

**Mini-ITX SBC with Intel® Atom™ N270 1.6GHz, VGA/DVI/TV,  
Dual PCIe GbE, USB2.0, 10COM, SATA and Audio**

# **KINO-945GSE3-N270-R10**

## **Quick Installation Guide**

Version 1.01

Sep. 6<sup>th</sup>, 2012

### **Package Contents**

KINO-945GSE3-N270-R10 includes the following items:

- 1 x KINO-945GSE3-N270-R10 Single Board Computer
- 2 x SATA cable
- 1 x I/O shielding
- 2 x 4 port RS-232 cable
- 1 x Mini Jumper Pack
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)
- 1 x One Key Recovery Utility CD



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## Specifications

- CPU: Intel® Atom™ N270 processor 1.6GHz System
- Chipset: Intel® 945GSE+ Intel® ICH7M
- BIOS: AMI BIOS
- System memory: One 200-pin 400/533 DDR2 SDRAM SO-DIMM supported (system max. 2GB)
- Ethernet: Dual Realtek RTL8111E PCIe GbE Controller with ASF2.0 support,
- I/O Interface:
  - 2 x SATA
  - 6 x USB 2.0
  - 1 x CF Type II
  - 9 x RS-232
  - 1 x RS-232/422/485
  - 1 x IDE
  - 1 x 6-pin header for KB/MS
  - 2 x PS/2 for KB/MS
  - 1 x LPT
- Expansions:
  - 1 x PCI slot
  - 1 x PCIe mini card Slot
- Audio: Realtek ALC655
- Digital I/O: 8-bit digital I/O, 4-bit input/ 4-bit output by super I/O
- Super I/O: FINTEK F81865F and F81216
- Display Interface:
  - VGA integrated in Intel 945GSE
  - Support HDTV resolution up to 1080i by component
  - 18-bits Dual channel LVDS by Intel 945GSE
  - DVI-D support by Silcon Image Sil1362
- Watchdog timer: Software programmable supports 1~255 sec. system reset
- Power Supply: AT/ATX support
- Power Consumption:

5V@4.5A, 12V@0.43A,

(Intel Atom™ N270 1.6GHz with 2GB DDR2)

- Humidity: Operation: 5% ~ 95%, non-condensing
- Temperature: -10 ~ 60°C
- Dimension: 170 mm x 170 mm
- Weight: GW: 1100g; NW: 370g

## Ordering Information

### **KINO-945GSE3-N270-RS:**

Mini-ITX SBC with Intel® Atom™ N270 1.6G, VGA/DVI/TV, Dual PCIe GbE, USB2.0, 10COM, SATAII and Audio, ROHS

**CB-USB02-RS:** Dual Ports USB Cable with Bracket

**HDTVCABLESET-01:** HDTV Cable Set with S-Video, Composite and Component Interfaces

**32102-000100-200-RS:** SATA Power Cable

**32200-0833600-RS:** RS-422/485 cable

**32200-000009-RS:** 44pin 2.5" IDE cable

**32200-025401-RS:** RS-232/422/485 cable

**32200-023800-RS:** Keyboard/Mouse Y cable

## Jumpers setting

### **J\_CMOS1: Clear CMOS Setup**

<b>J_CMOS1</b>	<b>DESCRIPTION</b>
Short 1-2	Keep CMOS Setup(default)
Short 2-3	Clear CMOS Setup

### **J\_LCD\_TYPE1: Panel ID for BIOS (2\*4 pin header, pitch 2mm)**

<b>J_LCD_TYPE1</b>	<b>DESCRIPTION</b>
1-2	800*480 18bit
3-4	800*600 18bit(default)
5-6	1280*1024 36bit
7-8	640*480 18bit
1-2 · 3-4	1024*768 18bit
1-2 · 5-6	1400*1050 36bit
3-4,5-6	1440*900 36bit
1-2 · 3-4,5-6	1600*1200 36bit

<b>J_USBP1: USB Power Selection Switch ( 1*3 pin header, pitch 2mm)</b>	
J_USBP1	DESCRIPTION
1-2	VCC5DUAL
2-3	VCC5(default)

<b>JP1: COM3 RS-232/422/485 Selection (2*3 pin header, pitch 2.00mm)</b>	
JP1	DESCRIPTION
Short 1-2	RS – 232(default)
Short 3-4	RS – 422
Short 5-6	RS – 485

<b>JP2: COM3 RS-232/422/485 Selection (2*3 pin header, pitch 2.00mm)</b>	
JP2	DESCRIPTION
1-2,3-4	RS-422
3-5,2-6	RS-485

<b>J_VLVDS1: LVDS voltage selection</b>	
J_VLVDS1	DESCRIPTION
1-2	3.3V(Default)
2-3	5V

<b>J_PSON1 : AT/ATX Mode Selection( 1*3 pin header, pitch 2mm)</b>	
J_PSON1	DESCRIPTION
None	ATX
2-3	AT(default)

<b>ATXCTL1 : AT/ATX select connector(2 Pin Header)</b>	
PIN NO.	DESCRIPTION
OPEN	ATX
SHORT	AT(default)

<b>J_CF1: CF Selection Connector(2 pin header)</b>	
PIN 1-2	DESCRIPTION
Short	Master
Open	Slave

## Table of Connectors

LABEL	FUNCTION
COM3-6	Internal RS232 pin herder
COM7-10	Internal RS232 pin header
DIO1	Internal DIO pin header
IR1	IR controller by pin header
TV1	HDTV connector by pn herder
USB1	USB6,6 connector by pin header
KBMS2	PS/2 keyboard Mouse connector
F_Panel	HDD, reset indicators
J1	CPU Fan Connector
DIMM1	Internal 2x4 pin header Connectors
VIDEO1	External VGA plus DVI-D
COM1	COM1,COM2 COMBO RS232
SATA1~2	Serial ATA Connectors
LAN/USB1	Giga LAN connector RJ45,USB1and USB2
LAN/USB2	Giga LAN connector RJ45,USB3 and USB4
LVDS1	LVDS connector
PWR1	ATX Power connector
Inverter1	LVDS inverter connector
IDE1	IDE connector
Mini_PClc1	PCIe mini Card Slot
J2	Compact Flash Slot
DIMM1	DIMM Slot
AUDIO1	Line out and mic-in connector

### IR1: IR controller by pin herder

PIN NO.	DESCRIPTION
1	VCC5
2	NC
3	IRRX_1
4	GND
5	IRTX_1

<b>COM3-6: Internal com port by pin header(2x20pin)</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	NDCD3	21	NDCD5
2	NDSR3	22	NDSR5
3	NRXD3	23	NRXD5
4	NRTS3	24	NRTS5
5	NTXD3	25	NTXD5
6	NCTS3	26	NCTS5
7	NDTR3	27	NDTR5
8	NRI3	28	NRI5
9	GND	29	GND
10	GND	30	GND
11	NDCD4	31	NDCD6
12	NDSR4	32	NDSR6
13	NRXD4	33	NRXD6
14	NRTS4	34	NRTS6
15	NTXD4	35	NTXD6
16	NCTS4	36	NCTS6
17	NDTR4	37	NDTR6
18	NRI4	38	NRI6
19	GND	39	GND
20	GND	40	GND

<b>TV1: HDTV connector</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	GND	2	TVDAC_B
3	GND	4	TVDAC_C
5	GND	6	TVDAC_A

<b>COM7-10: Com port by pin her header(2x20 pin header)</b>			
<b>Pin No.</b>	<b>DESCRIPTION</b>	<b>Pin No.</b>	<b>DESCRIPTION</b>
1	NDCD7	21	NDCD9
2	NDSR7	22	NDSR9
3	NRXD7	23	NRXD9
4	NRTS7	24	NRTS9
5	NTXD7	25	NTXD9
6	NCTS7	26	NCTS9
7	NDTR7	27	NDTR9
8	NRI7	28	NRI9
9	GND	29	GND
10	GND	30	GND
11	NDCD8	31	NDCD10
12	NDSR8	32	NDSR10
13	NRXD8	33	NRXD10
14	NRTS8	34	NRTS10
15	NTXD8	35	NTXD10
16	NCTS8	36	NCTS10
17	NDTR8	37	NDTR10
18	NRI8	38	NRI10
19	GND	39	GND
20	GND	40	GND

<b>DIO1: digital input and output By pin header(2x5 pin header)</b>			
<b>DIO1</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	GND	2	VCC5
3	DGPO3	4	DGPO2
5	DGPO1	6	DGPO0
7	DGPI3	8	DGPI2
9	DGPI1	10	DGPI0

<b>USB1,USB2: External USB1/2/3/4 Connectors</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	VCC (+5V)	5	VCC (+5V)
2	DATA-	6	DATA-
3	DATA+	7	DATA+
4	GROUND	8	GROUND

<b>USB1 : Internal USB5,USB6 by pin herder</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	USBV2L	2	GND
3	D-	4	D+
5	D+	6	D-
7	GND	8	USBV2L

<b>KB/MS2: internal Keyboard/Mouse</b>	
<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	PS2V5
2	L_MDAT
3	L_MCLK
4	L_KDAT
5	L_KCLK
6	KB_GND

<b>F_PANEL: HDD/Reset indicators</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	VCC5	2	VCC5
3	NC	4	NC
5	GND	6	NC
7	PANSWIN#	8	SPKOUT
9	GND	10	NC
11	VCC5	12	EXTRST-
13	IDE_LED	14	GND



<b>J1: CPU FAN Connector</b>	
<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	FANIO1
2	PWM1
3	GND

<b>VIDEO1 : VGA Connector</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	RED	2	GREEN
3	BLUE	4	HS
5	GND	6	NC
7	GND	8	GND
9	VCC	10	GND
11	NC	12	DDCDAT
13	HSYNC	14	VSYNC
15	DDCCLK		

<b>LAN1: Giga LAN1 Connector (RJ45)</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	CT1	5	MDIA1-
2	MDIA0+	6	MDIA2+-
3	MDIA0-	7	MDIA2-
4	MDIA1+	8	MDIA3+

<b>LAN2: Giga LAN2 Connector (RJ45)</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	CT1	5	MDIA1-
2	MDIA0+	6	MDIA2+-
3	MDIA0-	7	MDIA2-
4	MDIA1+	8	MDIA3+

<b>CPU_FAN1: Fan Connector</b>			
<b>PIN NO</b>	<b>DESCRIPTION</b>	<b>PIN NO</b>	<b>DESCRIPTION</b>
1	GND	2	12V
3	FAN_IN	4	FANCTL

<b>ATX1: POWER Connector</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	3.3V	13	GND
2	3.3V	14	PS_ON
3	GND	15	GND
4	5V	16	GND
5	GND	17	GND
6	5V	18	5V
7	GND	19	5V
8	ATXPWROK	20	5V
9	5VSB	10	12V
11	3.3V	12	12V

<b>AUDIO1: Audio Connector</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	GND_AUDIO	2	MIC1_L
3	NC	4	NC
5	MIC1_R	6	NC
7	LINE1R	8	NC
9	NC	10	MIC1_R

<b>DIO1 : DIO CONNECTOR (2*5Pin header, pitch 2.00mm)</b>			
<b>PIN NO</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	GND	2	VCC5
3	DGPO3	4	DGPO2
5	DGPO1	6	DGPO0
7	DGPI3	8	DGPI2
9	DGPI1	10	DGPI0

<b>INVERTOR1: LVDS Inventor backlight control</b>			
<b>PIN NO</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	BRIGHTNESS2	2	GND
3	BKL_POWER	4	GND
5	ENABKL2		

**IDE1: the parallel ATA connector**

Pin NO	Description	Pin NO	Description
1	RESET#	2	GROUND
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	GROUND	20	N/C
21	IDE DRQ	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	IDE CHRDY	28	GROUND
29	IDE DACK	30	GROUND-DEFAULT
31	INTERRUPT	32	N/C
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GROUND
41	VCC	42	VCC
43	GROUND	44	N/C

**SYS\_FAN1: Fan Connector**

PIN NO	DESCRIPTION	PIN NO	DESCRIPTION
1	FAN_IN	2	VCC_FAN
3	GND		

**SATA1~4: Serial ATA Connectors**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	TXP
3	TXN	4	GND
5	RXN	6	RXP
7	GND		

<b>LVDS1: LVDS Connector</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	GND	2	GND
3	A0+	4	A0-
5	A1+	6	A1-
7	A2+	8	A2-
9	CLK1+	10	CLK1-
11	A3+	12	A3-
13	GND	14	GND
15	A4+	16	A4-
17	A5+	18	A5-
19	A6+	20	A6-
21	CLK2+	22	CLK2-
23	A7+	24	A7-
25	GND	26	GND
27	VCC_LCD	28	VCC_LCD
29	VCC_LCD	30	VCC_LCD

### Board Layout: Jumper and Connector Locations (Unit: MM)

