

**PICMG 1.0 Intel® Core™ 2 Duo, Core™ Duo, Core™ Solo  
and Celeron® M CPU with VGA/DVI, Dual PCI-E GbE,  
SATA/SATAII and Audio**

# **WSB-9452**

## **Quick Installation Guide**

### **Version 2.0**

Sep. 12, 2008

#### **Package Contents**

WSB-9452 package includes the following items:

- 1 x WSB-9452 Single Board Computer
- 1 x Mini Jumper Pack
- 1 x ATA 66/100 flat cable
- 1 x Dual RS-232 cable
- 1 x SATA Power cable ( WSB-9452/9452DVI Only)
- 2 x SATA Power cable ( WSB-9452S/9452SDVI Only)
- 1 x IO-KIT-001-R20 (DVI Model Only)
- 2 x SATA cable ( WSB-9452/9452DVI Only)
- 4 x SATA cable ( WSB-9452S/9452SDVI Only)
- 1 x KB/MS Y cable
- 1 x USB cable
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)



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#### **Specifications**

- CPU: Socket M Intel® Core™2 Duo, Core™ Duo, Core™ Solo Processor with a 667MHz FSB, Intel® Celeron® M Processor with a 533MHz FSB
- System Chipset: Intel® 945GME + ICH7M
- BIOS: AMI Flash
- System Memory
  - 2 x 240-pin Dual channel DDRII 400/533/667 MHz up to 2GB (System Max. 4GB)
- Ethernet: Dual Broadcom BCM5787M PCIe GbE Chipsets with ASF2.0
- I/O
  - I/O Interface
    - 2 x RS-232
    - 7 x USB 2.0 (1 on bracket, 6 by pin header)
    - 1 x IDE ( WSB-9452/WSB-9452DVI Only)
    - 2 x IDE ( WSB-9452S/WSB-9452SDVI Only)
    - 1 x FDD
    - 1 x LPT
    - 2 x SATA (WSB-9452/9452DVI Only)
    - 2 x SATA and 2 x SATAII (WSB-9452S/9452SDVI Only)
    - 1 x PCI Express Mini card slot
    - 1 x IrDA
    - 1 x PS/2 for KB/MS
    - 1 x 5-Pin header for KB
    - 1 x 20-pin LPC (TPM Module)
  - Digital I/O: 8-bit digital I/O, 4-bit input / 4-bit output
  - Display:
    - VGA integrated in Intel® 945GME
    - DVI (WSB-9452DVI / WSB-9452SDVI Only)
    - LVDS: Dual Channel 18/24-bit LVDS
  - Audio:
    - 5.1 Channel Audio Kit with Realtek ALC655 codec
    - 7.1 Channel HD Audio Kit with Realtek ALC883 supports dual audio stream

- WDT: Software programmable supports 1-255 sec. System reset
- Power Supply: AT/ATX Power
- Power Consumption:  
+5V@4.15A,+12V@1.29A  
(Intel® Core™ Duo T2700 2.33GHZ,DDR2 533MHz 1GB\*2)
- Operating Temperature: 0 ~ 60°C( 32 ~ 140°F)

## **Ordering Information**

### WSB-9452-R20

PICMG1.0 Intel Core™ 2 Duo 533/ 667MHz processor, CRT/LCD, Dual PCIE GbE, and 2xSATA

### WSB-9452DVI-R20

PICMG1.0 Intel Core™ 2 Duo 533/ 667MHz processor, CRT/LCD/DVI, Dual PCIE GbE, and 2xSATA

### WSB-9452S-R20

PICMG1.0 Intel Core™ 2 Duo 533/ 667MHz processor, CRT/LCD, Dual PCIE GbE, 2xSATA and 2xSATAII.

### WSB-9452SDVI-R20

PICMG1.0 Intel Core™ 2 Duo 533/ 667MHz processor, CRT/LCD/DVI, Dual PCIE GbE, 2xSATA and 2xSATAII.

CF-479B-RS: CPU cooler

HDTV CABLESET-01:

HDTV Cable Set with Composite/ S-Video/ Component output

AC-KIT08R-R10:

5.1 Channel Audio Kit with Realtek ALC655

AC-KIT883HD-R10:

7.1 Channel HD Audio Kit with Realtek ALC883 supports dual audio streams

32200-000017-RS: FDD cable

19800-000049-RS: LPT cable

32100-087100-RS: ATX-12V cable

## Jumpers setting and Connectors

LABEL	FUNCTION
J_CMOS1	CMOS state setting
JAUTO1	AT power setting
J_VLVDS1	LCD Voltage Selector
JLAN_PWR1	LAN1,LAN2 POWER SELECT
VGA1	VGA 15-pin Female Connector
USB_C6	USB Port Connector
LAN1、LAN2	RJ45 LAN Connector
KB_MS1	PS/2 MOUSE & KEYBOARD Connector
COM1 COM2	Internal Serial Port Connectors
LPT1	Parallel Port Connector
USB01 USB23 USB45	Internal 6 Port USB Connectors
J_AUDIO1	Extend Audio Module Connector
SATA1 SATA2	Serial ATA II Connectors
SATA3 SATA4	Serial ATA Connectors
FDD1	FDD Connector
IDE1,IDE2	IDE Connectors
IR1	IrDA Infrared Interface Connector
CN1	PCI-E Mini Card Slot
TPM1	Trusted Platform Module Connector
DVI1	Digital Visual Interface Connector
TV1	TV Out Connector
INVERTER1	LVDS Panel Voltage Supply
LVDS1	LVDS Panel Connector
CPU_FAN1	CPU Fan Connector
DIO1	Digital I/O Connector
F_PANEL1	PWR & RST Buttons and Indicators
ATXCTL1	Backplane Power Connector
CPU12V1	ATX-12V CPU Power Source
KB1	Internal 5-pin Header Keyboard Connector
BAT1	Battery connector

<b>J_CMOS1 : Clear CMOS Setup</b>	
J_CMOS1	DESCRIPTION
1-2 (Default)	Keep CMOS Setup (Normal Operation)
Short 2-3	Clear CMOS Setup

<b>ATXCTL1 : Backplane Power Connector</b>	
PIN	DESCRIPTION
1	Ground
2	PS_ON
3	5VSB

<b>JLAN_PWR1 : Select LAN controller power source</b>		
	3.3V_Dual	3.3V
LAN1	1-3	3-5(Default)
LAN2	2-4	4-6(Default)

<b>JAUTO1 : AT power setting</b>	
JAUTO1	DESCRIPTION
Open (Default)	Disable
Short 1-2	Enable

<b>J_VLVDS1 : Set The Panel Voltage</b>	
J_LVDS1	DESCRIPTION
1-2 (Default)	Set The Voltage Level Of Panel To VCC3
Short 2-3	Set The Voltage Level Of Panel To VCC5

<b>IR1: IrDA connector</b>	
PIN	DESCRIPTION
1	VCC
2	NC
3	IR-RX
4	GND
5	IR-TX

<b>KB1: 5-pin Mini-DIN Keyboard Connector</b>	
PIN	DESCRIPTION
1	Keyboard Clock
2	Keyboard Data
3	NC
4	GND
5	VCC

<b>J_AUDIO1 : Audio Source Connector</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	AC97_SYNC (HD_AS_SYNC)	2	AC97_BITCLK (HD_AS_BITCLK)
3	AC97_SDOUT (HD_AS_SDOUT)	4	AC97_PCBEEP (HD_AS_PCBEEP)
5	AC97_SDIN (HD_AS_SDIN)	6	AC97_RST# (HD_AS_RST#)
7	AC97_VCC (HD_AS_VCC)	8	AC97_GND (HD_AS_GND)
9	AC97_12V (HD_AS_12V)	10	AC97_GND (HD_AS_GND)

<b>FDD1: FDC Connector</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	GND	2	REDUCE WRITE
3	GND	4	N/C
5	N/C	6	N/C
7	GND	8	INDEX#
9	GND	10	MOTOR ENABLE A#
11	GND	12	DRIVE SELECT B#
13	GND	14	DRIVE SELECT A#
15	GND	16	MOTOR ENABLE B#
17	GND	18	DIRECTION#
19	GND	20	STEP#
21	GND	22	WRITE DATA#
23	GND	24	WRITE GATE#
25	GND	26	TRACK 0#
27	GND	28	WRITE PROTECT#
29	GND	30	READ DATA#
31	GND	32	SIDE 1 SELECT#
33	GND	34	DISK CHANGE#

<b>USB01, USB23, USB45: Internal USB Connector</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	+5V VCC	2	GND
3	DATA-	4	DATA+
5	DATA+	6	DATA-
7	GND	8	+5V VCC

<b>F_PANEL1 : External Switches and Indicators panel</b>					
	PIN	DESCRIPTION	PIN	DESCRIPTION	
Power LED	1	PWR_LED+	2	Speaker+	Speaker
	3	N/C	4	N/C	
	5	PWR_LED-	6	N/C	
PWRBTN	7	PWRBTN+	8	Speaker-	RESET
	9	PWRBTN-	10	N/C	
HDDLED	11	HDLED+	12	Reset+	RESET
	13	HDLED-	14	Reset-	

<b>CN1: PCI-E Mini Card Connector</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	PCIE_WAKE#	2	VCC3
3	N/C	4	GND
5	N/C	6	1.5V
7	CLKREQ#	8	LFRAME#
9	GND	10	LAD3
11	CLK-	12	LAD2
13	CLK+	14	LAD1
15	GND	16	LAD0
17	PCIRST#	18	GND
19	LPC	20	VCC3
21	GND	22	PCIRST#
23	PERN2	24	3VDual
25	PERP2	26	GND
27	GND	28	1.5V
29	GND	30	SMBCLK
31	PETN2	32	SMBDATA
33	PETP2	34	GND
35	GND	36	USB-
37	N/C	38	USB+
39	N/C	40	GND
41	N/C	42	N/C
43	N/C	44	RF_LINK#
45	N/C	46	BLUELED#
47	N/C	48	1.5V
49	N/C	50	GND
51	N/C	52	VCC3

<b>CPU12V1 : CPU POWER Connector</b>			
<b>ATX-12V1 (CPU)</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	GND	2	GND
3	+12V	4	+12V

<b>DIO1 : Digital Input / Output Connector</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	Ground	2	+5V VCC
3	Output 3	4	Output 2
5	Output 1	6	Output 0
7	Input 3	8	Input 2
9	Input 1	10	Input 0

<b>DVI1 : DVI Connector</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	Data 2-	14	+5V Power
2	Data 2+	15	GND
3	GND	16	Hot Plug Detect.
4	N/C	17	Data 0-
5	N/C	18	Data 0+
6	DDC Clock	19	GND
7	DDC Data	20	N/C
8	N/C	21	N/C
9	Data 1-	22	GND
10	Data 1+	23	Clock +
11	GND	24	Clock -
12	N/C	25	GND
13	N/C		

<b>LPT1 : Parallel Port Connector</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	STROBE#	14	AUTO FORM FEED #
2	DATA0	15	ERROR#
3	DATA1	16	INITIALIZE#
4	DATA2	17	PRINTER SELECT LN#
5	DATA3	18	GND
6	DATA4	19	GND
7	DATA5	20	GND
8	DATA6	21	GND
9	DATA7	22	GND
10	ACKNOWLEDGE#	23	GND
11	BUSY	24	GND
12	PAPER EMPTY	25	GND
13	PRINTER SELECT		

<b>CPU_FAN1 : CPU Fan Connector</b>	
PIN	DESCRIPTION
1	GND
2	+12V
3	Rotation Signal
4	Control

<b>INVERTER1: Panel Power Supply</b>	
PIN NO.	DESCRIPTION
1	BRIGHTNESS
2	GND1
3	12V
4	GND2
5	BL_EN



<b>IDE1, IDE2: IDE Interface Connector</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	RESET#	2	GND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA 10
9	DATA 4	10	DATA 11
11	DATA 3	12	DATA 12
13	DATA 2	14	DATA 13
15	DATA 1	16	DATA 14
17	DATA 0	18	DATA 15
19	GND	20	N/C
21	IDE DRQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	IDE CHRDY	28	BALE – DEFAULT
29	IDE DACK	30	GND
31	INTERRUPT	32	N/C
33	SA1	34	PDIAG#
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GND

<b>LVDS1: LVDS Connector</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	GND1	2	GND2
3	A_Y0	4	A_Y0#
5	A_Y1	6	A_Y1#
7	A_Y2	8	A_Y2#
9	A_CK	10	A_CK#
11	A_Y3	12	A_Y3#
13	GND3	14	GND4
15	B_Y0	16	B_Y0#
17	B_Y1	18	B_Y1#
19	B_Y2	20	B_Y2#
21	B_CK	22	B_CK#
23	B_Y3	24	B_Y3#
25	GND5	26	GND6
27	VCC1	28	VCC2
29	VCC3	30	VCC4

<b>COM1,COM2: External Serial Port Connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	DCD#	2	DSR#
3	RXD	4	RTS#
5	TXD	6	CTS#
7	DTR#	8	RI#
9	GND	10	NC

<b>TV1: Video output for television</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	GND	2	AGREEN_Y
3	GND	4	ARED_C
<b>RCA Connector (only video signal)</b>			
5	GND	6	ABLUE_CVBS

<b>TPM1: Trusted Platform Module connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	FWHPCLK	2	GND
3	LFRAME#	4	KEY
5	PCIRST#	6	VCC
7	LAD3	8	LAD2
9	VCC3	10	LAD1
11	LAD0	12	GND
13	SMBCLK	14	SMBDATA
15	3VDUAL	16	SERIRQ
17	GND	18	CLKRUN#
19	LPCPD#	20	LDRQ#

<b>BAT1 : Battery Connector</b>	
<b>PIN</b>	<b>DESCRIPTION</b>
1	BAT+
2	BAT-

# Board Layout: Jumper and Connector Locations

