

Mini-ITX SBC supports Socket FS1r2 AMD R-series APU with A75,
DDR3, HDMI, DVI-D, VGA, iDP, Dual Intel® PCIe GbE, USB 3.0,
SATA 6Gb/s, HD Audio, iRIS-2400 and RoHS

KINO-AA750-i2

Quick Installation Guide

Version 1.0

Apr 11, 2014.

Package List

KINO-AA750-i2 package includes the following items:

- 1 x KINO-AA750-i2 single board computer
- 1 x SATA cable(P/N: 32801-000703-200-RS)
- 1 x I/O shielding
- 1 x Utility CD
- 1 x QIG



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Specifications

- CPU:
Socket FS1r2 supports AMD Embedded R-Series APU
- PCH: AMD A75
- Memory:
Two 204-pin 1600/1333MHz dual-channel DDR3 & DDR3L SDRAM unbuffered DIMMs support up to 16GB
Support for 1.5V/1.35V/1.25V DDR3
- BIOS: UEFI BIOS
- Ethernet:
GbE1: 1 x Intel® I210-AT PCIe controller with NCSI support
GbE2: 1 x Intel® I211-AT PCIe controller
- Graphic Engine:
AMD Radeon™ GPUs (Radeon™ HD 7000 series), support DX11, UVD3
H.264, VC-1, MPEG-2, DivX
Direct X® 11, Open CL™ 1.1, OpenGL 4.2
- Display Output:
1 x HDMI (rear IO) (up to 1920x1080 @ 60 Hz)
1 x DVI-D (rear IO) (up to 1920x1080 @ 60 Hz)
1 x VGA (up to 1920x1200 @ 60 Hz)
1 x iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 2560 x 1600 @60 Hz)
- Audio:
Realtek ALC892 HD codec
1 x Line-out/Mic-In audio jack on rear IO (rear IO)
1 x SPDIF pin header (1x4 pin)
1 x Audio amplifier (2x3 watt)
1 x Front audio (2x5 pin)
- Audio Amplifier: 2 x 3W
- I/O Interface:

- 2 x RS-232
- 1 x RS-422/485
- 6 x USB 2.0
- 2 x USB 3.0
- 4 x SATA 6Gb/s
- 1 x PS2 KB/MS
- SMBUS: 1 x 4-pin (1x4) wafer
- Expansion:
 - 1 x PCIe Mini card slot
 - 1 x PCIe x8
 - 1 x SIM card socket
- iRIS Remote Management Module: 1 x iRIS-2400 slot
- Watchdog Timer:
 - Software programmable support 1~255 sec. system reset
- Digital I/O: 8-bit digital I/O (4-bit input, 4-bit output)
- LAN LED:
 - 2 x 2-pin header for LAN1 Link LED, LAN2 Link LED
- Infrared Interface: 1 x 5-pin pin header
- FAN:
 - 1 x 4-pin CPU fan connector
 - 1 x 3-pin system fan connector
- Power supply:
 - 20+4 ATX power
 - Support AT/ATX mode
- Operation Temperature: 0°C ~ 60°C
- Operation Humidity: 5% ~ 95%, non-condensing
- Dimensions: 170mm x 170mm
- Weight (GW/NW):900g / 450g

Ordering Information

- **KINO-AA750-i2-R10:**
Mini-ITX SBC supports Socket FS1r2 AMD R-series APU with A75, DDR3, HDMI, DVI-D, VGA, iDP, Dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, HD Audio, iRIS-2400 and RoHS
- **iRIS-2400-R10:**
IPMI 2.0 adapter card with AST2400 BMC chip for DDR3 SO-DIMM socket interface
- **19800-003100-200-RS:** Dual-port USB 2.0 cable with bracket
- **32205-003800-100-RS:** RS-422/485 cable, 200mm
- **19800-000300-100-RS:** RS-232 cable, 230mm (P=2.0 mm) w/bracket
- **32801-000703-200-RS:** SATA cable with power output cable
- **32102-000100-200-RS:** SATA power cable, MOLEX 5264-4P to SATA15P
- **19800-000075-RS:** PS/2 KB/MS Y-cable with bracket, 220mm
- **CF-989B-RS-R11:** CPU cooler for 50W processor, Aluminum
- **IO-KIT-001-R20:** DVI and quad-port USB 2.0 adapter card, RoHS
- **TPM-IN01-R11:**
20-Pin Infineon TPM module, software management tool, firmware V3.17

Jumpers setting and connectors

LABEL	FUNCTION
ATX/AT1	AT/ATX mode select switch
J_CMOS1	Clear CMOS button
ATX1	ATX power source connector
AUDIO3	Audio amplifier
AUDIO2	Extended audio module connector
BAT1	Battery connector
BMC_COM1	BMC COM debug connector
Chassis1	Chassis open connector
FAN1	CPU fan connector
PWR1	Power supply DC12V power in
DIMM1, DIMM2	DDR3 SO-DIMM slots
DIO1	Digital I/O connector
LPT_DB1	EC debug connector
F_PANEL1	PWR & RST buttons and indicators
IPMI1	IPMI module connector using DDR3 SO-DIMM Connector
IPMI_LED1	IPMI active LED connector
LED_LAN1,2	LAN active LED connector
M_PCIE1	PCIe Mini card slot
COM2	Internal RS-232 serial port connector
COM3	Internal RS-422/485 serial port connector
S_ATA1, S_ATA2 S_ATA3, S_ATA4	SATA 6Gb/s drive connectors
SATA_PWR1 SATA_PWR2	SATA power connectors
SD1	SD Card Connector
SIM1	SIM Card Connector
CN1	SMBUS connector
SPDIF2	SPDIF connector
JSPI1	SPI Flash connector
JSPI2	SPI Flash connector (EC)
FAN2	System fan connector
USB1,USB2	Internal USB 2.0 connectors

AUDIO1	Audio Connector
COM1	External RS-232 serial port connector
LAN_USB1	RJ45 LAN and USB 3.0 connectors
LAN_USB2	RJ45 LAN and USB 2.0 connectors
KB_MS1	PS/2 mouse & keyboard connectors
HDMI1	HDMI connector
VIDEO1	VGA and DVI connector

ATX/AT1: AT/ATX mode select switch

PIN NO.	DESCRIPTION
Short A - B	ATX Mode (default)
Short B- C	AT Mode

J_CMOS1: Clear CMOS button

PIN NO.	DESCRIPTION
Push	Clear CMOS

ATX1: ATX power source connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	GND	15	GND
4	+5V	16	-IO_PSON
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	PWRGD_PS	20	NC
9	V_5P0_A	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND

AUDIO3: Audio amplifier			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	SPEAKER_R+	2	SPEAKER_R-
3	GND	4	SPEAKER_L-
5	SPEAKER_L+		

AUDIO2: Audio module connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	LMIC2-L	2	ANALOG GND
3	LMIC2-R	4	PRESENCE#
5	LLINE2-R	6	MIC2-JD
7	FRONT-IO	8	NC
9	LLINE2-L	10	LINE2-JD

BAT1: Battery connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VBATT	2	GND

BMC_COM1: BMC COM debug connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NC	2	NC
3	RXD	4	NC
5	TXD	6	NC
7	NC	8	NC
9	GND	10	GND

Chassis1: Chassis open connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+V3.3EC	2	CHASSIS OPEN#

FAN1: CPU fan connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+V12S
3	Rotation Signal	4	PWM Control Signal

PWR1: Power supply DC12V power in			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	+12V	4	+12V

DIO1: Digital I/O connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+V5S
3	DOUT3	4	DOUT2
5	DOUT1	6	DOUT0
7	DIN3	8	DIN2
9	DIN1	10	DIN0

LPT_DB1: EC debug connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	EC_EPP_STB#	2	EC_EPP_AFD#
3	EC_EPP_PD0	4	NC
5	EC_EPP_PD1	6	EC_EPP_INIT#
7	EC_EPP_PD2	8	EC_EPP_SLIN#
9	EC_EPP_PD3	10	GND
11	EC_EPP_PD4	12	NC
13	EC_EPP_PD5	14	EC_EPP_BUSY
15	EC_EPP_PD6	16	EC_EPP_KSI5
17	EC_EPP_PD7	18	EC_EPP_KSI4

F_PANEL1: PWR & RST buttons and indicators					
	PIN	DESCRIPTION	PIN	DESCRIPTION	
PWR LED	1	LED_PWR	2	BEEP_PWR	BUZZER
	3	NC	4	NC	
	5	GND	6	NC	
PWR BTN	7	PWR_BTN	8	PC_BEEP#	RESET
	9	GND	10	NC	
HDD LED	11	SATA_LED+	12	RESET	
	13	SATA_LED-	14	GND	

IPMI_LED1: IPMI active LED connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+V3.3EC	2	IPMI LED#

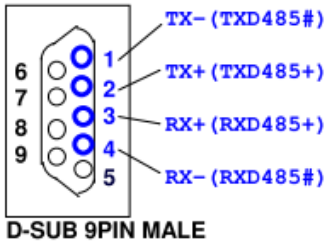
LED_LAN1,2: LAN active LED connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+V3.3LAN	2	LED LINK_ACT-

M_PCIE1: 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	N/C	8	N/C
9	GND	10	N/C
11	CLK-	12	N/C
13	CLK+	14	N/C
15	GND	16	N/C
17	PCIRST#	18	GND
19	N/C	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	USBD-
37	N/C	38	USBD+
39	N/C	40	GND
41	N/C	42	N/C
43	N/C	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

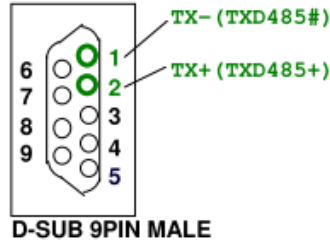
COM2: RS-232 serial port connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	-NDCD2	2	-NDSR2
3	NSIN2	4	-NRTS2
5	NSOUT2	6	-NCTS2
7	-NDTR2	8	-XRI2
9	GND	10	GND

COM3: RS-422/485 serial port connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	RXD485#	2	RXD485+
3	TXD485+	4	TXD485#

RS422 Pin define



RS485 Pin define



S_ATA1, S_ATA2, S_ATA3, S_ATA4: SATA 6Gb/s drive connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	TX+
3	TX-	4	GND
5	RX-	6	RX+
7	GND		

SATA_PWR1, SATA_PWR2: SATA power connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+V12S	2	GND
3	GND	4	+V5S

CN1: SMBUS connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	SMB_DATA
3	SMB_CLK	4	+V5S

SPDIF2: SPDIF connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+V5S	2	NC
3	SPDIFOUT	4	GND
5	SPDIFIN		

JSPI1: SPI Flash connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+V3.3M_SPI_CON	2	SPI_CS
3	SPI_SO_SW	4	NC
5	GND	6	SPI_CLK_SW
7	SPI_SI_SW	8	NC

JSPI2: SPI Flash connector (EC)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+V3.3M_SPI_CON_EC	2	SPI_CS#0_CN_EC
3	SPI_SO_SW_EC	4	SPI_CLK_SW_EC
5	SPI_SI_SW_EC	6	GND

FAN2: System fan connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Rotation Signal	2	+12V
3	GND		

USB1, USB2: Internal USB 2.0 connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	GND
3	-DATA	4	+DATA
5	+DATA	6	-DATA
7	GND	8	VCC

COM1: External RS-232 serial port connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD1	2	RXD1
3	TXD1	4	DTR1
5	GND1	6	DSR1
7	RTS1	8	CTS1
9	RI1		

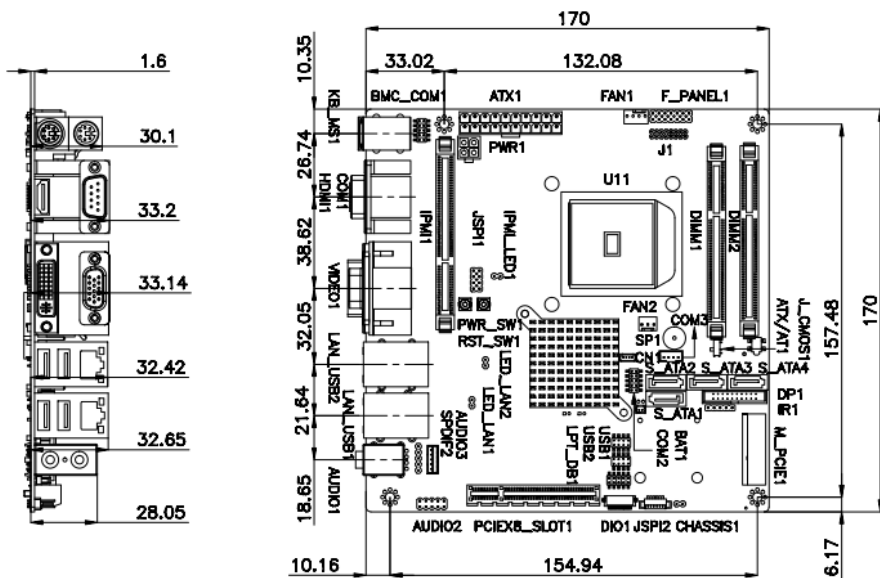
LAN_USB1: Ethernet and USB 3.0 ports			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MD0+	2	MD0-
3	MD1+	4	MD1-
5	MD2+	6	MD2-
7	MD3+	8	MD3-
9	VCC	10	GND
11	LINK_ACT+	12	LINK_ACT-
13	100-	14	1000-
15	GND		
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VBUS	2	D-
3	D+	4	GND
5	STDA_SSRX_N	6	STDA_SSRX_P
7	GND_DRAIN	8	STDA_STX_N
9	STDA_STX_P		

LAN_USB2: Ethernet and USB 2.0 ports			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MD0+	2	MD0-
3	MD1+	4	MD1-
5	MD2+	6	MD2-
7	MD3+	8	MD3-
9	VCC	10	GND
11	LINK_ACT+	12	LINK_ACT-
13	100-	14	1000-
15	GND		
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VBUS	2	D-
3	D+	4	GND

KB_MS1: PS/2 mouse & keyboard connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC5_KBMS	2	MSDATA
3	MSCLK	4	KBDATA
5	KBCLK	6	KBGND

HDMI1: HDMI connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	D2+	2	NC
3	D2-	4	D1+
5	GND	6	D1-
7	D0+	8	GND
9	D0-	10	CLK+
11	GND	12	CLK-
13	NC	14	NC
15	DDC CLK	16	DDC DATA
17	GND	18	VCC5
19	HP DETECT	20	GND

Board Layout: Jumper and Connector Locations



(Unit: mm)