

3.5" SBC, Socket 479 with Intel® Pentium® M/ Celeron® M processor with 400MHz FSB CPU, VGA/LVDS, PCIe GbE, USB2.0, SATA and audio

WAFER-9102

Quick Installation Guide

Version 1.0

Oct. 01, 2008

Package Contents

WAFER-9102 package includes the following items:

- 1 x WAFER-9102 Single Board Computer
- 1 x Mini Jumper Pack
- 2 x SATA Cable
- 1 x KB/MS Cable
- 1 x Audio Cable
- 1 x Cooler (for WAFER-9102-R10, socket type only)
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)



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Specifications

- CPU:
 - Socket 479 Intel® Pentium® M/ Celeron® M processor with a 400 MHz FSB
 - On board Intel® Celeron® M 1GHz zero cache or 1GHz 512KB cache processor
- System Chipset:
 - Intel® 910GMLE + ICH-6M
- BIOS
 - AMI Flash BIOS
- System Memory
 - One x 200-pin DDRII SDRAM SO-DIMM 400 MHz (system max. 2GB)
- Ethernet: One Realtek RTL8111CP GbE chipsets
- I/O Interface
 - 1 x RS-232
 - 1 x RS-232/422/485
 - 6 x USB 2.0 (2 by rear side, 4 by pin-header)
 - 2 x SATA
 - 1 x IDE
 - 1 x LPT
 - 1 x KB/MS (by 6-pin wafer-header)
- Expansion
 - 1 x PCI-104 (PCI bus)
- Digital I/O: 8-bit digital I/O, 4-bit input/4-bit output
- IrDA: 1x Infrared Interface by super I/O
- Super I/O: ITE IT8178F
- Display Interface:
 - Intel® Graphics Media Accelerator 900
 - VGA output Integrated in Intel® 910GMLE
 - 18/24-bit dual channel LVDS
- Audio:
 - Realtek ALC655 with AC'97 codec by pin-header

- SSD: CF type II
- WDT: Software programmable 1-255 sec. system reset
- Power Supply: +12V/ +5V, AT/ATX Power
- Power Consumption:
5V@ 3.11A, 12V@0.37A (Intel® Celeron® M 373 1.0G with 1GB DDR2)
5V@2.94A, 12V@1.57A (Intel® Pentium® M 725 1.6G with 1GB DDR2)
- Temperature: 0 ~ 60°C (32 ~ 140°F)
- Humidity: Operating 5% ~ 95% non-condensing
- Dimension: 146mm x 102mm
- Weight: GW: 700g; NW: 230g

Ordering Information

WAFER-9102-R10

3.5" SBC, Socket479 Intel® Pentium® M/ Celeron® M CPU with VGA/LVDS, PCIe GbE, USB2.0, SATA and Audio

WAFER-9102-1GZ-R10

3.5" SBC with ULV Intel® Celeron® M 1GHz zero cache CPU with VGA/LVDS, PCIe GbE, USB2.0, SATA and Audio

NOVA-9102-1GZ512-R10

3.5" SBC with ULV Intel® Celeron® M 1GHz 512KB cache CPU with VGA/LVDS, PCIe GbE, USB2.0, SATA and Audio

32200-026500-RS: RS-232/422/485 cable

32000-070300-RS: Dual Port USB cable

32100-043403-RS: ATX Power Cable

32100-088600-RS: SATA Power Cable

32200-015100-RS: LPT cable

32200-000009-RS: 44pin 2.5" IDE Cable

32200-008800-RS: 44pin 2.5"/3.5" IDE Cable

Jumpers setting

LABEL	FUNCTION
J_CMOS1	CMOS state setting
JP2	COM2 Port Mode setting
J_VLVDS1	LVDS1 Voltage Selection
JCF1	CF Card setting
JP3	PCI-104 VIO Voltage select
ATXCTL1	AT Power Mode Setting

J_CMOS1 : Clear CMOS Setup	
J_CMOS1	DESCRIPTION
Short 1-2 (default)*	Keep CMOS Setup (Normal Operation)
Short 2-3	Clear CMOS Setup

JP2 : configure COM2 Mode	
JP1	DESCRIPTION
Short 1-2 (default)	RS - 232
Short 3-4	RS - 422
Short 5-6	RS - 485

J_VLVDS1 : LVDS Voltage Selection	
J_VLVDS1	DESCRIPTION
1-2	+3.3V LVDS
2-3	+5V LVDS

JCF1 : configure CF Card type	
JCF1	DESCRIPTION
Open (default)	Slave
Short 1-2	Master

JP3: PCI-104 VIO Voltage select	
J2	DESCRIPTION
Short 1-2	VCC (+5V)
Short 2-3	VCC3 (+3.3V)

ATXCTL1 : AT Power Mode setting	
ATXCTL1	DESCRIPTION
2-3 (default)	AT Power Mode
Open	ATX Power Mode

Connectors

LABEL	FUNCTION
KB_MS1	Keyboard and Mouse Connector
CPU_FAN1	CPU Fan Connector
LAN1	RJ45 LAN Connector
FAN1	System Fan Connector
PWRBTN1	Power Button
ATXCTL1	ATX Power Control Connector
RESET1	Reset Button
IR1	Infrared Interface Connector
ATXPWR1	Power Source Connector
SATA1 SATA2	Serial ATA Connectors
VGA1	VGA 10-pin Connector
COM1	COM Port Connector
LED_C1	LED Indicators +5V Power output
IDE1	IDE Connectors
LPT1	Parallel Port Connector
COM2	Internal Serial Port 14-pin Connectors
DIO1	Digital I/O Connector
LVDS1	LCD Panel LVDS Interface Connector
INVERTER1	LVDS1 Panel Backlight +12V Power Source
PC104_PLUS1	PC104 Plus Connector
CF1	Compact Flash Slot
USB01 USB23	Internal 4 Port USB Connectors
USB_C45	USB Port Connector
AUDIO1	AC'97 Connector
BAT1	Battery connector

KB_MS1: 6-pin Mini-DIN Keyboard/Mouse Connector	
PIN NO.	DESCRIPTION
1	VCC (+5V)
2	Mouse Data
3	Mouse Clock
4	Keyboard Data
5	Keyboard Clock
6	GND

CPU_FAN1 : CPU Fan Connector	
PIN NO.	DESCRIPTION
1	GND
2	+12V
3	CPUFANIN
4	CPUFANOUT

LAN1 : RJ45 LAN Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MDIA3-	5	MDIA1+
2	MDIA3+	6	MDIA2+-
3.	MDIA2-	7	MDIA0-
4.	MDIA1-	8	MDIA0+

FAN1 : System Fan Connector	
PIN NO.	DESCRIPTION
1	SYSFANIN
2	VCC (+5V)
3	GND

ATXCTL1 : ATX Power Control Connector	
PIN NO.	DESCRIPTION
1	5VSB
2	GND
3	PS_ON#

PWRBTN1 : Power Button	
PIN NO.	DESCRIPTION
1	PWRBTSW-
2	GND

RESET1 : Power Button	
PIN NO.	DESCRIPTION
1	PM_RESET
2	GND

IR1: Infrared Interface connector	
PIN NO.	DESCRIPTION
1	VCC (+5V)
2	NC
3	IR-RX
4	GND
5	IR-TX

ATXPWR1 : ATX POWER IN	
PIN NO.	DESCRIPTION
1	+12V
2	GND
3	GND
4	VCC (+5V)

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

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

COM1 : Serial Port Connector		
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#)

LED_C1: 6-pin LED indicators		
	PIN NO.	DESCRIPTION
+5V Power Output	1	VCC (+5V)
	2	GND
PWRLED	3	VCC (+5V)
	4	GND
HDDLED	5	VCC (+5V)
	6	-HDLED

IDE1 : IDE Interface Connector			
PIN NO.	DESCRIPTION	PIN NO.	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
41	VCC (+5V)	42	VCC (+5V)
43	GND	44	N/C

LPT1 : Parallel Port Connector			
PIN NO.	DESCRIPTION	PIN NO.	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	26	NC

COM2 : Internal Serial Port Connector			
PIN NO.	DESCRIPTION	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	10	GND
11	TXD485+	12	TXD485#
13	RXD485+	14	RXD485#

DIO1 : Digital Input / Output Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	VCC (+5V)
3	Output 3	4	Output 2
5	Output 1	6	Output 0
7	Input 3	8	Input 2
9	Input 1	10	Input 0

LVDS1: LVDS Connector			
PIN NO.	DESCRIPTION	PIN NO.	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	VCC_LCD	28	VCC_LCD
29	VCC_LCD	30	VCC_LCD

INVERTER1 : 5-pin Header Inverter Connector	
PIN NO.	DESCRIPTION
1	LCD_BKLTCTL
2	GND
3	+12V
4	GND
5	BACKLIGHT ENABLE

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

CF1 : CF Card Interface Slot			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	26	CD1#
2	D3	27	D11
3	D4	28	D12
4	D5	29	D13
5	D6	30	D14
6	D7	31	D15
7	CE#	32	CE2#
8	A10	33	VS1#
9	OE#	34	IOR#
10	A9	35	IOW#
11	A8	36	WE#
12	A7	37	IRQ
13	VCC	38	VCC
14	A6	39	CSEL#
15	A5	40	VS2#
16	A4	41	RESET#
17	A3	42	WAIT#
18	A2	43	INPACK#
19	A1	44	REG#
20	A0	45	BVD2
21	D0	46	BVD1
22	D1	47	D8
23	D2	48	D9
24	IOCS16#	49	D10
25	CD2#	50	GND2

USB01 & USB23 : Internal USB Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC (+5V)	2	GND
3	DATA-	4	DATA+
5	DATA+	6	DATA-
7	GND	8	VCC (+5V)

USB_C45: External USB Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC (+5V)	5	VCC (+5V)
2	DATA-	6	DATA-
3	DATA+	7	DATA+
4	GND	8	GND

AUDIO1: AC'97 Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	LINE_OUTR	2	LINEIN_R
3	GND_AUDIO	4	GND_AUDIO
5	LINE_OUTL	6	LINEIN_L
7	GND_AUDIO	8	GND_AUDIO
9	MICIN	10	MICIN

BAT1 : +3V Battery Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	BAT (+3V)	2	GND

Board Layout: Jumper and Connector Locations



