Support@AOpen.NL)

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### Pacific Rim

AOpen Inc.  
Tel: 886-2-3789-5888  
Fax: 886-2-3789-5899

### Japan

AOpen Japan Inc.  
Tel: 81-048-288-0988  
Fax: 81-048-288-0955

### AOpen Channel technical support web Address

#### Europe

<http://www.aopen.nl/tech/default.htm>

#### Pacific Rim

<http://www.aopen.com.tw/tech/default.htm>

#### China

<http://www.aopen.com.cn/tech/default.htm>

#### Germany

<http://www.aopen.de/tech/default.htm>

#### America

<http://usa.aopen.com/tech/default.htm>

#### Japan

<http://aopen.jp/tech/index.htm>

Online Manual: To download manual, please log on and then select **your** preferred language. Under "Type" directory, choose "Manuals" to go to our manual database. You can also find the manual and EIG in AOpen Bonus Pack.  
<http://download.aopen.com.tw/>

Test Report: **We** recommend you to choose board/card/device from the compatibility test reports for assembling your PC. It may prevent incompatibility problems.  
<http://global.aopen.com.tw/tech/report/default.htm>

FAQ: Here **we** list problems that users often encounter and FAQ (Frequently Asked Questions). You may select your preferred language after log on, and may be able to find a solution to your problem.  
<http://club.aopen.com.tw/faq/>

Download Software: After log on and having language selected, **you may** get the latest updated BIOS/utility and drivers you **need** under "Type" directory. In most case, newer versions of drivers and BIOS have solved earlier bugs or compatibility problems.  
<http://download.aopen.com.tw/>

eForum: AOpen eForum is provided to discuss our products with other **users**, in which your problem probably had been discussed before or will be answered. After log on, you may select your preferred language under "Multi-language".  
<http://club.aopen.com.tw/forum>

Contact Us: **Please** prepare detail system configuration and error symptom before contacting us. The part number, serial number and BIOS version are also very helpful.

Contact Distributors/Resellers: We sell our products through **resellers** and integrators. They should know your system configuration very well and should be able to solve your problem efficiently and provide important reference for you.