

Mini-ITX SBC supports Intel® 22nm Atom™ or Celeron® on-board SoC, VGA/HDMI/iDP, Dual Intel® PCIe GbE, USB 3.0, SATA, HD Audio, iRIS-2400 and RoHS

KINO-ABT-i2

Quick Installation Guide

Version 1.0

Feb 19, 2016.

Package List

KINO-ABT-i2 package includes the following items:

- 1 x KINO-ABT-i2 single board computer
- 1 x Dual-port USB cable
- 1 x SATA cable
- 1 x IO shielding (P/N: 45014-0038C0-01-RS)
- 1 x QIG (Quick Installation Guide)
- 1 x Utility CD



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Specifications

- SoC:
 - Intel® Atom™ E3845 on-board SoC (1.91GHz, quad-core, 2MB cache, TDP=10W)
 - Intel® Atom™ E3827 on-board SoC (1.75GHz, dual-core, 1MB cache, TDP=8W)
 - Intel® Atom™ E3826 on-board SoC (1.46GHz, dual-core, 1MB cache, TDP=7W)
 - Intel® Atom™ E3825 on-board SoC (1.33GHz, dual-core, 1MB cache, TDP=6W)
 - Intel® Atom™ E3815 on-board SoC (1.46GHz, single-core, 512KB cache, TDP=5W)
 - Intel® Celeron® J1900 on-board SoC (2GHz, quad-core, 2MB cache, TDP=10W)
 - Intel® Celeron® N2930 on-board SoC (1.83GHz, quad-core, 2MB cache, TDP=7.5W)
 - Intel® Celeron® N2807 on-board SoC (1.58GHz, dual-core, 2MB cache, TDP=4.3W)
- BIOS: AMI UEFI BIOS
- Memory:
 - Two 204-pin 1066/1333 MHz dual-channel unbuffered DDR3L SDRAM SO-DIMM support up to 8 GB (J1900, N2930, E3845, E3827, E3826)
 - One 204-pin 1066/1333 MHz dual-channel unbuffered DDR3L SDRAM SO-DIMM supports up to 4 GB (N2807, E3825, E3815)
- Graphics Engine:
 - Intel® HD Graphics Gen 7 Engines with 4 execution units, supporting DX11.1, OpenGL 4.2 and OpenCL1.2
- Display Output:
 - Dual Independent Display
 - VGA (up to 2560x1600@60Hz)
 - HDMI (up to 2560x1600@60Hz)
 - iDP interface for HDMI, LVDS, VGA, DVI, DP (up to 3840x2160@60 Hz)

- Ethernet:
 - LAN1: Intel® I210-AT PCIe controller with NCSI support (for iRIS solution)
 - LAN2: Intel® I211-AT PCIe controller
- Super IO: Fintek F81866D-I
- I/O Interface:
 - 1 x PS/2 KB/MS
 - 1 x microSD slot (E38XX SKU only)
 - 2 x USB 3.0 (on rear I/O)
 - 6 x USB 2.0 (2 on rear I/O, 4 by pin header)
 - 1 x RS-422/485 (by pin header)
 - 5 x RS-232 (2 on rear I/O, 3 by pin header)
 - 2 x SATA 3Gb/s with 5V SATA power connector (no RAID)
- TPM: 1 x 20-pin header
- SMBus: 1 x 4-pin (1x4) wafer
- I2C: 1 x 4-pin (1x4) wafer
- Audio: Realtek ALC662 HD codec supports 5.1 channel
- Front Panel:
 - 1 x Front Panel
 - (Power LED, HDD LED, Speaker, Power Button, Reset Button)
- LAN LED:
 - 2 x 2-pin (1x2) header
- Expansion :
 - 1 x Full-size PCIe Mini card slot (supports mSATA, co-lay SATA port 2)
 - 1 x PCIe x4 slot (PCIe x1 signal)
- iRIS Remote Management Module: 1 x iRIS-2400 slot
- Digital I/O: 8-bit digital I/O (4-bit input, 4-bit output)
- Fan Connector:
 - 1 x 4-pin smart fan connector
 - 1 x 4-pin system fan connector
- Watchdog Timer:

Software programmable support 1~255 sec. system reset

- Power supply:
ATX power supply
- Power Consumption:
5V@1.71A, 12V@0.08A, Vcore_12V@0.27A, 3.3V@0.34
(Intel® Celeron® J1900 CPU, 2 x 4GB 1333 MHz DDR3
memory)
- Operating Temperature: -20°C ~ 60°C
- Storage Temperature: -30°C ~ 70°C
- Operation Humidity: 5% ~ 95%, non-condensing
- Dimensions: 170mm x 170mm
- Weight(GW/ NW): 900g / 450g

Ordering Information

- **KINO-ABT-i2-J19001-R10:**
Mini-ITX SBC supports Intel® Celeron® quad-core processor J1900 (10W), VGA/HDMI/iDP, dual Intel® PCIe GbE, SATA, USB 3.0, HD Audio, iRIS-2400 and RoHS
- **KINO-ABT-i2-N29301-R10:**
Mini-ITX SBC supports Intel® Celeron® quad-core processor N2930 (7.5W), VGA/HDMI/iDP, dual Intel® PCIe GbE, SATA, USB 3.0, HD Audio, iRIS-2400 and RoHS
- **KINO-ABT-i2-N28071-R10:**
Mini-ITX SBC supports Intel® Celeron® dual-core processor N2807 (4.3W), VGA/HDMI/iDP, dual Intel® PCIe GbE, SATA, USB 3.0, HD Audio, iRIS-2400 and RoHS

- **KINO-ABT-i2-E38XX1-R10:**
Mini-ITX SBC supports Intel® Atom™ processor E38XX, VGA/HDMI/iDP, Dual Intel® PCIe GbE, SATA, USB 3.0, HD Audio, iRIS-2400 and RoHS (by request MOQ: 100pcs/lot)
- **32205-003800-300-RS:** RS-422/485 cable
- **32200-000049-RS:** RS-232 cable, 200mm, DB-9 2x5P P=2.0
- **32006-000300-100-RS:** PS/2 KB/MS Y-cable without bracket
- **32205-003800-300-RS:** RS-422/485 cable, 200mm4
- **DP-LVDS-R10:**
DisplayPort to 24-bit dual-channel LVDS converter board (for IEI iDP connector)
- **DP-HDMI-R10:**
DisplayPort to HDMI converter board (for IEI iDP connector)
- **DP-DVI-R10:**
DisplayPort to DVI-D converter board (for IEI iDP connector)
- **DP-VGA-R10:**
DisplayPort to VGA converter board (for IEI iDP connector)
- **DP-DP-R10:**
DisplayPort to DisplayPort converter board (for IEI iDP connector)
- **TPM-IN01-R11:**
20-pin Infineon TPM module, software management tool, firmware V3.17

Jumpers setting and connectors

LABEL	FUNCTION
J_CMOS1	Clear CMOS
J_ATX_AT1	AT/ATX Power Mode Setting
USB SW1 Power USB SW2 Power	USB Power Setting
MSATA_SW1	MSATA Selection
F_PANEL1	PWR & RST Buttons and indicators
CRT1	VGA 15-pin Female Connector
HDMI1	HDMI Connector
DP1	DP Connector
LAN1_USB1	RJ45 LAN and USB 3.0 Connector
LAN2_USB2	RJ45 LAN and USB 2.0 Connector
KB_MS1	6Pin-header Keyboard & Mouse Connector
USB1 USB2	Internal Pin-header 4 USB2.0 Connectors
COM1-2	External Serial Port DB-9 Connector
COM3 COM5-6	Internal Serial Port Connectors
COM4	Internal Serial Port RS422/RS485 Connector
AUDIO_CV1	HD Audio Connector
FRONT_PANEL1	Front Panel Audio Connector
SPDIF1	SPDIF Connector
SATA1 SATA2	SATA 3Gb/s Drive Connectors
CN8	Mini PCI-E Card Connector
CPU_FAN1	CPU Fan Connector
SYS_FAN1	System Fan Connectors
DIO1	Digital I/O Connector
ATX1	24Pin ATX Power Source Connector
TPM1	TPM Connector
SATA_PWR1,2	Serial ATA Power Connectors
CN9	EC Debug Port Connector
JSPI1	Flash SPI ROM
JSPI2	Flash EC ROM

CN5	SMBUS Connector
LED_LAN1	LAN1 LINK LED Connector
LED_LAN2	LAN2 LINK LED Connector

J_CMOS1: Clear CMOS button	
PIN NO.	DESCRIPTION
NC (default)	Keep CMOS Setup (Normal Operation)
Press button	Clear CMOS Setup

J_ATX_AT1: AT/ATX mode select switch	
PIN NO.	DESCRIPTION
Short 1 - 2	ATX Mode (default)
Short 2 - 3	AT Mode

USB SW1, USB SW2: USB power setting	
PCIE x16	DESCRIPTION
+5V DUAL	5V DUAL (default)
+5V	+5V

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.		
Chipset		
Auto Power Button Status	[Disabled(ATX)]	
Restore AC Power Loss	[Last State]	-----
> PCI Express Configuration		
> PCI Azalia Configuration		
Power Saving Function(ERP)	[Disabled]	
PCIEX16 Power	[1 x16 PCIE]	
USB SW1	[+5V DUAL]	
USB SW2	[+5V DUAL]	
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.		

MSATA_SW : MSATA setting	
PIN NO.	DESCRIPTION
Short 1 - 2	Auto detect M-SATA (default)
Short 2 - 3	M-SATA Enable

F_PANEL1: PWR & RST Buttons and indicators					
	PIN	DESCRIPTION	PIN	DESCRIPTION	
PWR LED	1	+5V	2	BEEP_PWR	SPKR
	3	NC	4	IPMI ID_LED+	IPMI LED
	5	GND	6	IPMI ID_LED-	
PWR BTN	7	PWRBTN_SW#	8	PC_BEEP	SPKR
	9	GND	10	NC	RESET
HDD LED	11	+5V	12	EXTRST-	
	13	SATA_LED#	14	GND	

VIDEO1: 15-pin Female Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	VCC	10	GND
11	NC	12	DDCDA
13	HSYNC	14	VSYNC
15	DDCCLK		

HDMI1 : 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#		

DP1: Display port connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	HPD	11	LANE3N
2	AUXP	12	GND
3	GND	13	GND
4	AUXN	14	LANE0P
5	AUX_CTRL_DET_D	15	LANE1P
6	GND	16	LANE0N
7	GND	17	LANE1N
8	LANE2P	18	+3.3V
9	LANE3P	19	+5V
10	LANE2N		

LAN1_USB1: RJ45 LAN and USB3.0 Connector			
USB3.0 Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	10	VCC
2	USB_DATA-	11	USB_DATA-
3	USB_DATA+	12	USB_DATA+
4	GND	13	GND
5	USB3_RX-	14	USB3_RX-
6	USB3_RX+	15	USB3_RX+
7	GND	16	GND
8	USB3_TX-	17	USB3_TX-
9	USB3_TX+	18	USB3_TX+
RJ45 LAN			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
20	LAN1_MDI0P	24	LAN1_MDI2P
21	LAN1_MDI0N	25	LAN1_MDI2N
22	LAN1_MDI1P	26	LAN1_MDI3P
23	LAN1_MDI1N	27	LAN1_MDI3N

LAN2_USB2: RJ45 LAN and USB2.0 Connector			
USB2.0 Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	5	VCC
2	USB_DATA-	6	USB_DATA-
3	USB_DATA+	7	USB_DATA+
4	GND	8	GND
RJ45 LAN			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
L1	TRD2P0	L5	TRD2N2
L2	TRD2N0	L6	TRD2N1
L3	TRD2P1	L7	TRD2P3
L4	TRD2P2	L8	TRD2N3

KB_MS1: Keyboard & mouse pin header			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC5_KBMS	2	MSDATA
3	MSCLK	4	KBDATA
5	KBCLK	6	KBGND

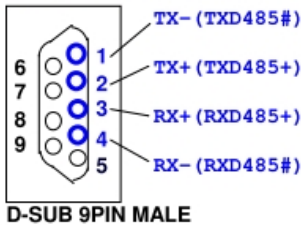
USB1, USB2: Internal USB 2.0 connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	GND
3	USB_DATA-	4	USB_DATA+
5	USB_DATA+	6	USB_DATA-
7	GND	8	VCC

COM1/2: External Serial Port Connector(COM1&2)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD1	6	DSR1
2	RXD1	7	RTS1
3	TXD1	8	CTS1
4	DTR1	9	RI1
5	GND		

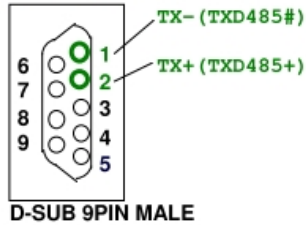
COM3, COM5, COM6: Internal Serial Port Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD	6	CTS
2	DSR	7	DTR
3	RXD	8	RI
4	RTS	9	GND
5	TXD	10	GND

COM4: RS-422/485 serial port connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	RXD485#	2	RXD485+
3	TXD485+	4	TXD485#

RS422 Pin define



RS485 Pin define



AUDIO_CV1 : Audio Line-In/Out MIC Connector	
PIN NO.	DESCRIPTION
Line_In (Blue)	CD/DVD or other audio source input port
Line_Out (Green)	Connect this port to headphone or speaker
Microphone (Pink)	Connect this port to microphone

FRONT-PANEL1: Audio Source Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MIC2-L	2	GND
3	MIC2-R	4	Presence#
5	LINE2-R	6	MIC2-JD
7	FRONT-IO	8	NC
9	LINE2-L	10	LINE2-JD

SPDIF1 : SPDIF Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5V	2	NC
3	SPDIFOUT	4	GND
5	SPDIFIN		

SATA1, SATA2: SATA 3Gb/s Drive Connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	TX+
3	TX-	4	GND
5	RX-	6	RX+
7	GND		

CPU_FAN1: CPU FAN connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+12V
3	FANIO	4	PWM

SYS_FAN1: System FAN connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	FANIO	2	+12V (PWM)
3	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

CN8: Mini PCI-E Card Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	PCIE_WAKE#	2	+3.3V
3	N/C	4	GND
5	N/C	6	1.5V
7	N/C	8	N/C
9	GND	10	N/C
11	MSATA_CLK#	12	N/C
13	MSATA_CLK	14	N/C
15	GND	16	N/C
17	PLTRST_N	18	GND
19	N/C	20	+3.3V
21	GND	22	PLTRST_N
23	SATA_RX+	24	+3.3V
25	SATA_RX-	26	GND
27	GND	28	1.5V
29	GND	30	SMB_CLK
31	SATA_TX-	32	SMB_DATA
33	SATA_TX+	34	GND
35	GND	36	USB_DATA-
37	GND	38	USB_DATA+
39	+3.3V	40	GND
41	+3.3V	42	N/C
43	+3.3V	44	N/C
45	CLINK_CLK	46	N/C
47	CLINK_DATA	48	1.5V
49	CLINK_RST#	50	GND
51	MSATA_DET	52	+3.3V

ATX1: ATX Power 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	PS_ON
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power good	20	-5V
9	5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND

TPM1: TPM connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	LCLK	2	GND
3	LFRAME#	4	KEY
5	LRERST#	6	+5V
7	LAD3	8	LAD2
9	+3.3V	10	LAD1
11	LAD0	12	GND
13	SCL	14	SDA
15	SB3V	16	SERIRQ
17	GND	18	GLKRUN#
19	LPCPD#	20	LDRQ#

SATA_PWR1,2 : Serial ATA Power Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5VS	2	GND

CN9: EC debug port			
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

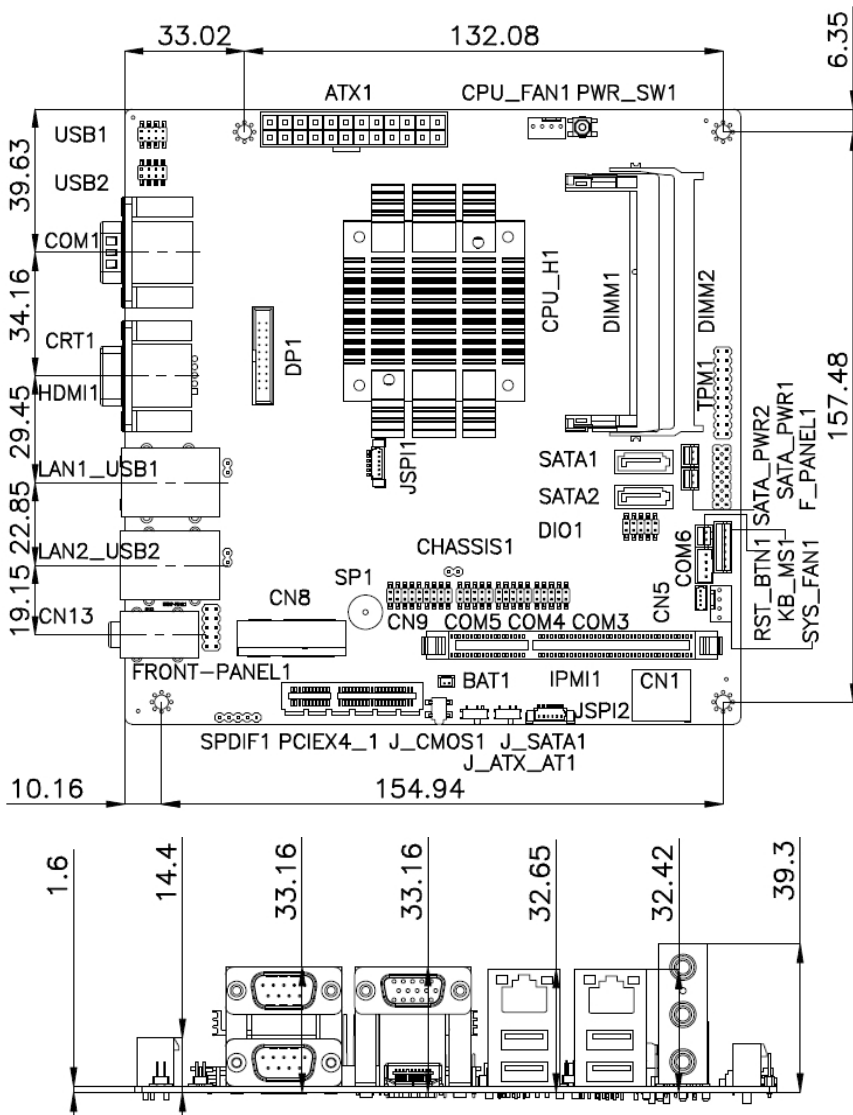
JSPI1: Flash SPI ROM Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+1.8V	2	SPI_CS#
3	SPI_SO	4	SPI_CLK
5	SPI_SI	6	GND

JSPI2: Flash EC ROM Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+1.8V	2	SPI_CS#
3	SPI_SO	4	SPI_CLK
5	SPI_SI	6	GND

CN5: SMBUS Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	SMB_DATA
3	SMB_CLK	4	+V5S

LED_LAN1, LED_LAN2: LAN link LED connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+3.3V	2	LAN1_LED_LNK#_ACT

Board Layout: Jumper and Connector Locations



** E3825、E3815、N2807 僅有 DIMM1 上件

(Unit: mm)