

**Mini-ITX SBC supports LGA1155 Intel® Core™ i7 /i5/ i3 /Pentium/ Celeron CPU, DDR3, dual HDMI / dual VGA, Dual GbE, SATA 3Gb/s, HD Audio and RoHS**

# **KINO-AH611**

## **Quick Installation Guide**

Version 1.01

May. 22, 2012

### **Package Contents**

KINO-AH611 package includes the following items:

- 1 x KINO-AH611 Single Board Computer
- 3 x SATA Cable
- 1 x Dual RS-232 Cable
- 1 x I/O shielding
- 1 x Mini Jumper Pack
- 1 x Utility CD
- 1 x One Key recovery CD
- 1 x QIG (Quick Installation Guide)



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## Specifications

- CPU: LGA1155 socket supports Intel® Core™ i7/ i5 /i3/ Pentium/ Celeron processor
- System Chipset: Intel® H61
- BIOS: AMI UEFI BIOS
- System memory: Two 204-pin 1066/1333MHz Dual-channel DDR3 SDRAM SO-DIMM supported (system max. 16GB)
- Ethernet: Dual Realtek RTL8111E GbE Controllers with ASF2.0 support
- Display Interface:
  - Dual VGA: Support for CRT Hot plug
  - Dual HDMI: support up to 1080p
- I/O Interface:
  - 2 x RS-232
  - 8 x USB 2.0
  - 1 x TPM pin header
  - 3 x SATA3Gb/s
  - 1 x 6-pin header for PS/2 KB/MS
- Expansion slot:
  - 1 x PCIe x16 slot
  - 1 x PCIe mini card slot
- Audio: On board Realtek ALC662 HD codec
- Digital I/O: Programmable 8-bit GPIO by super I/O
- Super I/O: Fintek F81866
- Watchdog timer:
  - Software programmable supports 1~255 sec. system reset
- Power Supply: ATX support supply
- Power Consumption:
  - 5V@3.47A, 12V@0.11A, Vcore\_12V@6.73A, 3.3V@1.01A, 5VSB@0.15A (3.4GHz Intel® Core™ i7-2600K with 2GB\*2 DDR3 1333MHz)
- Humidity: Operation: 5% ~ 95%, non-condensing
- Temperature: -10 ~ 60°C
- Dimension: 170 mm x 170 mm
- Weight: GW: 1000g; NW: 550g

## Ordering Information

- **KINO-AH611-R10**: Mini-ITX SBC supports LGA1155 Intel® Core™ i7 /i5/ i3 /Pentium/ Celeron CPU, DDR3, dual HDMI / dual VGA, Dual GbE, SATA 3Gb/s, HD Audio and RoHS
- **19800-003100-200-RS**: Dual-port USB cable with bracket
- **32102-000100-200-RS**: SATA power cable
- **TPM-IN01-R11**: 20-pin Infineon TPM module, software management tool, firmware V3.17
- **SACF-KIT01-R10**: SATA to CF converter board
- **32000-023800-RS**: KB/MS Y cable
- **CPU-DT-i5-2500T**: Intel® Core™ i5-2500T processor, LGA1155, quad core 2.3GHz, 6M cache, 45W, compatible with CF-1156C-RS CPU cooler
- **CPU-DT-i5-2390T**: Intel® Core™ i5-2390T processor, LGA1155, dual core 2.7GHz, 3M cache, 35W, AMT, compatible with CF-1156C-RS CPU cooler
- **CPU-DT-i3-2100T**: Intel® Core™ i3-2100T processor, LGA1155, dual core 2.5GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
- **CPU-DT-P-G620T**: Intel® Pentium® G620T processor, LGA1155, dual core 2.2GHz, 3M cache, 35W, compatible with CF-1156C-RS CPU cooler
- **CPU-DT-C-G440**: Intel® Celeron® G440 processor, LGA1155, single core 1.6GHz, 1M cache, 35W, compatible with CF-1156C-RS CPU cooler
- **CF-1156A-RS**: High performance LGA1155/LGA1156 Cooler kit, 1U Chassis compatible, 73W
- **CF-1156AB-RS**: High performance LGA1155/LGA1156 Cooler kit, 95W
- **CF-1156C-RS**: LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
- **CF-1156D-RS**: LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W

## Jumpers setting

LABEL	FUNCTION
J_CMOS1	CMOS state setting
JATX_AT1	ATX or AT Mode Selection

J_CMOS1: Clear CMOS Setup	
PIN NO.	DESCRIPTION
Short 1-2	Keep CMOS Setup (default)
Short 2-3	Clear CMOS Setup

JATX_AT1: ATX or AT Mode Selection	
PIN NO.	DESCRIPTION
Short 1-2	ATX Power(default)
Short 2-3	AT Power

## Table of Connectors

LABEL	FUNCTION
SATA1~3	Serial ATA 2.0 Connector
F_PANEL1	Front Panel connector
JSPI1	SPI Flash Program Connector
JSPI2	EC SPI Flash Program Connector
TPM1	Trusted Platform Module connector
COM1~2	Internal Serial 2*5 Pin-header
DIO1	Digital I/O Connector
CPU_FAN1	4-pin CPU FAN Connector
SYS_FAN1	3-pin System FAN Connector
AUDIO_CV1	MIC IN & LINE OUT HD Audio Connector
FP_AUDIO1	Front Panel Audio Connector
ATX1	24-pin ATX Power Supply Connector
CPU12V1	+12V Power Source Connector
KB_MS1	PS/2 Mouse & Keyboard 1*6 Pin-header
I2C_1	I2C Connector
SMBUS_1	SMBUS Connector
USB1	External USB2.0 Connector
USB2	Internal USB2.0 2*4 Pin-header
HDMI1~2	HDMI Connector
CRT1~2	External CRT Port DB-15 Connectors
LANUSB1~2	RJ45 LAN and USB2.0 Connector
CN1	EC Debug port Connector
CN2	PCI-E Mini Card Connector
PCIEX16_1	PCI-E X16 Slot
BT1	3.3V battery
CRT1, CRT2	VGA 15-pin Female Connector

<b>SATA1~3: Serial ATA Connector</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	GND	5	RXN
2	TXP	6	RXP
3	TXN	7	GND
4	GND	8	N/C

### **F\_PANEL1 : PWR & RST Buttons and Indicators panel**

	<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>	
PWR_LED	1	ACPILED	2	BEEP_PWR	BUZZER
	3	NC	4	NC	
	5	GND	6	NC	
PWR_BTN	7	PWRBTN_SW#_C	8	PC_BEEP	NC
	9	GND	10	NC	
HDD_LED	11	IDELED+	12	EXTRST-	RESET
	13	IDELED-	14	GND	

### **TPM1:Trusted Platform Module connector**

<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	LCLK	2	GND2
3	LERAME#	4	KEY
5	LRESRT#	6	+5V
7	LAD3	8	LAD2
9	+3V	10	LAD1
11	LAD0	12	GND3
13	SCL	14	SDA
15	SB3V	16	SERIRQ
17	GND1	18	GLKRUN#
19	LPCPD#	20	LDRQ#

### **COM1~2 : Internal Serial Port Connector**

<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	-NDCD1	6	-NCTS1
2	-NDSR1	7	-NDTR1
3	NSIN1	8	-XRI1
4	-NRTS1	9	GND
5	NSOUT1	10	GND

**DIO1 : Digital Input / Output Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	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

**SYS\_FAN1 : System Fan Connector**

PIN NO.	DESCRIPTION
1	FANIO
2	+12V (PWM)
3	GND

**CPU\_FAN : CPU Fan Connector**

PIN NO.	DESCRIPTION
1	GND
2	+12V
3	FANIO1
4	PWM

**FP\_ADUIO : Front audio pin header**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	LMIC2_L	2	AUD GND
3	LMIC2_R	4	PRESENCE#
5	LLINE2-R	6	MIC2-JD
7	F_SENSE	8	NC
9	LLINE2-L	10	LINE2-JD

**ATX1: 20Pin ATX Power Supply Connector****ATX20 (Main Board)**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+3.3Vdc	11	+3.3Vdc
2	+3.3Vdc	12	-12Vdc
3	GND	13	GND
4	+5Vdc	14	PS-ON
5	GND	15	GND
6	+5Vdc	16	GND
7	GND	17	GND
8	PWR-OK	18	-5Vdc
9	+5VSby	19	+5Vdc
10	+12Vdc	20	+5Vdc

**ATX12V1 : +12V MAIN POWER Connector**

ATX 12V1			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	+12V	4	+12V

**JSPI1: Flash SPI ROM Connector**

PIN NO.	DESCRIPTION
1	SPI_VCC
2	SPI_CS#
3	SPI_MISO
4	SPI_CLK
5	SPI_MOSI
6	GND

**KB\_MS1: 6-pin Wafer Keyboard Connector**

PIN NO.	DESCRIPTION
1	VCC5_KBMS
2	MSDATA
3	MSCLK
4	KBDATA
5	KBCLK
6	KBGND

**I2C\_1**

PIN NO.	DESCRIPTION
1	+5V_DUAL
2	PCH_GP38_PU
3	PCH_GP39_PU
4	GND

**SMBUS\_1**

PIN NO.	DESCRIPTION
1	+5V_DUAL
2	SMBCLK
3	SMBDATA
4	GND



## USB2: Internal USB Connectors

USB			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	GND
3	DATA-	4	DATA+
5	DATA+	6	DATA-
7	GND	8	VCC

## HDMI1/2 : HDMI Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	HDMI_DATA2	13	N/C
2	GND	14	N/C
3	HDMI_DATA2#	15	HDMI_SCL
4	HDMI_DATA1	16	HDMI_SDA
5	GND	17	GND
6	HDMI_DATA1#	18	+5V
7	HDMI_DATA0	19	HDMI_HPD
8	GND	20	HDMI_GND
9	HDMI_DATA0#	21	HDMI_GND
10	HDMI_CLK	22	HDMI_GND
11	GND	23	HDMI_GND
12	HDMI_CLK#		

## LANUSB1~LANUSB2

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MDIA3-	5	MDIA1+
2	MDIA3+	6	MDIA2+-
3.	MDIA2-	7	MDIA0-
4.	MDIA1-	8	MDIA0+

USB	
PIN NO.	DESCRIPTION
1	VCC
2	DATA-
3	DATA+
4	GND

BT1 : +3V Battery Connector	
PIN NO.	DESCRIPTION
1	BAT (+3V)
2	GND

<b>AUDIO_CV1</b>	
<b>PIN NO.</b>	<b>DESCRIPTION</b>
Line_out	Connect this port to headphone or speaker
Microphone	Connect this port to microphone

<b>CN2: PCIe Mini Card Slot</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
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 D-
37	N/C	38	USB D+
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

<b>VGA1,VGA2: VGA 15-pin Female Connector</b>			
<b>PIN</b>	<b>DESCRIPTION</b>	<b>PIN</b>	<b>DESCRIPTION</b>
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	VCC / NC	10	GND
11	NC	12	DDC DAT
13	HSYNC	14	VSYNC
15	DDCCLK		

<b>USB1: External USB Connector</b>			
<b>PIN NO.</b>	<b>DESCRIPTION</b>	<b>PIN NO.</b>	<b>DESCRIPTION</b>
1	VCC (+5V)	5	VCC (+5V)
2	DATA4-	6	DATA5-
3	DATA4+	7	DATA5+
4	GND	8	GND

# Board Layout: Jumper and Connector Locations

