Quick Installation Guide

Version 1.0

(R)PEB-4702VLA

FORM FACTOR	CPU	CHIPSET
Mini-ITX	µFPGA 478 Pentium M 2.26 GHz	Intel 915GM ICH6M
MEMORY	**IDE**	**I/O**
DDR2 2GB	1 x UDMA 100 2 x SATA	USB/Serial/LPT
Expansion Bus	**LAN**	**AUDIO**
PCI-Express x 16 Mini PCI	Dual Intel PCI-Express Giga LAN	AC'97 Codec

About this Quick Installation Guide

This Quick Installation Guide provides general information and installation instructions about the SBC. This User's Manual is intended for experienced users and integrators with hardware knowledge of personal computers. If you are not sure about any description in this User's Manual, please consult your vendor before further handling.

Warning

Single Board Computers and their components contain very delicate Integrated Circuits (IC). To protect the Single Board Computer and its components against damage from static electricity, you should always follow the following precautions when handling it :

1. Disconnect your Single Board Computer from the power source when you want to work on the inside
2. Hold the board by the edges and try not to touch the IC chips, leads or circuitry
3. Use a grounded wrist strap when handling computer components.
4. Place components on a grounded antistatic pad or on the bag that came with the Single Board Computer, whenever components are separated from the system

Replacing the lithium battery

Incorrect replacement of the lithium battery may lead to a risk of explosion.

The lithium battery must be replaced with an identical battery or a battery type recommended by the manufacturer (BR2032).

Do not throw lithium batteries into the trashcan. It must be disposed of in accordance with local requlations concerning special waste.

Technical Support

Please do not hesitate to call or e-mail our customer service when you still can not find out the answer.

http://www.portwell.com

E-mail:tech@portwell.com

Warranty

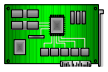
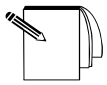
This product is warranted to be in good working order for a period of two years from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster.

Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, or inability to use this product. Vendor will not be liable for any claim made by any other related party.

Vendors disclaim all other warranties, either expressed or implied, including but not limited to implied warranties of merchantibility and fitness for a particular purpose, with respect to the hardware, the accompanying product's manual(s) and written materials, and any accompanying hardware. This limited warranty gives you specific legal rights.

Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.

(R)PEB-4702VLA PACKING LIST

	(R)PEB-4702VLA Mini ITX Embedded board
	1 x I/O Bracket 1 x CPU cooler or Heat Sink 1x ATX Power Cable 300mm
	1 x CD-ROM (System Driver)
	Quick Installation Guide Warranty card

Before up and running, please make sure the package contains all of above accessories. If any of the above items is damaged or missing, contact your vendor immediately.

Ordering Information

(R)PEB-4702VLA	Mini-ITX Intel Pentium M socket 478 Embedded board with CRT/LCD/DVI/Dual Gigabit Ethernet
Cable Kit	IDE; USB; K/B-M/S; TV_Out; Print; SATA; LPT to FDD

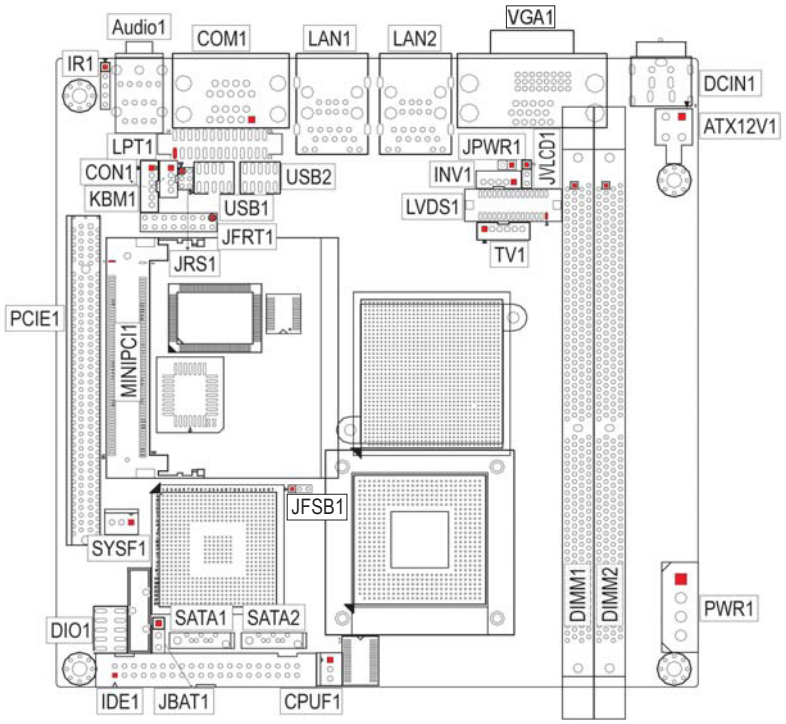
Specification	
Product Name	**(R)PEB-4702VLA**
Form Factor	Mini-iTX Embedded Board Size (170mm x 170mm)
Processor	μ FC-PGA478 pin Pentium-M Dothan Up to 2.26GHz(533MHz FSB)
Chipset	NB : Intel 915GM SB: Intel ICH6M
System Memory	Support Two 240Pin DDRII SDRAM DIMM Socket Up to 2GB
VGA/LCD Controller	UMA 915GM Video Controller with DVI, LVDS, TV-out and CRT support
	(Support Dual Independent display)
Ethernet	Dual Intel 82573V Gigabit Ethernet
I/O Chips	WINBOND W83627HG
BIOS	Phoenix-Award PnP Flash BIOS
Audio	AC'97 Codec, supports MIC-In/ Line-In/ Line-out
Serial ATA	2 x Serial ATA with 150MB/s transfer rate
ATA / IDE	1 x Ultra DMA 100, support 2 IDE devices
Flash Disk	1 x Type II Compact Flash Disk Socket (Share IDE Resource)
Serial Port	2 x COM ports
	COM 1: RS-232
	COM 2: RS232/422/485 Select
Parallel Port	Supports SPP/ EPP/ ECP mode
K/B and Mouse	1 x PS2 K/B and Mouse
USB Port	8 x USB 2.0
DIO	8 bit programmable Digital I/O
TV out	6 pin mini wafer
LCD	18/36 bit LVDS
Expansion Interface	PCI-Express x 16 slot for High-Performance Graphics Card or PCI-Express x1 Device
	1 x Mini PCI socket
Hardware Monitor Chip	Integrated in W83627HG
RTC	Support Real Time Clock
Power Input Connector	ATX 12V Power Connector
	DC-IN 12V Power Adapter
Operation Temp.	0°C ~ 60°C
Watchdog Timer	255-level Reset
Dimension (L x W)	170 x 170 mm (6.7" x 6.7")

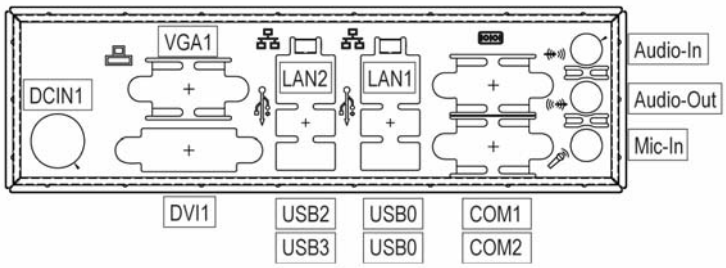
Note:

1. Recommend use ATX power to instead of 12V DC-IN if there's a PCI Express x16 Graphics card on the board

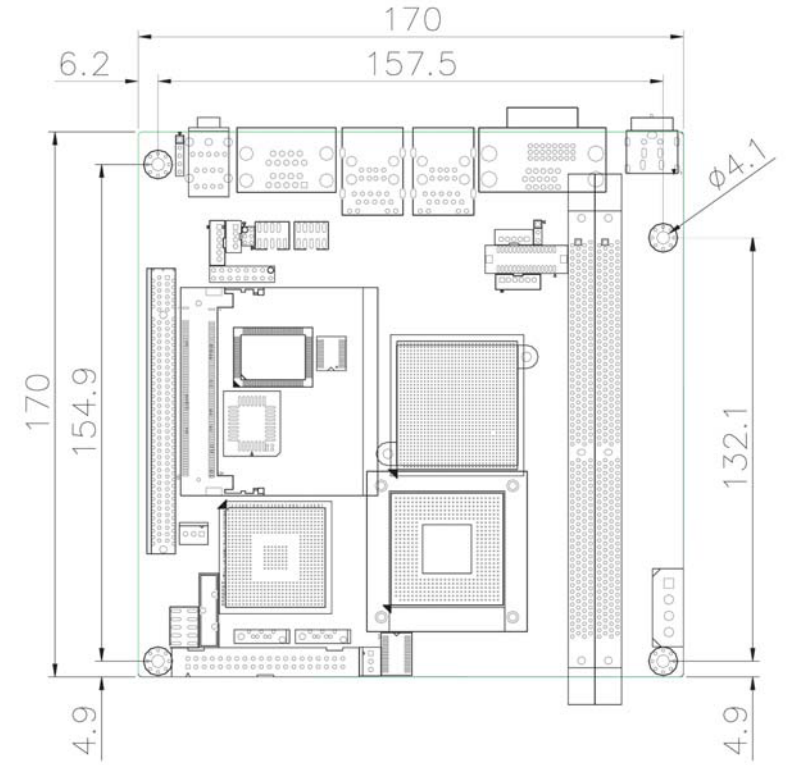
2. DC-12V Output: Strongly recommend output upper then 80W

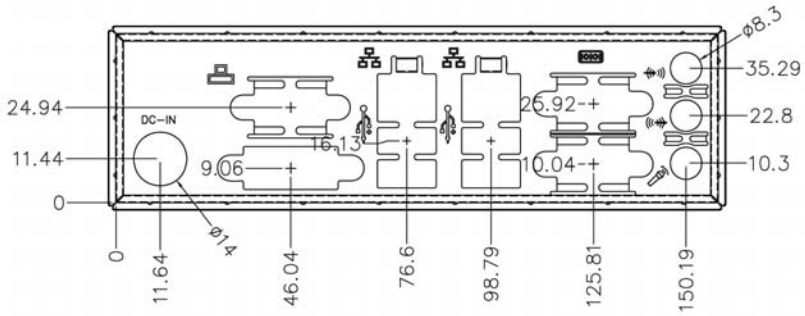
Board Layout





Board Dimension





Jumper/Connector Quick Reference

Label	Function
JBAT1	Clear CMOS
JRS1	COM2 RS-232/422/485 Select
JVLCD1	LVDS1 LCD Voltage select
JFSB1	Front side bus clock select

Jumper/Connector Quick Reference

Label	Function
ATX12V1	ATX 12V DC Input
PWR1	4P Auxilary Power Connector (for output only)
AUDIO1	Audio interface Port
CPUF1	CPU FAN Connector
SYSF1	System FAN Connector
DIMM1,2	240 Pin DDR2 DIMM Socket
DIO1	Digital I/O Connector
IDE1	Primary IDE Connector
PCIE1	PCI Express x 16 Interface Slot
MPCI1	Mini PCI Interface
LVDS1	LVDS LCD Panel Connector
INV1	LCD Inverter Connector
IR1	Infrared (IR) Connector
TV1	TV-out Connector
SATA 1, 2	Serial ATA 1, 2 Connector
LPT1	Parallel Port or Floppy
CON1	RS-422 / 485 USB Connector
USB1, 2	USB Connector
KBM1	PS/2 Keyboard and Mouse
VGA1	CRT Display & DVI Connector
LAN1, LAN2	Ethernet ConnectorUSB1/2 + LAN1, LAN2 Connector
DCIN1	DC-12V Power Adapter In
JFRT1	Front Panel (Switches and Indicators)
CFD1	Compact Flash Socket
JPWR1	AT/ATX Power Type Selection
VGA1	CRT SVGA Connector

Note:

1. LPT/FDD select by BIOS

2. Compact Flash share by IDE1 resources,can not Hot swap

CMOS Jumper Settings

CMOS Setup (JBAT1)

Type : JBAT1: Onboard 3-pin header

JBAT1

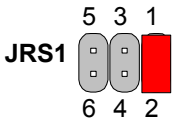
CMOS Setup (JBAT1)	JBAT1	
Keep CMOS	1-2	ON
Clear CMOS	2-3	ON

Default setting 1-2

COM2 RS-232 / 422 / 485 Select

Connector: JRS1

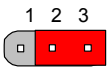
Type: onboard 6-pin (2*3) header



Mode Selection	1-2	3-4	5-6
RS-232	ON	OFF	OFF
RS-422	OFF	ON	OFF
RS-485	OFF	OFF	ON

Default setting RS-232

LCD Voltage Selection



Type : JVLCD1: Onboard 3-pin header

JVLCD1

The voltage of LCD panel could be selected by JVLCD1 in 5V or 3.3V.

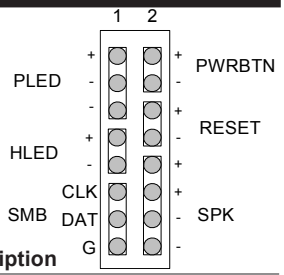
Mode	JVLCD1
3.3V	2-3
5V	1-2

Default setting 2-3

Switches and Indicators

Connector : **JFRT1**

Type : Onboard 16-pin header

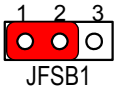


Pin	Description	Pin	Description
1	Power LED+	2	PWRBTN+
3	GND	4	PWRBTN-
5	GND	6	RESET+
7	HDD LED+	8	RESET-
9	HDD LED-	10	SPEAKER+
11	SMBCLK	12	SPEAKER+
13	SMBDATA	14	SPEAKER-
15	GND	16	SPEAKER-

Front side bus clock select

Connector: **JFSB1**

Type: onboard 3-pin (1*3) header



JFSB1Select	1-2	2-3
Front side bus	400MHz	533MHz

Default setting:400MHz

AT/ATX Power Select

AT/ATX Power Selection(JPWR1)

Type: onboard 2-pin (1*2) header

JPER11Select	**1-2**
AT-MODE	SHORT
ATX-MODE	OPEN

Default setting:ATX MODE

RS-232 Serial Port

Connector: **COM1, COM2**

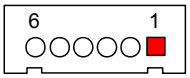
Type: DB9

Pin	Description	Pin	Description
1	DCD1	2	RXD1
3	TXD1	4	DTR1
5	GND	6	DSR1
7	RTS1	8	CTS1
9	RI1		

Keyboard & PS/2 Mouse

Connector : **KBM1**

Type : onboard waver 6-pin



	Pin	Description	Pin	Description
	1	KB_DATA	2	GND
	3	MS_DATA	4	KB_CLK
	5	VCC	6	MS_CLK

TV-out Connector

Connector : TV1

Type: Onboard 6-pin wafer

Pin	Description
1	TV-CVBS
2	GND
3	TV_Y
4	GND
5	TV_C
6	GND

LCD Inverter Connector

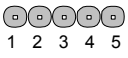
Connector : INV1

Type : Onboard 5-pin wafer

Pin	Description	Pin	Description
1	+12 V	2	GND
3	Backlight on/off	4	Brightness control
5	GND		

Infrared Connector

Connector : IR1
Type : onboard 2.54pitch 5-pin header

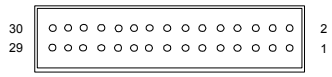


IR1

Pin	Description
1	+5v
2	NC
3	IRRX
4	GND
5	IRTX

LVDS LCD Connector

Connector : LVDS1



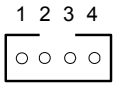
Type : Onboard DF-13-30DP-1.25V

Pin	Description	Pin	Description
1	VDD	2	VDD
3	TX1CLK+	4	TX2CLK+
5	TX1CLK-	6	TX2CLK-
7	GND	8	GND
9	TX1D0+	10	TX2D0+
11	TX1D0-	12	TX2D0-
13	GND	14	GND
15	TX1D1+	16	TX2D1+
17	TX1D1-	18	TX2D1-
19	GND	20	GND
21	TX1D2+	22	TX2D2+
23	TX1D2-	24	TX2D2-
25	GND	26	GND
27	NC	28	NC
29	NC	30	NC

VDD could be selected by JVLCD1 in +5V or +3.3V

RS422/485 Output Connector

Connector: **CON1**



CON1

Type: onboard 2.0 pitch 4-pin wafer

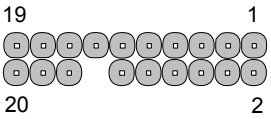
Pin	RS-422	RS-485
1	TX+	DATA+
2	TX-	DATA-
3	RX+	N.C
4	RX-	N.C

RS-422/RS-485 Select by JRS1, share COM2 resource.

Parallel Port Connector

Connector: **LPT1**

Type: onboard 2*10pin 2.0mm Box header



Pin	Description	Pin	Description
1	STROBE	2	AFD
3	PTD0	4	ERROR
5	PTD1	6	INIT
7	PTD2	8	SLIN
9	PTD3	10	GND
11	PTD4	12	GND
13	PTD5	14	Key(N/C)
15	PTD6	16	BUSY
17	PTD7	18	PE
19	ACK	20	SELECT

Floppy Drive Connector

LPT1 can be configured as a connector of floppy disk drive interface through BIOS setup

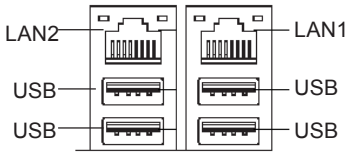
Type: onboard 20-pin 2.0mm Box header

Pin	Description	Pin	Description
1	NC	2	RWC-
3	RINDEX-	4	HEAD-
5	TRAK0-	6	DIR-
7	WP-	8	STEP-
9	RDATA-	10	GND
11	DSKCHG-	12	GND
13	NC	14	Key(N/C)
15	PE	16	MOB-
17	DSA-	18	WD-
19	DSB-	20	WE-

USB/ LAN Connector

Connector: LAN1/LAN2

This connector supports USB 2.0 x4 (USB0, 1, 2, 3) & Gigabit RJ-45 Ethernet Connector.



USB Connector

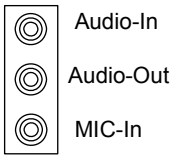
Connector: USB1 / USB2

Type: onboard 2.54pitch 10-pin header for two USB ports

Pin	Description	Pin	Description
1	+5V	2	+5V
3	USBD-	4	USBD-
5	USBD+	6	USBD+
7	GND	8	GND
9	GND	10	N.C

Audio Interface Port

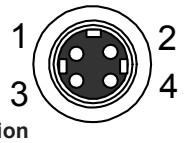
Connector : AUDIO1



DC Power Input

Connector : DCIN1

Type : Mini DIN



Pin	Description	Pin	Description
1	+12V	2	+12V
3	GND	4	GND

Power Connector

ATX Power Connector: ATX12V1

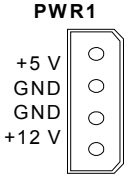
Type:12V 4-pin (2*2) Power Connector

Pin	Description	Pin	Description
4	+12V	2	GND
3	+12V	1	GND

Output Power Connector

Connector : PWR1 (Output Only)

Type : Onboard 4-pin Wafer connector



Pin	Description
1	+12V (2A)
2	GND
3	GND
4	+5V (3.5A)

CPU / System Fan Connector

Connector : **CPUF1 / SYSF1**
Type : Onboard 3-pin wafer connector

Pin	Description
1	GND
2	+12V
3	Fan_Detect

Digital I/O Connector

Connector: DIO1

Type: onboard 2.54pitch 2*5-pin header

Pin	Description	Pin	Description
1	DIO1	2	DIO2
3	DIO3	4	DIO4
5	DIO5	6	DIO6
7	DIO7	8	DIO8
9	+5V	10	GND

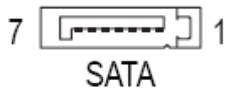
Serial ATA

Connector: SATA1 / SATA2

High speed transfer rates (150MB/sec), support SATA RAID function.

Type: Standard 7-pin SATA Connector

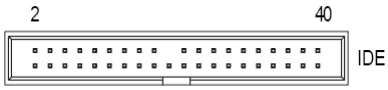
Pin	Description
1	GND
2	TX+
3	TX-
4	GND
5	RX+
6	RX-
7	GND



IDE Connector

Connector : **IDE1**

Type: onboard standard 2.54pitch
(2*20) 40-pin holes



Pin	Description	Pin	Description
1	IDE RESET	2	GND
3	DATA7	4	DATA8
5	DATA6	6	DATA9
7	DATA5	8	DATA10
9	DATA4	10	DATA11
11	DATA3	12	DATA12
13	DATA2	14	DATA13
15	DATA1	16	DATA14
17	DATA0	18	DATA15
19	GND	20	N.C
21	REQ	22	GND
23	IO WRITE	24	GND
25	IO READ	26	GND
27	IO READY	28	IDESEL
29	DACK	30	GND
31	IRQ14	32	N.C
33	ADDR1	34	ATA66 DETECT
35	ADDR0	36	ADDR2
37	#CS0	38	#CS1(#HD SELET1)
39	IDEACTP	40	GND

Compact Flash Connector

Conntecor: CFD1

Pin	Description	Pin	Description
1	GND	26	GND
2	DATA3	27	DATA11
3	DATA4	28	DATA12
4	DATA5	29	DATA13
5	DATA6	30	DATA14
6	DATA7	31	DATA15
7	CS#1	32	CS#3
8	GND	33	GND
9	GND	34	IO READ
10	GND	35	IO WRITE
11	GND	36	+5V
12	GND	37	IRQ15
13	+5V	38	+5V
14	GND	39	CSEL
15	GND	40	N/C
16	GND	41	IDE RESET
17	GND	42	IO READY
18	ADDR2	43	N/C
19	ADDR1	44	+5V
20	ADDR0	45	DASP
21	DATA0	46	DIAG
22	DATA1	47	DATA8
23	DATA2	48	DATA9
24	N/C	49	DATA10
25	GND	50	GND

Note:

Compact Flash share by IDE1 resources, can not Hot swap