

Mini ITX SBC with Intel® Atom™ N270 1.6GHz Processor, DC 12V input, VGA/36+48 bits LVDS, PCIe GbE, USB, SATA and Audio

KINO-945GSE2

Quick Installation Guide

Version 1.0

May 26, 2010

Package Contents

KINO-945GSE2 package includes the following items:

- 1 x KINO-945GSE2 Single Board Computer
- 1 x Dual RS-232 cable
- 1 x PS/2 KB/MS Y cable
- 2 x SATA Signal + SATA +5V power Output Cable kit
- 1 x Audio cable
- 1 x I/O Shielding
- 1 x Mini Jumper Pack
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)



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Specifications

- CPU: Intel® Atom™ N270 1.6GHz/512KB L2 Cache processor with a FSB 533MHz
- System Chipset: Intel® 945GSE +ICH7M
- BIOS: AMI BIOS
- System memory: 1 x 200-pins 533/400MHz DDR2 SDRAM SO-DIMM Supported (max. 2GB)
- Ethernet: 1 x Realtek RTL8111CP PCIe GbE Controller (PCIe x1 Interface)
- I/O Interface:
 - 2 x SATA (2 x SATA +5V Power Output by 1x4pin wafer-header)
 - 6 x USB 2.0 (2 by header, 4 on rear side)
 - 4 x RS-232 (3 by pin-header, 1 on rear side)
 - 2 x RS-232/422/485
 - 1 x PS/2 KB/MS by 1x6 pins wafer-header
 - 1 x LPT
- Audio: Realtek ALC655 AC'97 CODEC by 2x5 pin-header
 - Line-out Audio Jack on rear side
 - SPDIF by 1x5pin pin-header
- Expansion:
 - 1 x PCI
 - 1 x PCIe mini card (PCIe x1 + USB Signal)
- Digital I/O: 8-bit digital I/O, 4-bit input/ 4-bit output by super I/O ITE Fintek 81865
- Infrared Interface: 1x Infrared Interface by super I/O Fintek 81865
- Super I/O: Fintek 81865
- FAN: 1 x 3-pin FAN Connector
- Watchdog timer: Software programmable supports 1~255 sec. system reset by First Super I/O: Fintek 81865
- Display Interface:
 - VGA Integrated in Intel® 945GSE
 - 18-bit dual-channel LVDS from Intel® 945GSE
 - 24-bit dual-channel LVDS by Chrontel CH7308B
 - HDTV by pin-header

- Power Supply:
 - Single Voltage +12V DC Input, AT/ATX Mode support
 - 1 x Main Power Input 4-pin DC Jack on rear side
 - 1 x internal 4-pin (2x2pin) +12V Main Power Input Connector
- Power Consumption:
 - 12V@2.94A (Intel® Atom™ N270 1.6GHz Processor with 2GB DDR2 667MHz SO-DIMM DRAM)
- Operating Humidity: 5% ~ 95%, non-condensing
- Operating Temperature: 0 ~ 60°C(32 ~ 140°F)
- Dimension: 170 mm x 170 mm
- Weight: GW: 1000g; NW: 350g

Ordering Information

KINO-945GSE2-N270-R10:

Mini ITX SBC with Intel® Atom™ N270 1.6GHz Processor, DC 12V input, VGA/36+48 bits LVDS, PCIe GbE, USB, SATA and Audio

CB-USB02-RS: Dual ports USB cable

32200-015100-RS: LPT cable

32200-833600-RS: RS-422/485 cable

HDTVCABLESET-01: HDTV cable set with S-Video, composite and component Interfaces

WMPCIE-V01-R10: PCIe mini card wireless LAN module

WMUSB-V01-R10: USB mini card wireless LAN module

32100-192900-RS: One 4-pin (2x2pin) to one 4-pin (1x4pin) DC power input cable

Jumpers setting

LABEL	FUNCTION
J_CMOS1	Clear CMOS Setup
JP2 JP4	Configure COM4 Mode Configure COM6 Mode
J_VLVDS1	LVDS1 Voltage Selection
J_VLVDS2	LVDS2 Voltage Selection
ATXCTL1	AT/ATX Power Mode Setting
J_LCD_TYPE1	LVDS1 Panel Resolution Selection
J_LCD_TYPE2	LVDS2 Panel Resolution Selection

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 COM4 Mode JP4: Configure COM6 Mode	
JP2、JP4	DESCRIPTION
Short 1-2 (default)	RS - 232
Short 3-4	RS - 422
Short 5-6	RS - 485

J_VLVDS1: LVDS1 Voltage Selection	
J_VLVDS1	DESCRIPTION
1-2 (default)	+3.3V LVDS
2-3	+5V LVDS

ATXCTL1: AT/ATX Power Mode Setting AT Mode: Short 2-3 (Default) ATX Mode: Use PS_ON# & 5VSB cable	
ATXCTL1	DESCRIPTION
1-2	ATX Power Mode
2-3 (default)	AT Power Mode

J_VLVDS2: LVDS2 Voltage Selection	
J_VLVDS2	DESCRIPTION
1-2 (default)	+3.3V LVDS
2-3	+5V LVDS

J_LCD_TYPE1: LVDS1 Panel Resolution type select				Panel Resolution
7-8	5-6	3-4	1-2	
Open	Open	Open	Open	640x480 18-bit
Open	Open	Open	Short	800x480 18-bit
Open	Open	Short	Open	800X600 18-bit (default)
Open	Open	Short	Short	1024X768 18-bit
Open	Short	Open	Open	1280x1024 36-bit
Open	Short	Open	Short	1400x1050 36-bit
Open	Short	Short	Open	1440x900 36-bit
Open	Short	Short	Short	1600x1200 36-bit

J_LCD_TYPE2: LVDS2 Panel Resolution type select		Panel Resolution
3-4	1-2	
Open	Short	1024x768 24-bit (default)
Short	Open	1366x768 24-bit
Open	Open	1440x900 48-bit
Short	Short	1280x1024 48-bit

Table of Connectors

LABEL	FUNCTION
VGA1	15-pin D-sub VGA Female Connector
USB1 USB2	External USB Connectors
USB4	Internal USB Connector
LAN1	RJ45 LAN Connector
KB_MS1	Keyboard/Mouse 6-pin Wafer Connector
COM1	External Serial Port D-sub Connector (RS-232)
COM2~COM6	Internal Serial Port Connectors (RS-232)
JP3 JP5	COM4 · COM6 Internal Serial Port Connectors (RS-422/485)
SATA1 SATA2	Serial ATA Connectors
SATA_PWR1 SATA_PWR2	Serial ATA Power Connectors
LPT1	Parallel Port Connector
TV1	Video output for television Connector
AUDIO1	AC'97 Audio Connector
LINE_OUT1	External Audio Speak Out Connector
SPDIF1	SPDIF Connector
IR1	Infrared Interface Connector
CPU_FAN1	Fan Connector
DIO1	Digital I/O Connector
BT1	Battery connector
SPI1	Flash BIOS SPI ROM Connector
LVDS1	LVDS1 Dual-channel Connector (18-bit)
INVERTER1	LVDS1 Panel Backlight +12V Power Source
F_PANEL1	PWR & RST Buttons and Indicators
ATXCTL1	ATX Power Control Connector
LVDS2	LVDS2 Dual-channel Connector (24-bit)
INVERTER2	LVDS2 Panel Backlight +12V Power Source
PWR1	Adapter DC +12V Main Power Input connector
PWR2	Power Supply DC +12V Main Power Input Connector
MINIPCIE1	PCIe Mini Card Slot
PCI1	PCI Slot
DIMM1	DDR2 SO-DIMM slot

VGA1: 15-pin D-sub VGA 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	DCCDAT
13	HSYNC	14	VSYNC
15	DCCCLK		

USB1 & USB2: External USB Connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC (+5V)	5	VCC (+5V)
2	DATA4-	6	DATA5-
3	DATA4+	7	DATA5+
4	GROUND	8	GROUND

USB4: 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)

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+

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

COM1: External Serial Port D-sub Connector (RS-232)	
PIN NO.	DESCRIPTION
1	DATA CARRIER DETECT (DCD#)
2	RECEIVE DATA (RXD)
3	TRANSMIT DATA (TXD)
4	DATA TERMINAL READY (DTR#)
5	GND (GND)
6	DATA SET READY (DSR#)
7	REQUEST TO SEND (RTS#)
8	CLEAR TO SEND (CTS#)
9	RING INDICATOR (RI#)

COM2~COM6 : Internal Serial Port Connectors (RS-232)			
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	N/C

JP3: COM4 Internal Serial Port Connector (RS-422/485)			
JP5: COM6 Internal Serial Port Connector (RS-422/485)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	TX_422-	2	TX_422+
3	RX_422-	4	RX_422+
5	D_485-	6	D_485+

SATA1 & SATA2 : Serial ATA Connectors			
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 : Serial ATA Power Connectors	
PIN NO.	DESCRIPTION
1	+5V
2	GND
3	GND
4	+12V

LPT1 : Parallel Port Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	STROBE#	2	AUTO FORM FEED #
3	DATA0	4	ERROR#
5	DATA1	6	INITIALIZE#
7	DATA2	8	PRINTER SELECT LN#
9	DATA3	10	GND
11	DATA4	12	GND
13	DATA5	14	GND
15	DATA6	16	GND
17	DATA7	18	GND
19	ACKNOWLEDGE#	20	GND
21	BUSY	22	GND
23	PAPER EMPTY	24	GND
25	PRINTER SELECT	26	N/C

TV1: Video output for television Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	TVDAC_B
3	GND	4	TVDAC_C
5	GND	6	TVDAC_A

AUDIO1 : AC'97 Audio 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-R	10	MICIN-L

LINE_OUT1: External Audio Speak Out Connector	
PIN NO.	DESCRIPTION
1	LINEOUT

SPDIF1 : SPDIF Connector	
PIN NO.	DESCRIPTION
1	+5V
2	N/C
3	SPDIF_OUT
4	GND
5	SPDIF_IN

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

CPU_FAN1 : CPU Fan Connector	
PIN NO.	DESCRIPTION
1	FANIO1
2	+12V (PWM)
3	GND

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

BT1 : +3.3V Battery Connector	
PIN NO.	DESCRIPTION
1	BAT (+3.3V)
2	GND

SPI1 : Flash BIOS SPI ROM Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	SPI_VCC (+3.3V)	5	GND
2	SPI_CS#	6	SPI_CLK
3	SPI_MISO	7	SPI_MOSI
4	N/C	8	N/C

LVDS1: Dual-channel LVDS Connector (18-bit)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
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	NC	12	NC
13	GND	14	GND
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	NC	24	NC
25	GND	26	GND
27	VCC_LCD	28	VCC_LCD
29	VCC_LCD	30	VCC_LCD

INVERTER1: LVDS1 Panel Backlight +12V Power Source	
PIN NO.	DESCRIPTION
1	LCD_BKLTCTL
2	GND
3	+12V
4	GND
5	BACKLIGHT ENABLE

F_PANEL1: PWR & RST Buttons and Indicators panel					
	PIN	DESCRIPTION	PIN	DESCRIPTION	
PWRBTN	1	PWRBTSW-	2	VCC (+5V)	Power LED
	3	GND	4	GND	
HDD LED	5	VCC (+5V)	6	SYSRST-	RESET
	7	-HDLED	8	GND	

ATXCTL1 : ATX Power Control Connector AT Mode: Short 2-3 (Default) ATX Mode: Use PS_ON# & 5VSB cable	
PIN NO.	DESCRIPTION
1	5VSB
2	PS_ON#
3	GND

LVDS2: Dual-channel LVDS Connector (24-bit)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
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	GND	14	GND
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	GND	26	GND
27	VCC_LCD	28	VCC_LCD
29	VCC_LCD	30	VCC_LCD

INVERTER2: LVDS2 Panel Backlight +12V Power Source	
PIN NO.	DESCRIPTION
1	LCD_BKLTCTL
2	GND
3	+12V
4	GND
5	BACKLIGHT ENABLE

PWR1: Adapter DC +12V Main Power Input connector	
CN7	DESCRIPTION
1	+12V
2	GND
3	+12V
4	GND
5	GND

PWR2: Power Supply DC +12V Main Power Input Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	+12V	8	+12V

MINIPCIE1: PCIe Mini Card Slot			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PCIE_WAKE#	2	VCC3
3	N/C	4	GND
5	N/C	6	1.5V
7	CLKREQ#	8	LFRAME#
9	GND	10	LAD3
11	CLK-	12	LAD2
13	CLK+	14	LAD1
15	GND	16	LAD0
17	PCIRST#	18	GND
19	LPC	20	VCC3
21	GND	22	PCIRST#
23	PERN2	24	3VDual
25	PERP2	26	GND
27	GND	28	1.5V
29	GND	30	SMBCLK
31	PETN2	32	SMBDATA
33	PETP2	34	GND
35	GND	36	USB-
37	N/C	38	USB+
39	N/C	40	GND
41	N/C	42	N/C
43	N/C	44	RF_LINK#
45	N/C	46	BLUELED#
47	N/C	48	1.5V
49	N/C	50	GND
51	N/C	52	VCC3

Board Layout: Jumper and Connector Locations

