

**Half-Size PCISA CPU Card with Intel® Atom™  
D425/N455/D525, DDR3, VGA/LVDS, Dual PCIe GbE, USB  
2.0, four COM, three SATA II, Audio and RoHS**

# **PCISA-PV-D4251/N4551/D5251**

## **Quick Installation Guide**

**Version 1.0**

Oct. 13, 2010

### **Package Contents:**

PCISA-PV-D4251/N4551/D5251 package includes the following items:

- 1 x PCISA-PV-D4251/N4551/D5251 Single Board Computer
- 1 x USB Cable
- 3 x SATA Cable
- 1 x LPT/RS232 Cable
- 1 x Audio cable
- 1 x Mini Jumper Pack
- 1 x QIG (Quick Installation Guide)
- 1 x Utility CD
- 1 x One Key recovery CD



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## Specifications:

- CPU:

Intel® Atom™ D525 dual-core processor (1.80GHz/1MB L2 cache)

Intel® Atom™ D425 single-core processor (1.80GHz/512KB L2 cache)

Intel® Atom™ N455 single-core processor (1.66GHz/512KB L2 cache)

- System Chipset: Intel® ICH8M

- BIOS: UEFI BIOS

- System Memory:

One 204-pin 800MHz DDR3 SDRAM SO-DIMM Supported  
(System max:2GB)

- Ethernet:

Dual PCIe GbE by Realtek RTL8111E, LAN1 supports ASF2.0

- I/O Interface:

3 x RS-232

1 x RS-232/422/485 with Auto Flow control

1 x LPT

1 x FDD

1 x KB/MS

3 x SATAII

1 x IDE

6 x USB 2.0 (4 by pin-header, 2 on rear side)

1 x Infrared

1 x CF Type II

- Digital I/O: 8-bit digital I/O, 4-bit input / 4-bit output

- Super I/O: Fintek F81865

- TPM (Optional)

On board INFINEON SLB9635TT1.2

- SMBus

1 x 4-pin wafer connector

- Expansion: 4x PCI bus support

ISA bus support by ITE IT8888G PCI to ISA Bridge

- Display:

Analog CRT up to 2048x1536 for D525/ D425, 1400x1050 for N455, Support CRT hot plug

18-bit Single channel LVDS, resolution support up to WXGA

1366x768 or XGA 1024x768

- Audio: On board Realtek ALC888 HD codec
- Watchdog Timer: Software programmable supports 1~255 sec. system reset
- Power Supply: 5V/12V by PCISA bus, AT/ATX mode support
- Power Consumption:
  - 5V@3.36A, 12V@0.57A (CPU: D525, 1GB DDR3 1066MHz)
  - 5V@3.25A, 12V@0.48A (CPU: D425, 1GB DDR3 1066MHz)
  - 5V@3.21A, 12V@0.43A (CPU: N455, 1GB DDR3 1066MHz)
- Temperature Operation:
  - 20°C~60°C with free air, -20°C~70°C with force air for D525 processor
  - 20°C~65°C with free air, -20°C~70°C with force air for D425 processor
  - 20°C~70°C with free air, -20°C~75°C with force air for N455 processor
- Humidity: Operation: 5%~95% non-condensing
- Dimension: 185mm x 127.6mm
- Weight: GW: 1000g

## **Ordering Information:**

### PCISA-PV-D5251-R10:

Half-size PCISA CPU Card with Intel® Dual Core Atom™ D525 1.80GHz/ 1MB L2 Cache, VGA/LVDS, Dual PCIe GbE, USB 2.0, 4 COM, 3 SATA II and audio, RoHS

### PCISA-PV-D5251T-R10:

Half-size PCISA CPU Card with Intel® Dual Core Atom™ D525 1.80GHz/ 1MB L2 Cache, VGA/LVDS, Dual PCIe GbE, USB 2.0, 4 COM, 3 SATA II and audio, TPM, RoHS

### PCISA-PV-D4251-R10:

Half-size PCISA CPU Card with Intel® Dual Core Atom™ D425 1.80GHz/ 512KB L2 Cache, VGA/LVDS, Dual PCIe GbE, USB 2.0, 4 COM, 3 SATA II and audio, RoHS

### PCISA-PV-D4251T-R10:

Half-size PCISA CPU Card with Intel® Dual Core Atom™ D425 1.80GHz/ 512KB L2 Cache, VGA/LVDS, Dual PCIe GbE, USB 2.0, 4 COM, 3 SATA II and audio, TPM, RoHS

### PCISA-PV-N4551-R10:

Half-size PCISA CPU Card with Intel® Dual Core Atom™ N455 1.66GHz/ 512KB L2 Cache, VGA/LVDS, Dual PCIe GbE, USB 2.0, 4 COM, 3 SATA II and audio, RoHS

PCISA-PV-N4551T-R10:

Half-size PCISA CPU Card with Intel® Dual Core Atom™ N455 1.66GHz/  
512KB L2 Cache, VGA/LVDS, Dual PCIe GbE, USB 2.0, 4 COM, 3 SATA  
II and audio, TPM, RoHS

32200-000058-RS: FDD cable w/o bracket

19800-000075-RS: KB/MS cable with bracket

32200-000052-RS: IDE Cable

32102-000100-200-RS: SATA Power Cable

19FTS00032100-000001-RS: CPU Fan

## Jumpers setting and Connectors:

<b>LABEL</b>	<b>FUNCTION</b>
J_CMOS1	CMOS state setting jumper
JCF1	CF Card Master/Slave jumper
J_VLVDS1	LVDS1 Voltage Selection jumper
JP1	PCIe Configuration Selection jumper
JP2	RS232/422/485 Selection
ATXCTL1	AT/ATX1 mode setting
JP3	LVDS Panel Selection
COM1	RS-232
COM2	RS-232/422/485
COM3,COM4	RS-232 Pin Header
USB0_1,USB2_1	Internal USB Pin Header
USB_C1,USB_C2	USB Port
F_PANEL1	Power button / Reset / Power LED / HDD LED
LVDS1	LVDS Panel Connector
KB_MS1	6-pin Header KB/MS Connector
IR1	Infrared Interface Connector
INV1	5-pin Header Inverter Connector
AUDIO1	Audio Connector
BAT1	Battery connector
DIO1	Digital I/O Connector
SATA1 SATA2 SATA3	Serial ATA Connectors
CPU_FAN1	Fan Connector
LAN1 LAN2	RJ-45 LAN Connectors
VGA1	VGA Connector
LPT1	LPT Connector
CN1	SMBUS Connector
SPI1	Flash SPI ROM connector

<b>J_CMOS1 : Clear CMOS Setup</b>	
J_CMOS1	DESCRIPTION
Short 1-2	Keep CMOS Setup
Short 2-3	Clear CMOS Setup

<b>JCF1 : Configure CF Card type</b>	
JCF1	DESCRIPTION
Open	Slave
Short 1-2	Master

<b>J_VLVDS1 : Set The Panel Voltage</b>	
PIN	DESCRIPTION
Short 1-2	+3.3V
Short 3-4	+5V
Short 5-6	12V

<b>JP1 : PCIe Configuration</b>	
JP1	DESCRIPTION
Short	PCIe x1
Open	PCIe x4

<b>JP2 : RS232/422/485 Selection</b>	
PIN	DESCRIPTION
Short 1-2	RS232
Short 3-4	RS422
Short 5-6	RS485

<b>ATXCTL1: AT/ATX Mode Setting</b>	
PIN	DESCRIPTION
Short 2-3	AT mode
Use PS_ON# & 5VSB Cable	ATX mode

<b>JP3</b>	<b>LVDS Panel Selection</b>
PIN	DESCRIPTION
N/A	640*480 18bits
1-2	800*480 18bits
3-4	800*600 18bits
5-6	1280*1024 18bits
1-2, 3-4	1024*768 18bits
1-2, 5-6	1366*768 18bits
3-4,5-6	1280*800 18bits
1-2,3-4,5-6	1280*600 18bits

<b>COM1: Serial Port Connector(RS-232)</b>			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD1	2	NDSR1
3	NRX1	4	NRTS1
5	NTX1	6	NCTS1
7	NDTR1	8	NRI1
9	GND	10	NC

<b>COM2 : Serial Port Connector (RS-232/422/485) PIN HEADER 2*7,14PIN, P:2.0mm</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	-NDCDB	2	-NDSRB
3	NSINB	4	-NRTSB
5	NSOUTB	6	-NCTSB
7	-NDTRB	8	-XRI2
9	GND	10	GND
11	TXD485+	12	TXD485-
13	RXD485+	14	RXD485-

<b>COM3, COM4:RS-232 PIN HEADER 2*5,10PIN,180D,P:2.0mm</b>			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD3/4	2	NDSR3/4
3	NRX3/4	4	NRTS3/4
5	NTX3/4	6	NCTS3/4
7	NDTR3/4	8	NR13/4
9	GND	10	NC

<b>USB0_1 、USB2_1: Internal USB Connector PIN HEADER, 2x4PIN, 180° , P=2.54MM.</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	VCC(+5V)	2	GND
3	DATA-	4	DATA+
5	DATA+	6	DATA-
7	GND	8	VCC(+5V)

<b>USB_C1 、USB_C2: USB Port</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	VCC(+5V)	5	GND
2	DATA-	6	GND
3	DATA+	7	GND
4	GND	8	GND

<b>F_PANEL1: PWR &amp; RST Buttons and Indicators panel</b>					
	PIN	DESCRIPTION	PIN	DESCRIPTION	
PWRBTN	1	PWR_BTN+	2	PWR_LED+	Power LED
	3	PWR_BTN-	4	PWR_LED-	
HDD LED	5	HDD_LED+	6	RESET+	RESET
	7	HDD_LED-	8	RESET-	

<b>LVDS1: LVDS Connector</b>			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND2
3	LVDSA_DATA0+	4	LVDSA_DATA0-
5	LVDSA_DATA1+	6	LVDSA_DATA1-
7	LVDSA_DATA2+	8	LVDSA_DATA2-
9	LVDS_CLK+	10	LVDSA_CLK-
11	NC	12	NC
13	GND	14	GND
15	L_DDC_DATA	16	L_DDC_CLK
17	VCC_LCD	18	VCC_LCD
19	VCC_LCD	20	VCC_LCD

<b>KB_MS1: 6-pin Header , P=2.0MM</b>	
PIN	DESCRIPTION
1	VCC5
2	Mouse DATA
3	Mouse CLK
4	Keyboard DATA
5	Keyboard CLK
6	GND

<b>IR1: IrDA connector</b>	
PIN	DESCRIPTION
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX

<b>INV1: 5-pin Header Inverter Connector</b>	
PIN	DESCRIPTION
1	BRIGHTNESS Adjust
2	GND
3	+12V
4	GND
5	BACKLIGHT ENABLE



<b>AUDIO1: Audio Module Connector PIN HEADER 2*5,10PIN, P:2.0mm</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	SPEAKOUT_R	2	LINEIN_R
3	GND	4	GND
5	SPEAKOUT_L	6	LINEIN_L
7	GND	8	GND
9	MICIN_R	10	MICIN_L

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

<b>DIO1: Digital Input / Output Connector</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	GND	2	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>SATA1/2/3: SATA Connector</b>	
PIN	DESCRIPTION
1	GND
2	SATATXP#
3	SATAXN#
4	GND
5	SATARXN0
6	SATARXP0
7	GND

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

<b>LAN1,LAN2: RJ45 Connector</b>			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	LAN#_MDI0+	10	LAN_MDI3-
2	LAN#_MDI0-	11	LAN#_LINK100
3	LAN#_MDI1+	12	LAN#_LED3/EEDO
4	LAN#_MDI1-	13	LAN#_ACT-1
5	GND	14	VCC
6	GND	15	GND
7	LAN#_MDI2+	16	GND
8	LAN#_MDI2-	17	NC
9	LAN#_MDI3+	18	NC

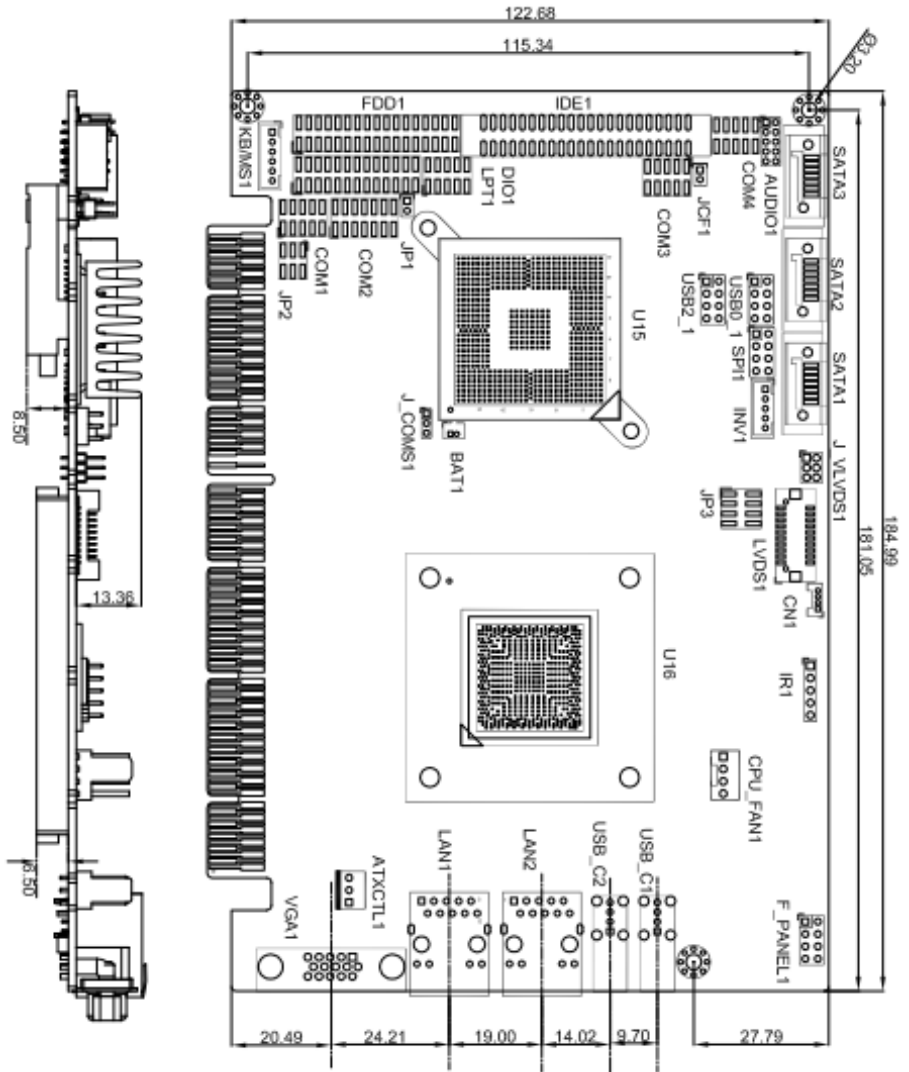
<b>VGA1:D-SUB VGA,15PIN,90°,P=2.29MM</b>			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	9	VCC
2	GREEN	10	DISPLAY_GND
3	BLUE	11	NC
4	NC	12	5VDDCDA
5	GND	13	HSY
6	GND	14	VSYS
7	GND	15	5VDDCLK
8	GND		

<b>LPT1: LPT PIN HEADER 2X13,26PIN,180° ,P=2.0MM</b>			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	-STB	2	-AFD
3	PTD0	4	-ERR
5	PTD1	6	-INIT
7	PTD2	8	-SLIN
9	PTD3	10	GND
11	PTD4	12	GND
13	PTD5	14	GND
15	PTD6	16	GND
17	PTD7	18	GND
19	-ACK	20	GND
21	BUSY	22	GND
23	PE	24	GND
25	SLCT	26	NC

<b>CN1:SMBUS Connector</b>	
PIN	DESCRIPTION
1	GND
2	SMB_DATA
3	SMB_CLK
4	VCC

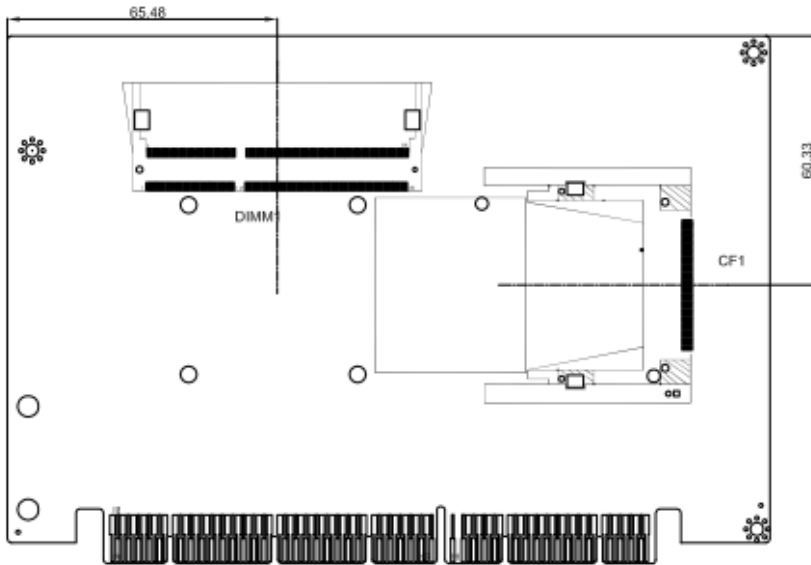
<b>SPI1: SPI Connector PIN HEADER2*3,6PIN,180° ,P:2.0MM)</b>			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	SPI_VCC	4	SPI_CLK
2	GND	5	SPI_SO
3	SPI_CS	6	SPI_SI

# Board Layout: Jumper and Connector Locations



(Unit:mm)

# Board Layout: Jumper and Connector Locations



(Unit:mm)