

**EPIC SBC with Intel Atom™ D2550 1.86GHz/N2600 1.6GHz
processor, DDR3, VGA/HDMI/Dual LVDS, Dual GbE,
USB 3.0, mSATA, SATA 3Gb/s and Audio**

NANO-CV-D25501/N26001

Quick Installation Guide

Version 1.0

Sep. 10, 2012

Package List

NANO-CV-D25501/N26001 package includes the following items:

- 1 x NANO-CV-D25501/N26001 Single Board Computer
- 1 x Audio cable
- 1 x SATA with 5Voutput cable kit
- 1 x RS-232 cable
- 1 x PS/2 KB/MS Y cable
- 1 x USB cable
- 1 x Power cable
- 1 x Mini jumper pack
- 1 x Utility CD (within manual)
- 1 x QIG (Quick Installation Guide)
- 1 x One Key Recovery CD



©2012 Copyright by IEI Technology corp.
All rights reserved.

Specifications

- CPU:
 - Intel® dual core Atom™ D2550 1.86GHz processor
 - Intel® dual core Atom™ N2600 1.6GHz processor
 - Intel® dual core Atom™ N2800 1.86GHz processor (Optional)
- System chipset: Intel® NM10
- BIOS: UEFI BIOS
- System memory:
 - 1 x 1066MHz DDR3 SO-DIMM up to 4GB for D2550 and N2800
 - 1 x 800MHz DDR3 SO-DIMM up to 2GB for N2600
- Graphics Engine:
 - GMA 3650 at 640MHz graphics core speed for D2550 and N2800
 - GMA 3600 at 400MHz graphics core speed for N2600
- Display Output:
 - 1 x VGA
 - 1 x HDMI
 - LVDS1 integrated in CPU
 - Single-channel 24-bit LVDS by D2550, resolution up to 1440x900
 - Single-channel 18-bit LVDS by N2600 and N2800, resolution up to 1366x768
 - LVDS2 supports 24-bit dual-channel by CH7511 DP to LVDS converter, resolution support up to 1920x1200 for D2550, 1600x1200 for N2600/N2800
- Ethernet:
 - Dual Realtek RTL8111E PCIe GbE controllers, LAN1 with ASF2.0 support
- Super IO: Fintek F81866
- I/O Interface:
 - 3 x RS-232
 - 1 x RS-422/485
 - 2 x SATA 3Gb/s with 5V power connector (SATA1 and mSATA shares SATA signal)
 - 2 x USB 3.0 (2 on rear)
 - 4 x USB 2.0 (2 on rear, 2 by pin header)
 - 1 x 6-pin wafer for PS/2 KB/MB
 - 1 x microSD (Only for boot to DOS)

- Expansion:
 - 1 x full-size PCIe Mini card slot with mSATA support (SATA1 and mSATA shares SATA signal)
 - 1 x PC/104 slot (ISA)
 - 1 x PCI/104 slot (PCI)
- Digital I/O: 8-bit programmable I/O
- SMBus
 - 1 x 4-pin wafer connector
- TPM
 - 1 x 20-pin (2x10) LPC pin header
- Audio: Realtek ALC662 HD Audio Codec (Line-in, Line-out, Mic)
- Fan connector
 - 1 x 3-pin CPU fan connector
 - 1 x 3-pin system fan connector
- Watchdog Timer:
 - Software programmable supports 1~255sec. System reset
- Power supply: 9~28V, AT/ATX support
- Power consumption:
 - 12V@2.1A (Intel® Atom™ dual core D2550 CPU with 1333MHz 2GB DDR3 memory)
 - 12V@1.72A (Intel® Atom™ dual core N2600 CPU with 1333MHz 2GB DDR3 memory)
- Temperature operation:
 - 20°C~60°C with free air, -20°C~70°C with force air for D2550
 - 20°C~70°C with free air, -20°C~75°C with force air for N2600/N2800
- Humidity: Operation: 5%~95% non-condensing
- Dimensions: 115mm x 165mm
- Weight: GW: 670g/NW: 350g

Ordering Information

- NANO-CV-D25501-R10 :
EPIC SBC with Intel Atom D2550 1.86GHz,DDR3, VGA/ HDMI/ dual LVDS,dual GbE,USB 3.0,SATA 3Gb/s,mSATA and Audio
- NANO-CV-N26001-R10 :
EPIC SBC with Intel Atom N2600 1.60GHz,DDR3,VGA/ HDMI/ dual LVDS,dual GbE,USB 3.0,SATA 3Gb/s,mSATA and Audio
- NANO-CV-N28001-R10 :
EPIC SBC with Intel Atom N2800 1.86GHz,DDR3,VGA/ HDMI/ dual LVDS,dual GbE,USB 3.0,SATA 3Gb/s,mSATA and Audio (by project support, MOQ 100pcs / lot)
- 32205-002700-100-RS : RS-232 cable
- 32205-003800-100-RS : RS-422/485 cable, 200mm

Jumpers setting and Connectors

LABEL	FUNCTION
JP1	Clear CMOS
JP2	PC104 PLUS PIO_VCC Voltage Select
JP3	AT/ATX Power Mode Setting
JP4	LVDS2 Voltage Selection
JP5	LVDS1 Voltage Selection
SW1	LVDS2 Panel type Selection
MSATA_SW1	MSATA / Mini PCIE Select
F_PANEL1	PWR & RST BUTTONS AND INDICATORS
VGA1	VGA 15-pin Female Connector
LAN1	LAN1 Connectors
LAN2	LAN2 Connectors
KB_MS1	KEYBOARD & MOUSE Connectors
USB_CON2	External 2 Port USB 2.0 Connectors
USB2 USB3	Internal Pin-header 4 USB 2.0 Connectors
USB_CON1	External 2 Port USB 3.0 Connectors
COM1 COM2 COM3 COM4	Internal Serial Port Connectors
AUDIO1	HD Audio Connector
SATA1 SATA2	Serial ATA Connectors
SATA_PWR1 SATA_PWR2	SATA Power Connector
CPU_FAN1	CPU Fan Connector
LVDS1 LVDS2	LVDS1 and LVDS2 Panel Connector
INV1 INV2	LVDS1 and LVDS2 Panel Backlight +12V Power Source
DIO1	Digital I/O Connector
CN2	Wide Range Power Input Connector
M_PCIE1	Mini PCI-E Card Connector
CN11	Micro-SD Connector
PC104_PLUS1	PCI104 Plus PCI/ISA Connector

JP1 : CMOS Setup Keep / Clear	
JP1	DESCRIPTION
Short 1-2 (default)	Keep CMOS Setup (Normal Operation)
Short 2-3	Clear CMOS Setup

JP5 : LVDS1 Voltage Selection	
JP3	DESCRIPTION
Short 1-2 (default)	+3.3V LVDS
Short 2-3	+5V LVDS

JP3 : AT/ATX Power Mode setting	
PIN NO.	DESCRIPTION
Short 1-2 (default)	ATX Power Mode
OFF	AT Power Mode

JP4 : LVDS2 Voltage Selection	
JP3	DESCRIPTION
Short 1-2 (default)	+3.3V LVDS
Short 2-3	+5V LVDS

MSATA_SW : MSATA setting	
MSATA_SW	DESCRIPTION
OFF (default)	Auto-Detect
Short 1-2	Mini-PCIE

JP2 : VIO Voltage select	
JP2	DESCRIPTION
Short 1-2	VCC
Short 2-3	VCC3

LVDS2 Panel type Selection (ON=0, OFF=1)			
SW1 4321	EDID Resolution	Color Depth	Channel
0000	800 x 600 @ 60Hz	18-bit	Single
0001	1024 x 768 @ 60Hz	18-bit	Single
0010	1024 x 768 @ 60Hz	24-bit	Single
0011	1280 x 768 @ 60Hz	18-bit	Single
0100	1280 x 800 @ 60Hz	18-bit	Single
0101	1280 x 960 @ 60Hz	18-bit	Single
0110	1280 x 1024 @ 60Hz	24-bit	Dual
0111	1366 x 768 @ 60Hz	18-bit	Single
1000	1366 x 768 @ 60Hz	24-bit	Single
1001	1440 x 900 @ 60Hz	24-bit	Dual
1010	1440 x 1050 @ 60Hz	24-bit	Dual
1011	1600 x 900 @ 60Hz	24-bit	Dual
1100	1680 x 1050 @ 60Hz	24-bit	Dual
1101	1600 x 1200 @ 60Hz	24-bit	Dual
1110	1920 x 1080 @ 60Hz	24-bit	Dual
1111	1920 x 1200 @ 60Hz	24-bit	Dual

F_PANEL1 : External Switches and Indicators panel					
Function	PIN	DESCRIPTION	Function	DESCRIPTION	PIN
	1	NC		PWRLED	6
PWR_BTN	2	PWRBTSW#	PWR_LED	PWRLED	7
	3	GND		GND	8
HDD_LED	4	+V5S	RESET	RESET+	9
	5	HDD_LED-		GND	10

VGA1 : 15-pin Female Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	VCC	10	GND
11	NC	12	DDCDAT
13	HSYNC	14	VSYNC
15	DDCCLK		

LAN1, LAN2: RJ45 LAN Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	LAN1_MDI0+	7	LAN1_MDI2+
2	LAN1_MDI0-	8	LAN1_MDI2-
3.	LAN1_MDI1+	9	LAN1_MDI3+
4.	LAN1_MDI1-	10	LAN1_MDI3-

KB_MS1: 6-pin header KS/MS Connector	
PIN NO.	DESCRIPTION
1	VCC
2	Mouse Data
3	Mouse Clock
4	Keyboard Data
5	Keyboard Clock
6	GND

USB_CON2 : External USB 2.0 Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	USB_VCC	2	USB_VCC
3	DATA-	4	DATA-
5	DATA+	6	DATA+
7	GND	8	GND

USB3,USB4 : Internal USB Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	USB_VCC	2	GND
3	DATA-	4	DATA+
5	DATA+	6	DATA-
7	GND	8	USB_VCC

USB_CON1 : External USB 3.0 Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	10	VCC
2	D-	11	D-
3	D+	12	D+
4	GND	13	GND
5	RX-	14	RX-
6	RX+	15	RX+
7	GND	16	GND
8	TX-	17	TX-
9	TX+	18	TX+

COM4 : Internal Serial Port Connector	
PIN NO.	DESCRIPTION
1	RXD485#
2	RXD485+
3	TXD485+
4	TXD485#

CN11 : Micro-SD Connector	
PIN NO.	DESCRIPTION
1	DAT2
2	DAT3
3	CMD
4	VDD
5	CLK
6	VSS1
7	DAT0
8	DAT1

CON1, COM2, COM3 : Internal Serial Port Connectors	
PIN NO.	DESCRIPTION
1	DATA CARRIER DETECT (DCD)
2	DATA SET READY (DSR)
3	RECEIVE DATA (RXD)
4	REQUEST TO SEND (RTS)
5	TRANSMIT DATA (TXD)
6	CLEAR TO SEND (CTS)
7	DATA TERMINAL READY (DTR)
8	RING INDICATOR (RI)
9	GND (GND)
10	GND (GND)

AUDIO1 : Audio Line-In/Out MIC Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	SPK_R	2	LINE1_R
3	AUD_GND	4	AUD_GND
5	SPK_L	6	LINE1_L
7	AUD_GND	8	AUD_GND
9	MIC1_R	10	MIC1_L

SATA1, SATA2 : Serial ATA Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	5	RX-
2	TX+	6	RX+
3	TX-	7	GND
4	GND	8	N/C

SATA_PWR1, SATA_PWR2: SATA Power Connector	
PIN NO.	DESCRIPTION
1	+5V
2	Ground

CPU_FAN1: CPU Fan Connector	
PIN NO.	DESCRIPTION
1	FANIO
2	+12V (PWM)
3	Ground

LVDS1: LVDS Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	LVDS_DATA0	4	LVDS_DATA0#
5	LVDS_DATA1	6	LVDS_DATA1#
7	LVDS_DATA2	8	LVDS_DATA2#
9	LVDS_CLK	10	LVDS_CLK#
11	LVDS_DATA3	12	LVDS_DATA3#
13	GND	14	GND
15	LDDC_DATA	16	LDDC_CLK
17	VCC_LCD	18	VCC_LCD
19	VCC_LCD	20	VCC_LCD

LVDS2: LVDS Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	LVDS_DATA0	4	LVDS_DATA0#
5	LVDS_DATA1	6	LVDS_DATA1#
7	LVDS_DATA2	8	LVDS_DATA2#
9	LVDS_CLK1	10	LVDS_CLK1#
11	LVDS_DATA3	12	LVDS_DATA3#
13	GND	14	GND
15	LVDS_DATA4	16	LVDS_DATA4#
17	LVDS_DATA5	18	LVDS_DATA5#
19	LVDS_DATA6	20	LVDS_DATA6#
21	LVDS_CLK2	22	LVDS_CLK2#
23	LVDS_DATA7	24	LVDS_DATA7#
25	GND	26	GND
27	VCC_LCD	28	VCC_LCD
29	VCC_LCD	30	VCC_LCD

INV1,INV2 : 5-pin Header Inverter Connector	
PIN NO.	DESCRIPTION
1	LCD_BKLTCTL
2	GROUND
3	+12V
4	GROUND
5	BACKLIGHT ENABLE

CN3 : +12V Power Connector	
PIN NO.	DESCRIPTION
1	GND
2	GND
3	+12V
4	+12V

DIO1 : Digital Input			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Ground	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

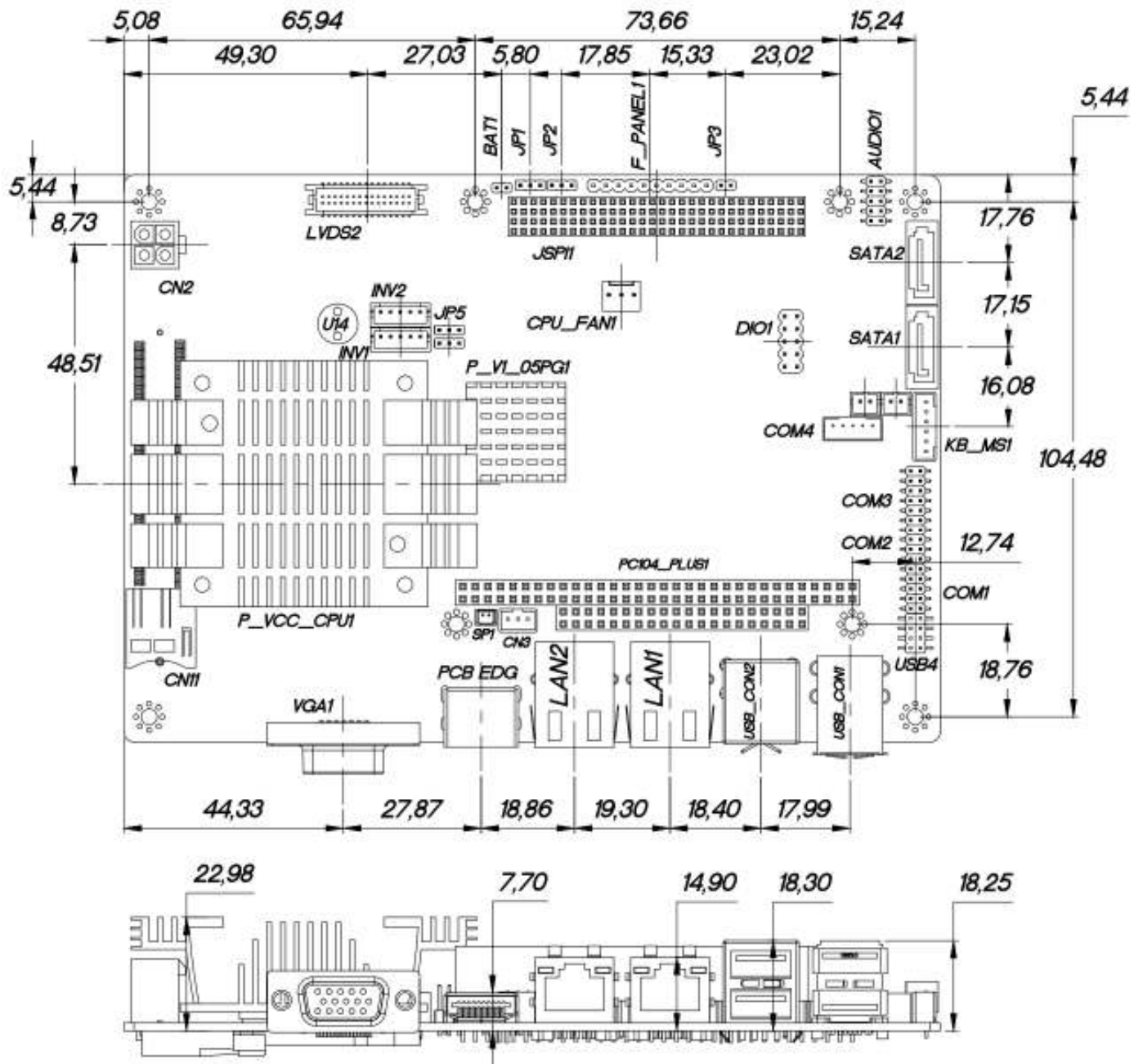
M_PCIE1: Mini PCI-E Card Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PCIE_WAKE#	2	VCC3
3	N/C	4	GND
5	N/C	6	1.5V
7	N/C	8	N/C
9	GND	10	N/C
11	PCIE_CLK#	12	N/C
13	PCIE_CLK	14	N/C
15	GND	16	N/C
17	N/C	18	GND
19	N/C	20	N/C
21	GND	22	PCIRST#
23	PCIE_RXN	24	VCC3
25	PCIE_RXP	26	GND
27	GND	28	1.5V
29	GND	30	SMBCLK
31	PCIE_TXN	32	SMBDATA
33	PCIE_TXP	34	GND
35	GND	36	USB D-
37	GND	38	USB D+
39	VCC3	40	GND
41	VCC3	42	N/C
43	GND	44	N/C
45	N/C	46	N/C
47	N/C	48	1.5V
49	N/C	50	GND
51	N/C	52	VCC3

PC104 PLUS1: PC/104-Plus Connector (120-pin PCI bus)							
PIN	Description	PIN	Description	PIN	Description	PIN	Description
A1	GND	B1	RESERVED1	C1	+5V	D1	AD0
A2	VIO1	B2	AD2	C2	AD1	D2	+5V
A3	AD5	B3	GND	C3	AD4	D3	AD3
A4	CBE0-	B4	AD7	C4	GND	D4	AD6
A5	GND	B5	AD9	C5	AD8	D5	GND
A6	AD11	B6	VIO2	C6	AD10	D6	M66EN
A7	AD14	B7	AD13	C7	GND	D7	AD12
A8	+3V	B8	CBE1-	C8	AD15	D8	+3V
A9	SERR-	B9	GND	C9	SBO-	D9	PAR
A10	GND	B10	PERR-	C10	+3V	D10	SDONE
A11	STOP-	B11	+3V	C11	LOCK-	D11	GND
A12	+3V	B12	TRDY-	C12	GND	D12	DEVSEL-
A13	FRAME-	B13	GND	C13	IRDY-	D13	+3V
A14	GND	B14	AD16	C14	+3V	D14	CBE2-
A15	AD18	B15	+3V	C15	AD17	D15	GND
A16	AD21	B16	AD20	C16	GND	D16	AD19
A17	+3V	B17	AD23	C17	AD22	D17	+3V
A18	IDSEL0	B18	GND	C18	IDSEL1-	D18	IDSEL2
A19	AD24	B19	CBE3-	C19	VIO4	D19	IDSEL3
A20	GND	B20	AD26	C20	AD25	D20	GND
A21	AD29	B21	+5V	C21	AD28	D21	AD27
A22	+5V	B22	AD30	C22	GND	D22	AD31
A23	REQ0-	B23	GND	C23	REQ1-	D23	VIO5
A24	GND	B24	REQ2-	C24	+5V	D24	GNT0-
A25	GNT1-	B25	VIO3	C25	GNT2-	D25	GND
A26	+5V	B26	PCICLK0	C26	GND	D26	PCICLK1
A27	PCICLK2	B27	+5V	C27	PCICLK3	D27	GND
A28	GND	B28	INTD-	C28	+5V	D28	PCIRST-
A29	+12V	B29	INTA-	C29	INTB-	D29	INTC-
A30	-12V	B30	RESERVED2	C30	RESERVED3	D30	GND

PC104: CN8 Connector (ISA bus)							
PIN	Description	PIN	Description	PIN	Description	PIN	Description
A1	-IOCHK	A17	SA14	B1	GND	B17	-DACK1
A2	SD7	A18	SA13	B2	RSTDRV	B18	DRQ1
A3	SD6	A19	SA12	B3	VCC	B19	-REFRESH
A4	SD5	A20	SA11	B4	IRQ9	B20	BCLK
A5	SD4	A21	SA10	B5	NC	B21	IRQ7
A6	SD3	A22	SA9	B6	DRQ2	B22	IRQ6
A7	SD2	A23	SA8	B7	NC	B23	IRQ5
A8	SD1	A24	SA7	B8	-NOWS	B24	IRQ4
A9	SD0	A25	SA6	B9	+12V	B25	IRQ3
A10	IOCHRDY	A26	SA5	B10	GND	B26	-DACK2
A11	AEN	A27	SA4	B11	-SMEMW	B27	TC
A12	SA19	A28	SA3	B12	-SMEMR	B28	BALE
A13	SA18	A29	SA2	B13	-IOW	B29	VCC
A14	SA17	A30	SA1	B14	-IOR	B30	ISAOSC
A15	SA16	A31	SA0	B15	-DACK3	B31	GND
A16	SA15	A32	GND	B16	DRQ3	B32	GND

PIN	Description	PIN	Description	PIN	Description	PIN	Description
C1	GND	C11	-MEMW	D1	GND	D11	-DACK5
C2	-SBHE	C12	SD8	D2	-MEMCS16	D12	DRQ5
C3	SA23	C13	SD9	D3	-IOCS16	D13	-DACK6
C4	SA22	C14	SD10	D4	IRQ10	D14	DRQ6
C5	SA21	C15	SD11	D5	IRQ11	D15	-DACK7
C6	SA20	C16	SD12	D6	IRQ12	D16	DRQ7
C7	SA19	C17	SD13	D7	IRQ15	D17	VCC
C8	SA18	C18	SD14	D8	IRQ14	D18	-MASTER
C9	SA17	C19	SD15	D9	-DACK0	D19	GND
C10	-MEMR	C20	NC	D10	DRQ0	D20	GND

Board Layout: Jumper and Connector Locations



(Unit:mm)