

**3.5" SBC with Intel Atom™ D2550/N2600 processor,
DDR3,VGA/LVDS, Dual GbE, USB 2.0, mSATA,
SATA 3Gb/s,Audio and RoHS**

WAFER-CV-D25501/N26001

Quick Installation Guide

Version 1.0

Jun. 05, 2014

Package List

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

- 1 x WAFER-CV-D25501/N26001 Single Board Computer
- 1 x KB/MS cable
- 1 x Audio cable
- 1 x SATA with 5Voutput cable kit
- 1 x RS-232 cable
- 1 x Power cable
- 1 x Enclosure heatsink
- 1 x Mini Jumper Pack
- 1 x Utility CD (within manual)
- 1 x QIG (Quick Installation Guide)
- 1 x One Key Recovery CD



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Specifications

- CPU:
 - 1.86GHz Intel® Atom™ D2550 dual core processor
 - 1.6GHz Intel® Atom™ N2600 dual core processor
- System chipset: Intel® NM10
- BIOS: UEFI BIOS
- System memory:
 - 1 x 1066MHz DDR3/DDR3L SO-DIMM up to 4GB for D2550
 - 1 x 800MHz DDR3/ DDR3L SO-DIMM up to 2GB for N2600
- 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
 - 6 x USB 2.0 (2 on rear, 4 by pin header)
 - 1 x 6-pin PS/2 KB/MB
- Expansion:
 - 1 x Full-size PCIe Mini card slot w/ mSATA support
 - 1 x Half-size PCIe Mini card slot
- Digital I/O: 8-bit digital I/O (4-bit input, 4-bit output)
- Display Output:
 - 1 x VGA
 - LVDS1 integrated in D2550/N2600
 - Single-channel 24-bit LVDS by D2550, resolution up to 1440x900
 - Single-channel 18-bit LVDS by N2600, resolution up to 1366x768
 - LVDS2 drives by CH7511 DP to LVDS converter
 - Dual-channel 24-bit LVDS, resolution up to 1920x1200 for D2550, 1600x1200 for N2600
- Graphic Engine:
 - Intel® GMA 3650 with 640MHz graphic core speed for D2550
 - Intel® GMA 3600 with 400MHz graphic core speed for N2600

- Audio: Realtek ALC662 HD Audio Codec (Line-in, Line-out, Mic)
- SMBus: 4-pin (1x4) wafer
- Watchdog Timer:
Software programmable supports 1~255sec. System reset
- Power supply: 12V only, AT/ATX support
- Power Consumption:
12V@1.53A (1.86GHz Intel® Atom™ D2550 with 1GB 1066MHz DDR3 memory)
12V@1.15A (1.6GHz Intel® Atom™ N2600 with 1GB 1066MHz 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
- Humidity: Operation: 5%~95% non-condensing
- Dimensions: 146mm x 102mm

Ordering Information

- WAFER-CV-D25501-R10 :
3.5" SBC with Intel Atom D2550 1.86GHz,DDR3,VGA/Dual LVDS,Dual GbE,USB 2.0,SATA 3Gb/s,Audio and RoHS
- WAFER-CV-N26001-R10 :
3.5" SBC with Intel Atom N2600 1.60GHz,DDR3,VGA/Dual LVDS,Dual GbE,USB 2.0,SATA 3Gb/s,Audio and RoHS
- 32001-008600-100-RS : Dual ports USB cable
- 32205-003800-100-RS : RS-422/485 cable, 200mm

Jumpers setting and Connectors

LABEL	FUNCTION
JP1	LVDS2 Voltage Selection
JP2	AT/ATX Power Mode Setting
JP3	CMOS state setting
JP4	LVDS1 Voltage Selection
SW1	LVDS2 Panel type Selection
VGA1	VGA 15-pin Female Connector
LAN1	LAN1 Connectors
LAN2	LAN2 Connectors
KB_MS1	KEYBOARD & MOUSE Connectors
USB1	External 2 Port USB Connectors
USB2 USB3	Internal Pin-header 4 Port USB Connectors
COM1	External Serial Port Connector
COM2 COM3 COM4	Internal Serial Port Connectors
AUDIO1	HD Audio Connector
SATA1 SATA2	Serial ATA Connectors
SATA_PWR1	SATA Power Connector
CPU_FAN1 SYS_FAN1	CPU and System 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	Power & HDD LED Connector
RST_BTN1	Reset Button Connector
PWR_BTN1	Power Button Connector
CN3	Power Source Connector
M_PCIE1 M_PCIE2	Mini PCI-E Card Connector
CN6	LVDS2 backlight control Connector

JP1 : LVDS2 Voltage Selection	
PIN NO.	DESCRIPTION
Short 1-2 (default)	+3.3V LVDS
Short 2-3	+5V LVDS

JP2 : AT/ATX Power Mode setting	
PIN NO.	DESCRIPTION
Short 1-2 (default)	ATX Power Mode
OFF	AT Power Mode

JP3 : Clear CMOS Setup	
JP3	DESCRIPTION
Short 1-2 (default)	Keep CMOS Setup (Normal Operation)
Short 2-3	Clear CMOS Setup

JP4 : LVDS1 Voltage Selection	
JP4	DESCRIPTION
Short 1-2 (default)	+3.3V LVDS
Short 2-3	+5V LVDS

LVDS2 Panel type Selection			
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

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

USB1 : External USB 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

USB2, USB3 : 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

COM1 : External Serial Port Connectors		
PIN NO.	DESCRIPTION	
1	DATA CARRIER DETECT	(DCD)
2	RECEIVE DATA	(RXD)
3	TRANSMIT DATA	(TXD)
4	DATA TERMINAL READY	(DTR)
5	GND	
6	DATA SET READY	(DSR)
7	REQUEST TO SEND	(RTS)
8	CLEAR TO SEND	(CTS)
9	RING INDICATOR	(RI)

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

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 Power Connector	
PIN NO.	DESCRIPTION
1	+5V
2	Ground

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

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

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

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

CN2 : PWR & HDD LED Connector		
	PIN	DESCRIPTION
+5V	1	VCC
	2	GND
Power LED	3	PWR_LED+
	4	PWR_LED-
HDD LED	5	HDD_LED+
	6	HDD_LED-

RST_BTN1 : Reset Button Connector		
	PIN	DESCRIPTION
RESET	1	RESET+
	2	RESET-

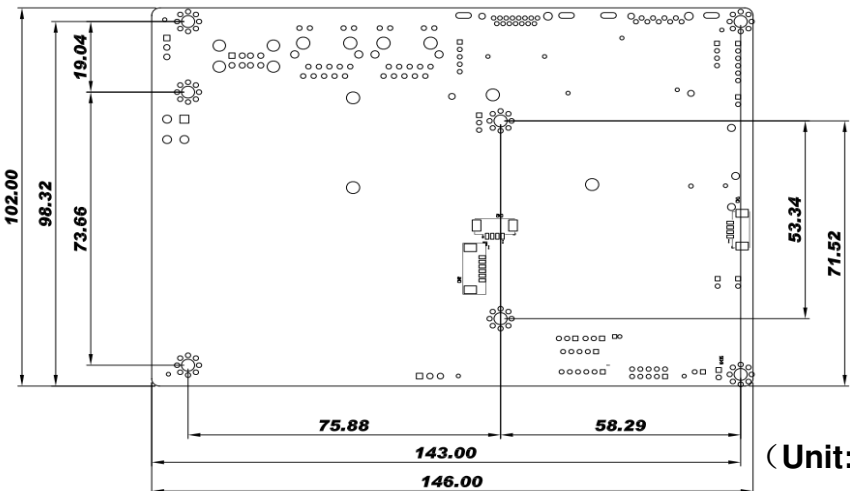
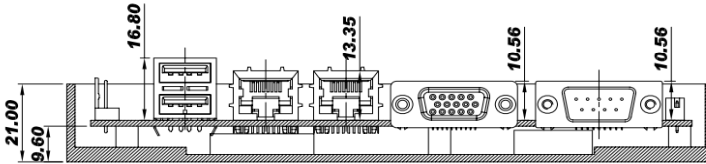
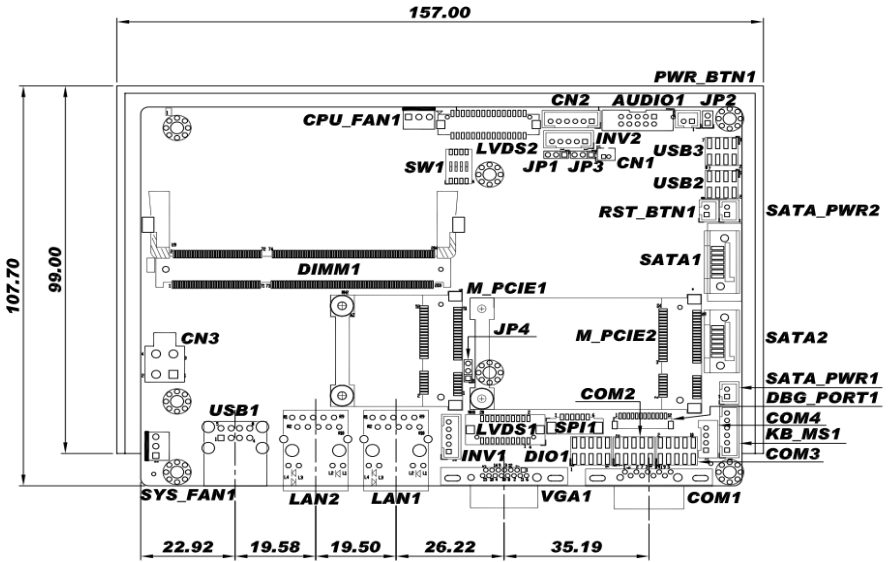
PWR_BTN1 : Power Button Connector		
	PIN	DESCRIPTION
PWRBTN	1	PWR_BTN+
	2	PWR_BTN-

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

CN6 : LVDS2 backlight control Connector		
Function	PIN	DESCRIPTION
Panel power Button	1	PWRDN
	2	GND
Panel Brightness +	3	BLUP
	4	GND
Panel Brightness -	5	BLDN
	6	GND

M_PCIE1/ M_PCIE2: 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-
37	GND	38	USB+
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

Board Layout: Jumper and Connector Locations



(Unit:mm)