Single Board Computer

SBC2516

User's Manual

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Acknowledgements

Regulatory Compliance Statements

This section provides the FCC compliance statement for Class A devices and describes how to keep the system CE compliant.

FCC Compliance Statement for Class A Devices

The product(s) described in this user's guide has been tested and proved to comply with the limits for a Class A digital device, pursuant to Part 15 of 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 user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area (domestic environment) is likely to cause harmful interference, in which case the user will be required to correct the interference (take adequate measures) at their own expense.

CE Certification

The product(s) described in this user's guide complies with all applicable European Union (CE) directives if it has a CE marking.

Table of Contents

Chapter 1
General Information

1.1Features

- **Socket 478 Intel® Pentium® 4 processor up to 3.2GHz with 800MHz FSB**
- **Intel® 865G/ICH5 chipsets**
- **Max. 2GB DDR 400/dual channel memory in 2 DIMM slots**
- **Integrated VGA, CRT connector x 1**
- **Intel 82547EI gigabit Ethernet controller in CSA port and Intel 82551QM 10/100 Ethernet controller**
- **Serial ATA port (150MB/s) x 2/USB 2.0 port (480Mbps) x 2**

1.2 Specifications

System Architecture

- Full size SBC with PCI/ISA golden finger.
  - DVI 1.0 compliant (optional)
  - PICMG 1.0 (Rev.2.0) compliant
  - USB 2.0 compliant

CPU Support

- Intel® Pentium® 4 processor with 256K/512K L2 cache on die
- mPGA478 socket supports 400/533/800MHz system bus; CPU speed up to 3.2GHz – Support Hyper-Threading™ technology

Main Memory

- DDR SDRAM DIMM x 2 support maximum 2GB (DDR 266/333/400) of memory – Support two 64-bit DDR channels, 3.2GB/s bandwidth per channel
- Supports no Registered /non-ECC DIMMs only

BIOS

- Award System BIOS
- Plug & Play support
- Advanced power management support
- ACPI 1.0b compliant
- 4M bits flash ROM

Chipsets

- Intel® 865G (GMCH) chipsets
- Intel ICH5 for south bridge (I/O controller hub)
- Firmware hub (FWH) 4Mbits flash ROM x 1
- PCI V2.3 compliant

On Board LAN

- Intel 82547EI gigabit Ethernet controller (dedicated by CSA port directly from the Intel 865G GMCH) and Intel 82551QM 10/100 Ethernet controller x 1 for SBC2516
- Compliant with PCI V2.1/V2.2, IEEE802.3, IEEE 802.3u, IEEE802.3x, IEEE802.3y, IEEE8023ab – WfM 2.0, PC2001 compliant
- RJ45 with LED connector x 2

On Board VGA

- Intel 865G (GMCH) chipset integrated with graphics controller
- Hardware motion compensation assist for software MPEG/DVD decode
- Access system memory
- Fully PC 98 and PC 99 compliant
- 15 pin CRT connector x 1

On Chip I/O (ICH5)

- On board USB port x 2, USB 2.0 compliant
- Ultra ATA100/66/33 support, 40 pin connector x 2. 2-pin power connector for DOM (Disk On Module)
- Serial ATA support, SATA connector x 2 ; data transfer bandwidth up to 150MB

On Board I/O

- ITE 8712F-A Super I/O
- SIO x 2, with 2x16C550 UARTs, 10 pin header x 2
- PIO x 1, bi-directional, EPP/ECP support, 26 pin connector x 1
- Floppy disk controller: 34 pin connector x 1
- 6-pin mini DIN connector x 1 for PS/2 keyboard/mouse, and 5-pin connector x 1 for external keyboard
- On board buzzer x 1
- GPIO (4 in 4 out)
- On board 2 –pin header for I^2C
- On board 5-pin header for IrDA
- On board 2-pin header for reset SW, 4-pin for speaker, 5-pin for keylock, 2-pin for IDE active LED, and 2-pin ATX power SW
- One 3-pin power header for 3-pin power cable connected to backplane board to support ATX Power On function.
- On board 4-pin additional power source input
- AC'97 output, 10 pin header x 1

System Monitor

-Derived from Super IO ITE 8712F-A to support system monitor

-8 voltage (For +1.5V, +3.3V, +5V, -5V, +12V, -12V, Vcore and +5VSTBY)

-Fan speed connector x 2 (one is for CPU, while the other is for system)

-Temperature sensor x 2 (one is for internal CPU, while the other is for external system)

Real Time Clock

-On-chip RTC with battery back-up

-External Li battery x 1

Watchdog Timer

-Watchdog timeout programmable by software from 1, 2, 4, 8, 16, 32... to 128 seconds

PCI to ISA Bridge & ISAMAX Support

-ITE 8888F x1 PCI to ISA Bridge –Provide 64mA driving capability to maximize ISA signals for supporting ISA cards up to 20 on the backplane ISA slot

Dimensions

-338.58mm(L) x 122mm(W) (13.3”(L) x 4.8”(W)

Power Requirements

-+5V, +12V, -12V, ATX/AT

Power Consumption:

Model	SBC2516 (G)	
CPU	3.0G	2.4G
+12V	6.5A	4.5A
+5V	5.4A	4A
+3.3V	0.5A	0.5A
+5Vsb	0.5A	0.5A

Environments

-Operating temperature: up to 60°C, below -20°C (under certain condition) –Storage temperature: -20°C to 80°C

-Relative humidity: 10% to 90% (Non-condensing)

Certification

-CE approval

–FCC

1.3 Board Layout

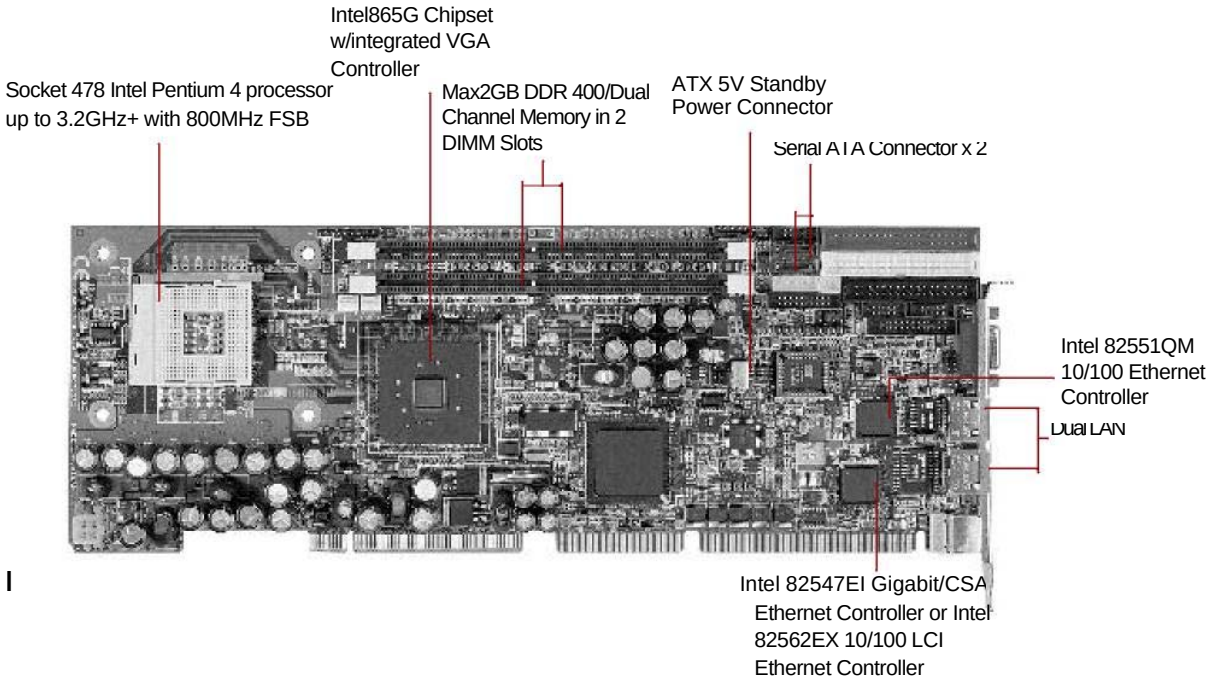


Figure 1-1: SBC2516 Front Layout

1.4 Checklist

After opening the package of SBC2516 Series, please check and make sure you have all of the following items:

- ✍ **One SBC2516 series SBC**
  (A mechanical drawing of this model is shown below.)
- ✍ **One SBC2516 Manual Guide**
- ✍ **One 50CM Cable JST 2.5mm 3 pin to 3 pin (5V standby ATX Power-on Cable)**
- ✍ **One Y Cable for Keyboard and Mouse**
- ✍ **One 180 mm AUX Power Cable (for J2)**
- ✍ **One Cable Set (FDD x1, SIO+PIO x1, SIO x1/Keyboard x1/IDE66 x1)**
- ✍ **One USB Cable with Bracket**
- ✍ **One Driver / Manual CD**

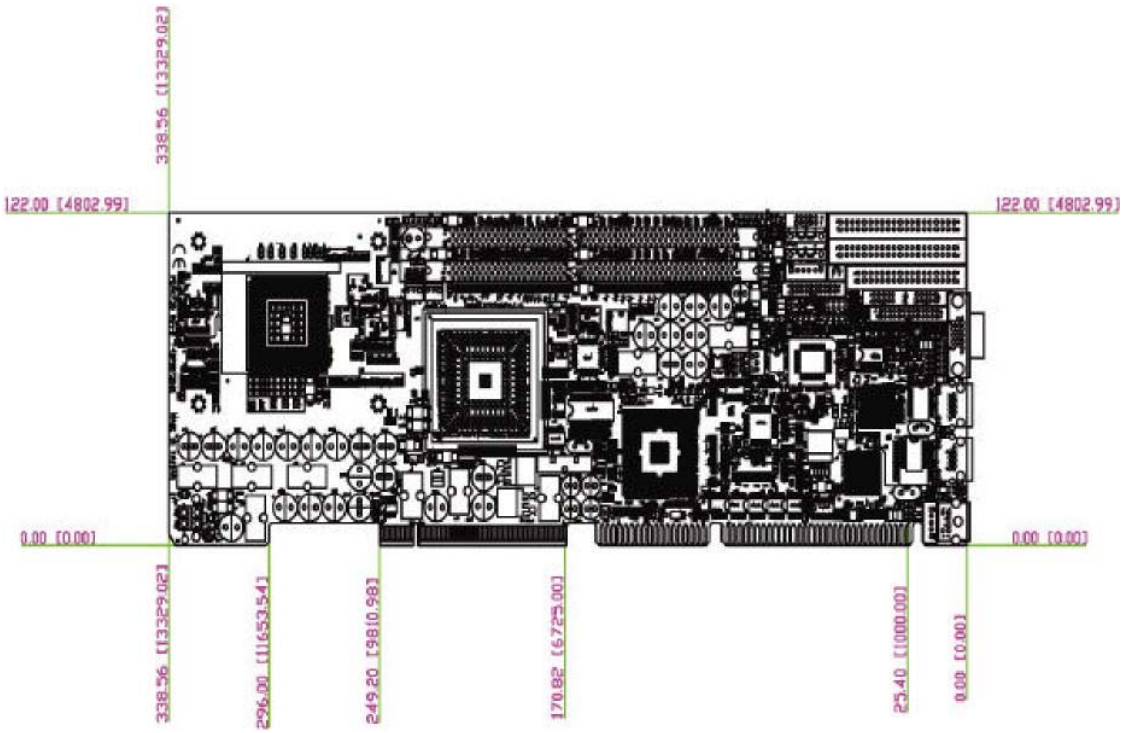


Figure 1-1 : Mechanical Drawing of SBC2516 Series

Chapter 2
Jumper & Switch Settings

This chapter of the User's Manual describes how to set jumpers.
Note: The procedures that follow are generic for all of the SBC2516 models

Before You Begin

Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.

Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:

- A Philips screwdriver
- A flat-tipped screwdriver
- A set of jewelers Screwdrivers
- A grounding strap
- An anti-static pad

Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nosed pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.

Before working on internal components, make sure that the power is off. Ground yourself before touching any internal components, by touching a metal object. Static electricity can damage many of the electronic components. Humid environment tend to have less static electricity than dry environments. A grounding strap is warranted whenever danger of static electricity exists.

Precautions

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on the computers that are still connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to your computer or yourself.

- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Hold electronic circuit boards (such as the SBC2516 board) by the edges only. Do not touch the components on the board unless it is necessary to do so. Don't flex or stress the circuit board.
- Leave all components inside the static-proof packaging that they shipped with until they are ready for installation.
- Use correct screws and do not over tighten screws.

2.1 Functions of Jumpers

You can use jumpers to set configuration options. The table below defines function of each jumper:

Connector	**Function**
J1	AC'97
J2	Primary IDE
J3	SATA 0
J4	Secondary IDE
J5	SATA 1
J6	USB 2.0 Connector
J7	USB Exernal Power Connector
J8	Floppy
J9	DVI Connector(optional)
J10	CPU Fan
J11	System Fan
J12	COM1
J13	COM2
J14	PIO
J15	ATX Connector
J16	External Keyboard
JP2	Speaker
JP4	IDE LED
JP7	GPI/O Port
JP8	Keylock/Power LED
JP9	IR Connector
JP10	82551 LAN Speed 100 LED
JP11	82551 LAN ACT/LINK LED
JP12	ATX Push Button
JP13	82747/82562 LAN speed 100 LED
JP16	82747 LAN speed 1000 LED
JP17	Reset
JP18	82747/82562 LAN ACT/LINK LED
JP20	SMBUS
CON1	VGA Connector
CON2	82551 LAN Connector
CON3	82547/82562 LAN Connector
CON4	AUX+12V Power Connector
CON5	Keyboard+Mouse Connector

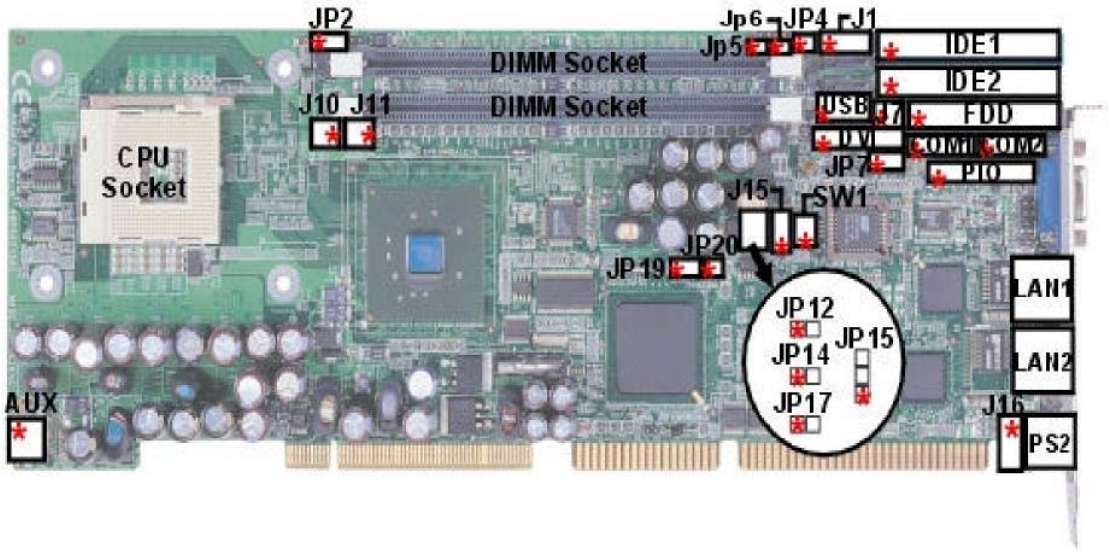
Table 2-1: Functions of Jumpers

2.2 Setting Jumpers

A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.

2.3 Location of Jumpers

The illustration below shows the location of the mainboard jumpers:



*= Pin 1 **Figure 2-2 : Location of Jumpers**

2.4 Jumper Setting

Switch Setting Table (* = default setup)

Device Select

	SW1.1	SW1.2	SW1.3	SW1.4
ON Board LAN 82551 Enable	*ON	ON	X	OFF
ON Board LAN 82551 Disable	OFF	ON	X	OFF
ON Board TMDS Enable	X	ON	* ON	OFF
ON Board TMDS Disable	X	ON	OFF	OFF

DDR VDDQ Select

	*2.5V	2.6V	2.7V	2.8V
JP5	*OFF	ON	OFF	ON
JP6	*OFF	OFF	ON	ON

AT/ATX Power model Select

	AT	ATX
JP15	*1-2	2-3
JP14	*1-2	

RTC Clear

	NORMAL	Clear CMOS
JP19	*1-2	2-3

2.5 Connector Pin Definition

AC'97 connector

Pin	Definition	Pin	Definition
1	AC_SDOUT_R	2	+5V
3	ACRST#	4	GND
5	AC_SYNC	6	+12V
7	AC_SDIN0	8	AC_SDIN1_R
9	ACBTCLK	10	ACSDIN2R

J2/J4: IDE connector

Pin	Definition	Pin	Definition
1	IDRST#	2	GND
3	PDD7A	4	PDD8A
5	PDD6A	6	PDD9A
7	PDD5A	8	PDD710A
9	PDD4A	10	PDD711A
11	PDD3A	12	PDD712A
13	PDD2A	14	PDD713A
15	PDD1A	16	PDD714A
17	PDD0A	18	PDD715A
19	GND	20	NC
21	PDREQA	22	GND
23	PDIOW#A	24	GND
25	PDIOR#A	26	GND
27	PIORDYA	28	IDE-PD1
29	PDDACK#A	30	GND
31	HDIRQ14	32	NC
33	PDA1A	34	P66 DET
35	PDA0A	36	PDA2A
37	PDCS#1	38	PDCS#3
39	IDEACTP#	40	GND

Pin	Definition	Pin	Definitio
1	IDRST#	2	GND
3	SDD7A	4	SDD8A
5	SDD6A	6	SDD9A
7	SDD5A	8	SDD710A
9	SDD4A	10	SDD711A
11	SDD3A	12	SDD712A
13	SDD2A	14	SDD713A
15	SDD1A	16	SDD714A
17	SDD0A	18	SDD715A
19	GND	20	NC
21	SDREQA	22	GND
23	SDIOW#A	24	GND
25	SDIOR#A	26	GND
27	SIORDYA	28	IDE-PD2
29	SDDACK#A	30	GND
31	HDIRQ14	32	NC
33	PDA1A	34	S66 DET
35	SDA0A	36	SDA2A
37	SDCS#1	38	SDCS#3
39	IDEACTP#	40	GND

J3/J5:SATA connector

Pin	Definition	Pin	Definition
1	GN	2	SATA0TXPC
4	GN	3	SATA0TXNC
7	GN	5	SATA0RXNC
		6	SATA0RXPC

Pin	Definition	Pin	Definition
1	GN	2	SATA1TXPC
4	GN	3	SATA1TXNC
7	GN	5	SATA1RXNC
		6	SATA1RXPC

J6:USB connector

Pin	Definition	Pin	Definition
1	+5VSBY	2	DATA0-
3	DATA0+	4	DATA1-
5	DATA1+	6	GND

J7:USB External Power connector

Pin	Definition	Pin	Definition
1	+5VSBY	2	GND

J8:FDD connector

Pin	Definition	Pin	Definition
1	GND	2	DENSEL#
3	GND	4	NC
5	GND	6	NC
7	GND	8	INDEX#
9	GND	10	MOTEA#
11	GND	12	DRVB#
13	GND	14	DRVA#
15	GND	16	MOTEB#
17	GND	18	DIR#
19	GND	20	STEP#
21	GND	22	WDATA#
23	GND	24	WGATE#
25	GND	26	TK00#
27	GND	28	WPT#
29	GND	30	RDATA#
31	GND	32	SIDE1#
33	GND	34	DSKCHG#

J9:TMDS DVI connector

Pin	Definition	Pin	Definition
1	TMDSTX2N	2	TMDSTX2P
3	GND	4	TMDSTX1N
5	TMDSTX1P	6	GND
7	+5V	8	GND
9	HotPlugDet	10	TMDSTX0N
11	TMDSTX0P	12	GND
13	TMDSTXCP	14	TMDSTXCN
15	GND	16	GND
17	DVICLK	18	DVIDATA
19	NC	20	NC

J10/J11:CPU FAN & SYSTEM FAN connector

Pin	Definition	Pin	Definition
1	GND	2	+12V
3	SENSE		

J12/J13: COM1/COM2

Pin	Definition	Pin	Definitio
1	BDCD1#	2	BRXD1
3	BTXD1	4	BDTR1#
5	GND	6	BDSR1#
7	BRTS1#	8	BCTS1
9	BRI1#	10	GND

Pin	Definition	Pin	Definitio
1	BDCD2#	2	BRXD2
3	BTXD2	4	BDTR2#
5	GND	6	BDSR2#
7	BRTS2#	8	BCTS2
9	BRI2#	10	GND

J14: PIO connector

Pin	Definition	Pin	Definition
1	PSTB#	14	PAFD#
2	PPD0	15	PERR#
3	P_PD1	16	P_PINIT#
4	PPD2	17	PSLIN#
5	PPD3	18	GND
6	PPD4	19	GND
7	PPD5	20	GND
8	PPD6	21	GND
9	PPD7	22	GND
10	PACK#	23	GND
11	PBUSY	24	GND
12	PPE	25	GND
13	PSLCT	26	GND

J15:ATX POWER-ON connector

Pin	Definition	Pin	Definition
1	+5VSBY	2	GND
3	PSON#		

J16:External Keyboard

Pin	Definition	Pin	Definition
1	KBCLK	2	KBDATA
3	NC	4	GND
5	+5V		

JP2:SPEAKER External connector

Pin	Definition	Pin	Definition
1	SPEAKERR#	2	GND
3	GND	4	+5V

JP4:IDE Active LED connector

Pin	Definition	Pin	Definition
1	+5V	2	IDE_LED

JP7:GPIO connector

Pin	Definition	Pin	Definition
1	GP27_D_IN1 (PIN20)	2	GP23_D_OUT 1 (PIN24)
3	GP26DIN2 (PIN21)	4	GP22DOUT 2 (PIN25)
5	GP25_D_IN3 (PIN22)	6	GP21_D_OUT 3 (PIN26)
7	GP24_D_IN4 (PIN23)	8	GP20_D_OUT 4 (PIN27)

JP8:Keylock/Power LED connector

Pin	Definition	Pin	Definition
1	+5V Pull-up (Power LED)	2	N.C
3	GND (PowerLED)	4	Keylock
5	GND (Key Lock)		

JP9:IR connector

Pin	Definition	Pin	Definition
1	+5V	2	CIRRX
3	RIRX	4	GND
5	IRTX		

JP10:82551QM LAN External SPEED LED connector

Pin	Definition	Pin	Definition
1	+3VSBY	2	SPEED_LAN

JP11:SMBUS Externalconnector

Pin	Definition	Pin	Definition
1	SMBCLK	2	SMBDATA

JP12:ATX Push Button connector

Pin	Definition	Pin	Definition
1	GND	2	PWRBT#

JP13:82747EI/82562EX LAN External SPEED 100 LED connector

Pin	Definition	Pin	Definition
1	+3VSBY	2	LINK100

JP16:82747EI LAN External SPEED 1000 LED connector

Pin	Definition	Pin	Definitio
1	+3VSBY	2	LINK1000

JP17:Hardware Reset connector

Pin	Definition	Pin	Definition
1	RESET	2	GND

JP18: 82747EI/82562EX LAN External ACTIVE&LINK LED connector

Pin	Definition	Pin	Definition
1	LINK_UP	2	ACTIVITY

JP20:SMBUS connector

Pin	Definition	Pin	Definition
1	SMBCLK	2	SMBDATA

CON1:VGA connector

Pin	Definition	Pin	Definition
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	+5V	10	GND
11	NC	12	DDCDAT
13	HSYNC	14	VSYNC
15	DDCCLK		

CON2:82551 RJ45 connector

Pin	Definition	Pin	Definition
1	LAN1TXP	2	LAN1TXN
3	LAN1 RXP	4	TERMPLANE
5	TERMPLANE	6	LAN1RXN
7	TERMPLANE	8	TERMPLANE
9	SPEED LAN1	10	+3VSBY
11	LILED_LAN1	12	ACTLED_LAN1

CON3:82547/82562 RJ45 connector

Pin	Definition	Pin	Definition
1	LAN2 MDX 0P TXP	2	LAN2 MDX 0N TXN
3	LAN2 MDX 1P RXP	4	LAN2 MDX 2P
5	LAN2 MDX 2N	6	LAN2 MDX 1N RXN
7	LAN2 MDX 3P	8	LAN2 MDX 3N
9	LAN2 LINK1000	10	+3VSBY
11	LAN2_LINK_UP	12	LAN2_ACTIVITY

CON4: AUX +12V Power Connector

Pin	Definition	Pin	Definition
1	GN	2	GND
3	+12V	4	+12V

CON5: Key board + mouse connector

Pin	Definition	Pin	Definition
1	KBDATA	2	MOUSEDATA
3	GND	4	+5V
5	KBCLK	6	MOUSECLK

Chapter 3
Expanded Capabilities

3.1 System Memory

Your system memory is provided by DIMM's (Dual In-line Memory Modules) on the CPU board. The CPU board contains two memory banks: Bank 0 and 1, corresponds to connector DIMM1, DIMM2.

The table below shows possible DIMM configurations for the memory banks. Please be noted that the SBC2516 Series supports Double Data (DDR333) SDRAM. Configurations using different brands of memory modules are not recommended.

DIMM 1	DIMM2	Total Memory
128MB	Empty	128MB
Empty	128MB	128MB
128MB	128MB	256MB
256MB	Empty	256MB
Empty	256MB	256MB
256MB	256MB	512MB
512MB	Empty	512MB
Empty	512MB	512MB
512MB	512MB	1024MB
1024MB	Empty	1024MB
Empty	1024MB	1024MB
1024MB	1024MB	2048MB

Table 3-1 : SBC2516 Series DIMM Configurations

3.2 Installing DIMM

To install DIMM:

1. Make sure the two handles of the DIMM sockets are in the “open” position, i.e. the handles stay outward.

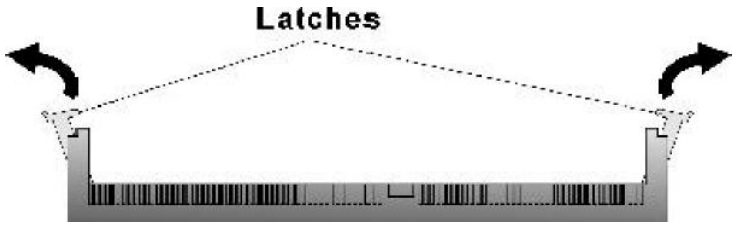


Figure 3-1 : How to Install DIMM (1)

2. Slowly slide the DIMM modules along the plastic guides in the both ends of the socket.

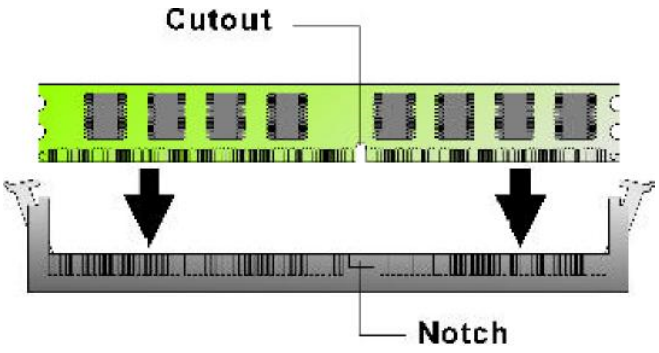


Figure 3-2 : How to Install DIMM (2)

3. Then press the DIMM module down right into the socket, until a click is heard. That means the two handles automatically locked the memory modules into the right position of the DIMM socket.

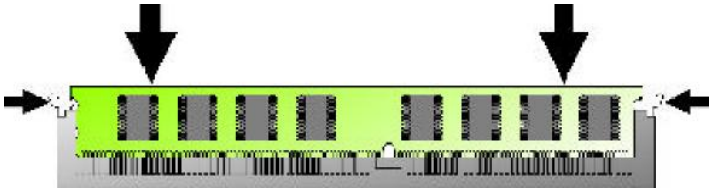


Figure 3-3 : How to Install DIMM (3)

4. To take away the memory module, just push the both handles outward, the memory module will be ejected by the mechanism in the socket.

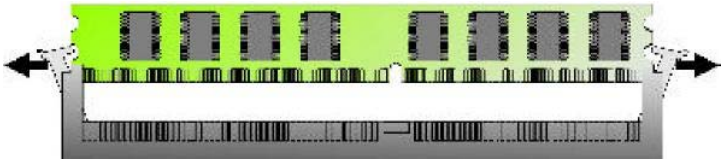


Figure 3-4 : How to Install DIMM (4)

3.3 Changing CPU

To change the CPU:

1. Pull the handling bar of the socket upward to the other end to loosen the socket's openings. Carefully lift the existing CPU up to remove it from the socket.

2. Place the new CPU on the middle of the socket, orienting its beveled corner to line up with the socket's beveled corner. Make sure the pins of the CPU fit evenly to the socket openings. Replace the handling bar to fasten the CPU to the socket.

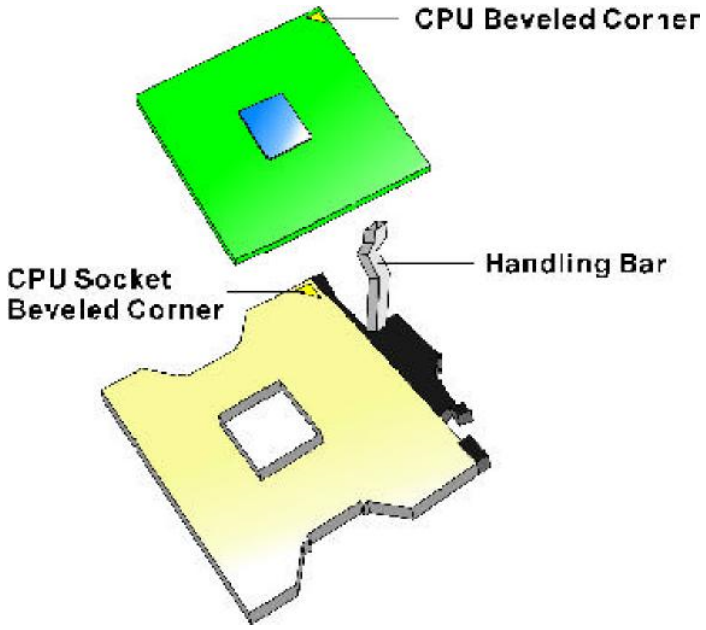


Figure 3-5 : How to Change CPU

3.4 Installing the Fan Heatsink

1. Use the following instructions for installing the fan heatsink: The heatsink has thermal interface material attached to the bottom, shown in Figure 3-7. Be careful not to damage the thermal interface material
2. Align the fan heatsink and clip assembly (A in Figure 3-6) with the retention mechanism (the fan heatsink is symmetrical) and place it on the processor (as shown in Figure 3-7). Allow the heatsink base to compress (without rotating or twisting) the thermal interface material over the surface of the processor's integrated heat spreader.
3. With the clip levers (C in Figure 3-6) in the upward position, push down on all four clip frame corners (D in Figure 3-6) to secure the clip frame latches (E in Figure 3-6) to the retention mechanism hooks (F in Figure 3-6), as shown in Figure 3-8.
4. Note: Make sure the processor fan cable is free from any obstruction and is not trapped under clip frame (B in Figure 3-6).
5. Note: It is important to not allow the heatsink to rotate or twist on the processor's integrated heat spreader. Securing the fan heatsink while closing the clip levers will ensure the thermal interface material is not damaged and the processor will operate correctly. Follow these steps, for closing the clip levers and ensuring the thermal interface material is not damaged:
    a.) Make sure to close the clips levers in opposing directions, one at a time (levers require force to be completely closed), as shown in Figure 3-9a. First, close the clip lever (1 in Figure 3-9b), while holding the topside of the fan heatsink with your other hand (A in Figure 3-9b).
    b.) Then, close the clip lever (2 in Figure 3-9c), while holding the topside of the fan heatsink with your other hand (B in Figure 3-9c).
6. Once the clip levers are closed, verify that the heatsink is securely retained and that the clip frame latches are properly engaged with the retention mechanism hooks.
7. Note: When installed, the fan heatsink and clip assembly may cause the motherboard to slightly bend or flex. This provides the proper mechanical support for the processor (with attached fan heatsink and clip assembly) and helps prevent against damage during system shipment.

Lastly, connect the processor fan cable to the motherboard fan power header (Figure 3-10). Consult the motherboard manual to determine the correct fan header to use

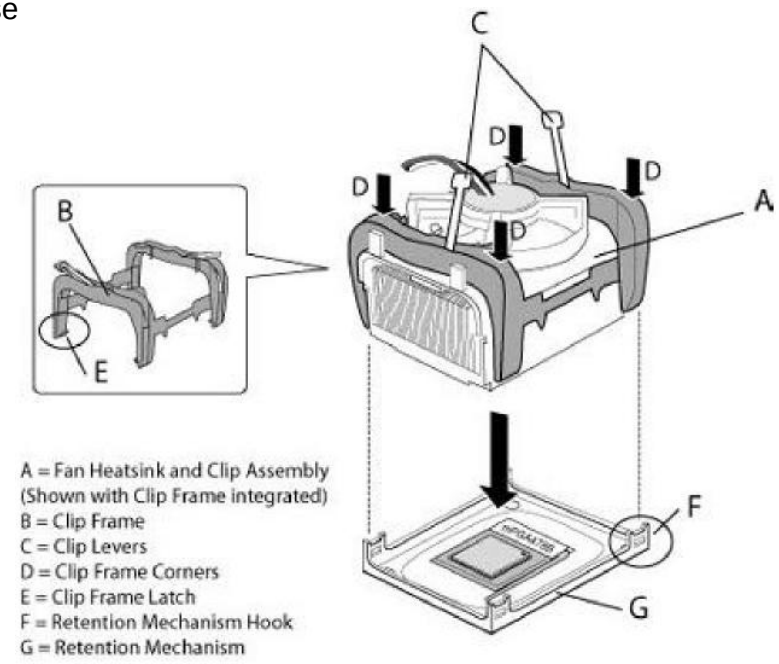


Figure 3-6: Installing the Fan Heatsink (1)
Fan Heatsink and Clip Assembly Terminology

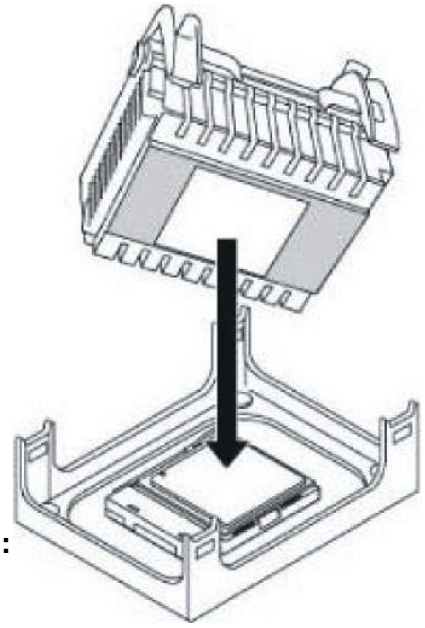


Figure 3-8: Installing the Fan Heatsink (3) Push Down Clip Frame Corners to Secure to Retention Mechanism Hooks

Figure 3-7: Installing the Fan

Heatsink (2) Align Fan Heatsink and Clip Assembly

Figure 3-9a: Installing the Fan Heatsink (4)
Close Clip Levers,
One at a Time

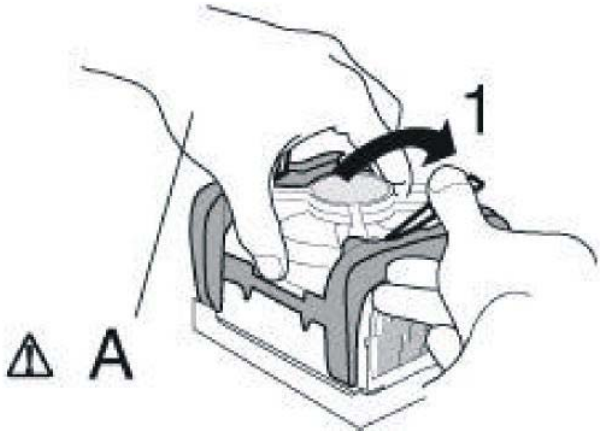


Figure 3-9b: Installing the Fan Heatsink (5)
Close Clip Lever (1),
While Holding the Topside of Fan Heatsink (A)

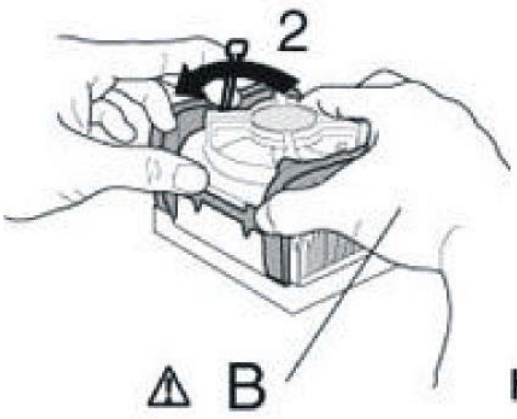


Figure 3-9c: Installing the Fan Heatsink (6)
Close Clip Lever (2),
While Holding the Topside of Fan Heatsink (B)

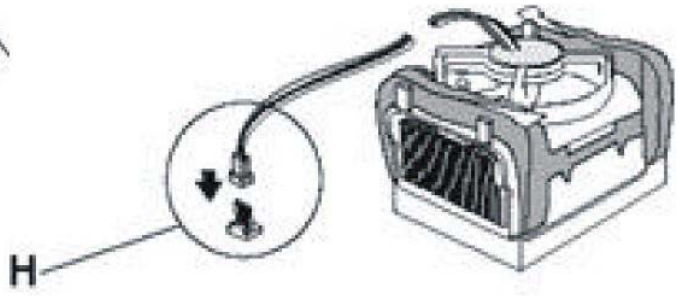


Figure 3-10: Installing the Fan Heatsink (7)
Connect Fan Cable to Motherboard

On-Chip Serial ATA Setting

On-Chip Serial ATA

The setting is used to specify te SATA controller.

Settings:

Disable, Auto, Combined Mode, Enhanced Mode, SATA only

If <Combined Mode> is selected, PATA and SATA will be combined. If <Enhanced Mode> is selected, PATA and SATA will both be enabled. If <Auto> is selected, PATA and SATA will be arranged by BIOS, and you will be able to see the IDE Device Status listed in the Standard CMOS Features.

Serial ATA Port O/I Mode

Select a compatible mode for Port 1 and Port 2 from the Award Setting to the Chipset Setting:

Primary Master	Compatible Mode w/Serial ATA Port 1 set to Primary Master
Primary Slave	Primary Slave
Secondary Master	Secondary Master
Secondary Slave	Secondary Slave
Primary Master	Compatible Mode w/only serial ATA Enabled and Port 1 set to Primary Master
Secondary Master	Secondary Master
SATA 1 Master	Enhance mode w/Port 1 set to Native Mode Master
SATA2 Master	Enhance mode w/Port2 set to Native Mode Master