

Mini-ITX SBC with Intel® 22nm Atom SoC processors, VGA / DVI-D /
iDP, USB 3.0, SATA, HD Audio, RoHS

KINO-DBT

Quick Installation Guide

Version 1.0

Feb 19, 2016.

Package List

KINO-DBT package includes the following items:

- 1 x KINO-DBT single board computer
- 1 x SATA cable with power output cable
- 1 x IO shielding (P/N: 45014-0056C0-00-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=4.5W)
- 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:
 - 4th Gen 7 Graphics Engines with 4 execution unit, DX11, OGL 4.0, ES 2.0, OpenCL 1.2 support
- Display Output:
 - Dual Independent Displays
 - 1 x VGA (Resolution: 2560x1200)
 - 1 x DVI-D
 - 1 x iDP
- Ethernet: Dual Realtek RTL8111E PCIe GbE controller

- External I/O Interface:
 - 2 x RS-232
 - 2 x USB2.0
 - 2 x USB3.0
- Internal I/O Interface:
 - 1 x KB/MS (1 x 6 pin)
 - 1 x mSATA share with SATA port II
 - 1 x RS-422/485 (1 x 4 pin, P=2.0)
 - 2 x SATA 3Gb/s with 5V, 12 V SATA power connector
 - 5 x RS-232 (2 x 5 pin, P=2.54)
 - 4 x USB2.0 (2 x 4 pin, P=2.0)
- TPM: 2 x 10-pin pinheader
- SMBus: 1 x 4-pin (1x4) wafer
- Audio: Realtek ALC662 HD codec supports 5.1 channel
- Front Panel:
 - 1 x Front panel (2x7 pin, 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
 - 1 x PCIe x4 slot (with PCIe x1 signal)
 - 1 x microSD slot (E38XX SKU only)
- Digital I/O: 8-bit digital I/O (2x5 pin)
- Fan Connector:
 - 1 x 4-pin CPU fan connector
 - 1 x 4-pin system fan connector
- Watchdog Timer:
 - Software programmable support 1~255 sec. system reset
- Power supply:
 - 12V DC input
 - 1 x External 4-pin DIN DC jack
 - 1 x Internal 4-pin (2x2) power connector

- Power Consumption: 12V@1.64A (Intel® Atom™ J1900, 4GB DDR3 1333 LV Memory)
- Operating Temperature: -20°C ~ 70°C
- Storage Temperature: -30°C ~ 85°C
- Operation Humidity: 5% ~ 95%, non-condensing
- Dimensions: 170mm x 170mm
- Weight(GW/ NW): 900g/400g

Ordering Information

- **KINO-DBT-J1900-R10:**
Mini-ITX SBC supports Intel® Celeron® Quad-Core Processor J1900(10W), VGA/DVI/iDP, Dual Realtek® PCIe GbE, USB 3.0, SATA, HD Audio, RoHS
- **KINO-DBT-N29301-R10:**
Mini-ITX SBC supports Intel® Celeron® Quad-Core Processor N2930(7.5W), VGA/DVI/iDP, Dual Realtek® PCIe GbE, USB 3.1, SATA, HD Audio, RoHS
- **KINO-DBT-N28071-R10:**
Mini-ITX SBC supports Intel® Celeron® Dual-Core Processor N2807(4.3W), VGA/DVI/iDP, Dual Realtek® PCIe GbE, USB 3.2, SATA, HD Audio, RoHS
- **KINO-DBT-E38XX1-R10:**
Mini-ITX SBC supports Intel® Celeron® Processor E3845(10W)/ E3827(8W)/ E3826(7W)/ E3825(6W)/ E3815(5W), VGA/DVI/iDP, Dual Realtek® PCIe GbE, USB 3.3, SATA, HD Audio, RoHS (by request MOQ: 100pcs/lot)

- **32205-002700-100-RS:**
RS-232 CABLE ;2;200MM;D-SUB 9, 2*5P P=2.0
- **32006-000300-100-RS:** PS/2 KB/MS Y-cable without bracket
- **32205-003800-300-RS:** RS-422/485 cable, 200mm
- **DP-LVDS-R10:**
DisplayPort to 24-bit dual-channel LVDS 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)
- **DP-HDMI-R10:**
DisplayPort to HDMI 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
VIDEO1	VGA 15-pin Female Connector
VIDEO1	DVI-D 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
CN2	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 Power Mode (default)
Short 2 - 3	AT Power 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
V1	RED	V2	GREEN
V3	BLUE	V4	NC
V5	GND	V6	GND
V7	GND	V8	GND
V9	VCC	V10	GND
V11	NC	V12	DDCDA
V13	HSYNC	V14	VSYNC
V15	DDCCLK		

VIDEO1: DVI-I(Dual Link)+CRT			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
C1	RED	10	DVI_DATA1
C2	GREEN	11	GND
C3	BLUE	12	N/C
C4	HS	13	N/C
C5	GND	14	+5V
C6	NC	15	Hot Plug Detect
1	DVI_DATA2#	16	HPDET
2	DVI_DATA2	17	DVI_DATA0#
3	GND	18	DVI_DATA0
4	N/C	19	GND
5	N/C	20	N/C
6	DDC CLK	21	N/C
7	DDC DATA	22	N/C
8	VS	23	DVI_CLK
9	DVI_DATA1#	24	DVI_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	VCC	2	Mouse Data
3	Mouse Clock	4	Keyboard Data
5	Keyboard Clock	6	GND

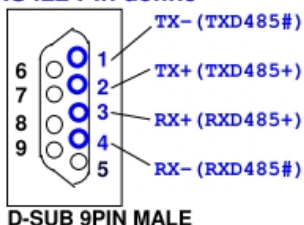
USB1, USB2: Internal USB 2.0 connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	GND
3	USB_DATA-	4	USB_DATA+
5	USB_DATA+	6	USB_DATA-
7	GND	8	VCC

COM1, COM2,: External Serial Port Connector(
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD1	6	DSR1
2	RXD1	7	RTS1
3	TXD1	8	CTS1
4	DTR1	9	RI1
5	GND		

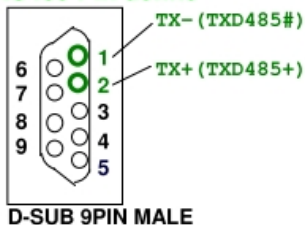
COM3, COM5, COM6: Internal Serial Port Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD	6	CTS
2	DSR	7	DTR
3	RXD	8	RI
4	RTS	9	GND
5	TXD	10	GND

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	5	SATA_RX-
2	SATA_TX+	6	SATA RX+
3	SATA_TX-	7	GND
4	GND	8	N/C

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

CN2: +12V Power Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	PWR	4	PWR

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	12V	2	GND
3	GND	4	5V

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

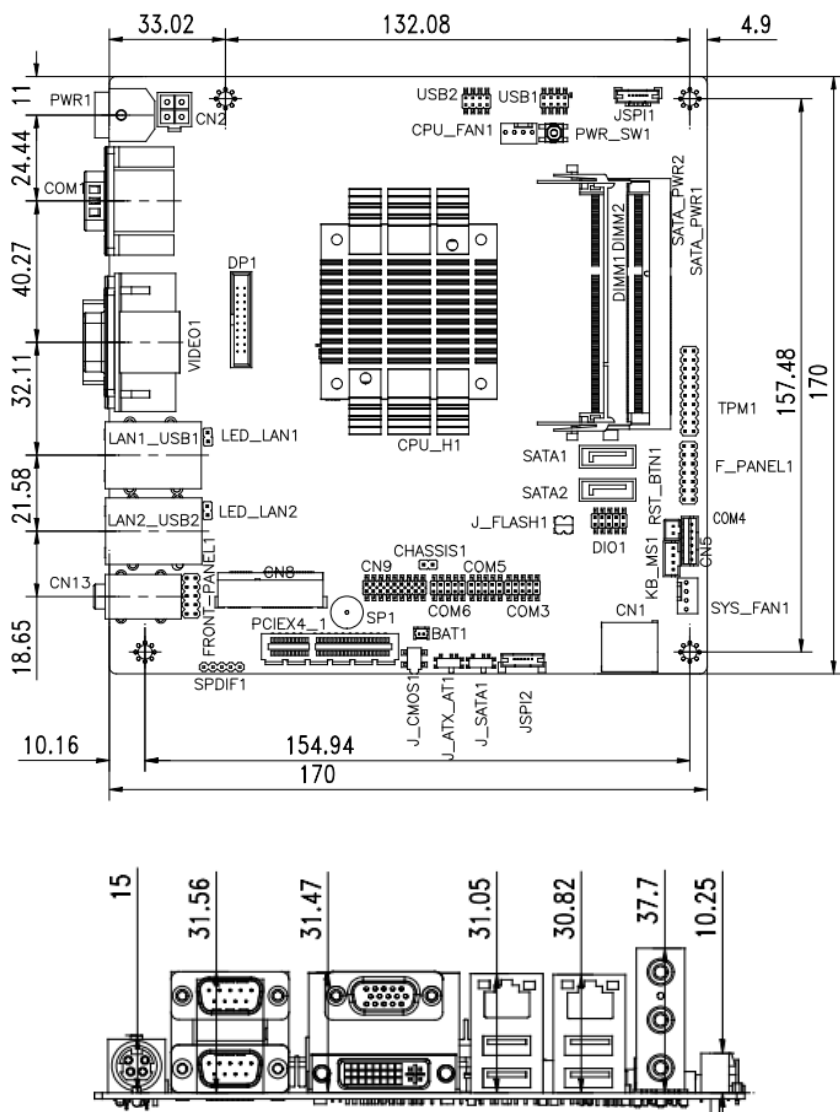
JSPI1: Flash SPI ROM Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+1.8V	2	SPI_CS#
3	SPI_SO	4	SPI_CLK
5	SPI_SI	6	GND

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)