

Mini-ITX SBC supports 22nm LGA1150 socket Intel® Core™ i7/i5/i3 and Celeron® processor, DDR3, DVI-D / VGA / DP, Dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, HD Audio and RoHS

KINO-DH810

Quick Installation Guide

Version 1.0

May 19, 2015.

Package List

KINO-DH810 package includes the following items:

- 1 x KINO-DH810 single board computer
- 2 x SATA with power output cable (P/N:32801-000100-100-RS)
- 1 x I/O shielding (P/N: 45014-0023C0-00-RS)
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)
- 1 x One Key Recovery CD



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Specifications

- CPU:
22nm LGA1150 socket supports Intel® Core™ i7/i5/i3 and Celeron® processor
- PCH: Intel® H81
- Memory:
Two 204-pin 1066/1333/1600 MHz dual-channel DDR3 SRAM Unbuffered SO-DIMMs supported (system max. 16GB)
- BIOS: UEFI BIOS
- Ethernet:
Dual Intel® I211AT PCIe GbE Controller
- Graphic Engine:
Support for DX11.1 and OpenGL3.2
Full MPEG2, VC1, AVC Decode
- Graphic Engine:
DVI-D Integrated in the CPU
VGA Integrated in the Intel® H81
DisplayPort integrated in the CPU (pin header for changing to HDMI, LVDS, VGA, DVI, DisplayPort)
- Super I/O: Fintek F81866
- EC: ITE 8519
- Audio: Realtek ALC662 HD Audio codec
- I/O Interface:
5 x RS-232 (2 on Rear I/O, 3 by pin header)
1 x RS-422/485
1 x 6-pin wafer for PS/2 KB/MS
2 x SATA 6Gb/s without raid support
2 x USB 3.0 (2 on Rear I/O)
6 x USB 2.0 (2 on Rear I/O, 4 by pin header)
- Front Panel: 1 x Front Panel (Power LED, HDD LED, Speaker, Power Button, Reset Button)
- LAN LED: 2 x 2 PIN for LAN1 LED, LAN2 LED

- SM bus: 1 x 4-pin (1x4) wafer
- TPM: 1 x 20-pin (2x10) pinheader
- Expansions:
 - 1 x PCIe x1 (with x1 signal)
 - 1 x Mini PCIe card slot (colay mSATA)
- Watchdog Timer:
 - Software programmable support 1~255 sec. system reset
- Digital I/O:
 - 8-bit digital I/O (4-bit input, 4-bit output)
- FAN:
 - 1 x 4-pin CPU fan connector
 - 1 x 4-pin system fan connector
- Power Supply:
 - DC input (12V only)
- Operation Temperature: -20°C ~ 60°C
- Operation Humidity: 5% ~ 95%, non-condensing
- Dimensions: 170mm X 170mm
- Weight GW/NW: 900g / 450g

Ordering Information

- **KINO-DH810-R10:**
Mini-ITX SBC supports 22nm LGA1150 socket Intel® Core™ i7/i5/i3 and Celeron® processor, DDR3, DVI-D / VGA / DP, Dual Intel® PCIe GbE, USB 3.0, SATA 6Gb/s, HD Audio and RoHS
- **19800-003100-200-RS:** Dual USB cable
- **19800-000300-100-RS:** RS232 cable, 200mm
- **32205-003800-100-RS:** RS-422/485 cable, 200mm
- **32006-001100-100-RS:** KB/MS Y cable
- **TPM-IN01-R11:** 20-pin Infineon TPM module, software management tool, firmware V3.17
- **CF-1156A-RS-R11:** High-performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
- **CF-1156C-RS:** LGA1155/LGA1156 cooler kit, 1U chassis compatible, 45W
- **CF-1156D-RS:** LGA1155/LGA1156 cooler kit, 1U chassis compatible, 65W
- **CF-1156E-RS-R11:** High-performance LGA1155/LGA1156 cooler kit, 95W
- **63040-010060-050-RS:** 12V 60W power adaptor with 4-pin DIN lock, 90 ~ 264VAC input, ErP

Jumpers setting and connectors

LABEL	FUNCTION
J_ATX_AT1	AT/ATX mode select switch
J_CMOS1	Clear CMOS button
BAT1	Battery connector
JSPI1	BIOS SPI ROM programming connector
PWR2	CPU power connector
CHA_DIMM1, CHB_DIMM1	DDR3 SO-DIMM slots
DIO1	Digital I/O connector
DP1	Display port connector
JSPI2	EC SPI ROM programming connector
CPU_FAN1	Fan connector (CPU)
SYS_FAN1	Fan connector (System)
FRONT_PANEL1	Front audio connector
F_PANEL1	Front panel connector
KB_MS1	Keyboard and mouse connector
LED_LAN1, LED_LAN2	LAN LED connectors
PCIEX1_1	PCIe x1 slot
CN2	PCIe Mini card Slot
PWR_SW1	Power button
COM3, COM4, COM5	RS-232 serial port connectors
COM6	RS-422/485 serial port connector
S_ATA1, S_ATA2	SATA 6Gb/s drive connectors
SATA_PWR1, SATA_PWR2	SATA power connectors
CN1	SMBus connector
TPM1	TPM connector
USB1, USB2	Internal USB 2.0 connectors
AUDIO_CV1	Audio jacks
LAN1_USB1	Ethernet and USB 3.0 ports
LAN2_USB1	Ethernet and USB 2.0 ports
PWR1	Power connector
COM1_2	RS-232 serial port connectors
VIDEO1	VGA and DVI connectors

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

J_CMOS1: Clear CMOS button	
PIN NO.	DESCRIPTION
Open	Normal Operation (default)
Push	Clear CMOS Setup

BAT1: Battery Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+VBAT	2	GND

JSPI1: BIOS SPI ROM Programming connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+SPI_VCC	2	SPI_CS0#_CN
3	SPI_SO0_CN	4	SPI_CLK0_CN
5	SPI_SIO_CN	6	GND

PWR2: CPU power connector			
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	+5V
3	DGPO3	4	DGPO2
5	DGPO1	6	DGPO0
7	DGPI3	8	DGPI2
9	DGPI1	10	DGPI0

DP1: Display port connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DDI1_HPD#	2	DPD_AUX_CTRL_P2
3	GND	4	DPD_AUX_CTRL_N2
5	AUX_CTRL_DET_D	6	GND
7	GND	8	DPD_OB_LANE2_P
9	DPD_OB_LANE3_P	10	DPD_OB_LANE2_N
11	DPD_OB_LANE3_N	12	GND
13	GND	14	DPD_OB_LANE0_P
15	DPD_OB_LANE1_P	16	DPD_OB_LANE0_N
17	DPD_OB_LANE1_N	18	+3.3V
19	+5V	20	NC

JSPI2: EC SPI ROM Programming connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+SPI_VCC_EC	2	SPI_CS0#_CN_EC
3	SPI_SO0_CN_EC	4	SPI_CLK0_CN_EC
5	SPI_SI0_CN_EC	6	GND

CPU_FAN1: CPU fan connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+12V
3	FANIO1	4	FANOUT1

SYS_FAN1: System fan connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+12V
3	FANIO2	4	FANOUT2

FRONT_PANEL1: Front audio connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	MIC2-L	2	Analog_GND
3	MIC2-R	4	PRESENCE#
5	LINE2-R	6	MIC2-JD
7	FRONT-IO	8	NC
9	LINE2-L	10	LINE2-JD

F_PANEL1: Front panel connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NC	2	PWRBTN_SW
3	GND	4	HDDLED+
5	HDDLED-	6	PWRLED+
7	PWRLED+	8	GND
9	EXTRST-	10	GND

KB_MS1: Keyboard and mouse connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5V_KBMS	2	MSDATA
3	MSCLK	4	KBDATA
5	KBCLK	6	KBMS_GND

LED_LAN1, LED_LAN2: LAN LED connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+3.3VLAN	2	LAN1/2_LED_LINK#

PWR_SW1: Power button	
PIN NO.	DESCRIPTION
Open	Normal Operation (default)
Push	Power on

COM3: RS-232 serial port connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD3	2	NRXD3
3	NTXD3	4	NDTR3
5	GND	6	NDSR3
7	NRTS3	8	NCTS3
9	NRI3	10	GND

COM4: RS-232 serial port connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD4	2	NRXD4
3	NTXD4	4	NDTR4
5	GND	6	NDSR4
7	NRTS4	8	NCTS4
9	NRI4	10	GND

COM5: RS-232 serial port connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD5	2	NRXD5
3	NTXD5	4	NDTR5
5	GND	6	NDSR5
7	NRTS5	8	NCTS5
9	NRI5	10	GND

COM6: RS-422/485 serial port connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RXD485#	2	RXD485+
3	TXD485+	4	TXD485#

SATA_PWR1, SATA_PWR2: SATA power connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+12V	2	GND
3	GND	4	+5V

CN1: SMBus connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	SMBDATA
3	SMBCLK	4	+5V

TPM1: TPM connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	TPMPCLK	2	GND
3	LPC_FRAME#	4	NC
5	BUF_PCIRST#	6	+5V
7	LPC_AD3	8	LPC_AD2
9	+3.3V	10	LPC_AD1
11	LPC_AD0	12	GND
13	SMBCLK_RESUME	14	SMBDATA_RESUME
15	+3V_DUAL	16	SERIRQ
17	GND	18	+3.3V
19	LPCPD_N	20	LDRQ0#

USB1: USB connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5V	2	GND
3	USB20_C_N4	4	USB20_C_P5
5	USB20_C_P4	6	USB20_C_N5
7	GND	8	+5V

USB2: USB connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5V	2	GND
3	USB20_C_N8	4	USB20_C_P9
5	USB20_C_P8	6	USB20_C_N9
7	GND	8	+5V

LAN2_USB1: Ethernet and USB 2.0 ports			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
P1	+1.5V_LAN2	P2	LAN2_MDIP0
P3	LAN2_MDIN0	P4	LAN2_MDIP1
P5	LAN2_MDIN1	P6	LAN2_MDIP2
P7	LAN2_MDN2	P8	LAN2_MDIP3
P9	LAN2_MDIN3	P10	GND
P11	LAN2_LINK100	P12	LAN2_LINK1000
P13	LAN2_ACT-1	P14	+V3.3A_LAN2
U1	+USB_PWR1	U2	USB20_C_N10
U3	USB20_C_P10	U4	GND
U5	+USB_PWR1	U6	USB20_C_N11
U7	USB20_C_P11	U8	GND

LAN1_USB1: Ethernet and USB 3.0 ports			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	USB3_PWR1	2	USB2P0_DM1
3	USB2P0_DP1	4	GND
5	USB3P0_RXDN1	6	USB3P0_RXDP1
7	GND	8	USB3P0_TXDN1
9	USB3P0_TXDP1	10	USB3_PWR2
11	USB2P0_DM2	12	USB2P0_DP2
13	GND	14	USB3P0_RXDN2
15	USB3P0_RXDP2	16	GND
17	USB3P0_TXDN2	18	USB3P0_TXDP2
19	+0.9V_LAN1	20	LAN1_MDIP0
21	LAN1_MDIN0	22	LAN1_MDIP1
23	LAN1_MDIN1	24	LAN1_MDIP2
25	LAN1_MDIN2	26	LAN1_MDIP3
27	LAN1_MDIN3	28	GND
29	+3.3V_LAN1	30	LAN1_LINK_ACT#
31	LAN1_100#	32	LAN1_1000#

PWR1: Power connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+12V	2	GND
3	+12V	4	GND
5	GND		

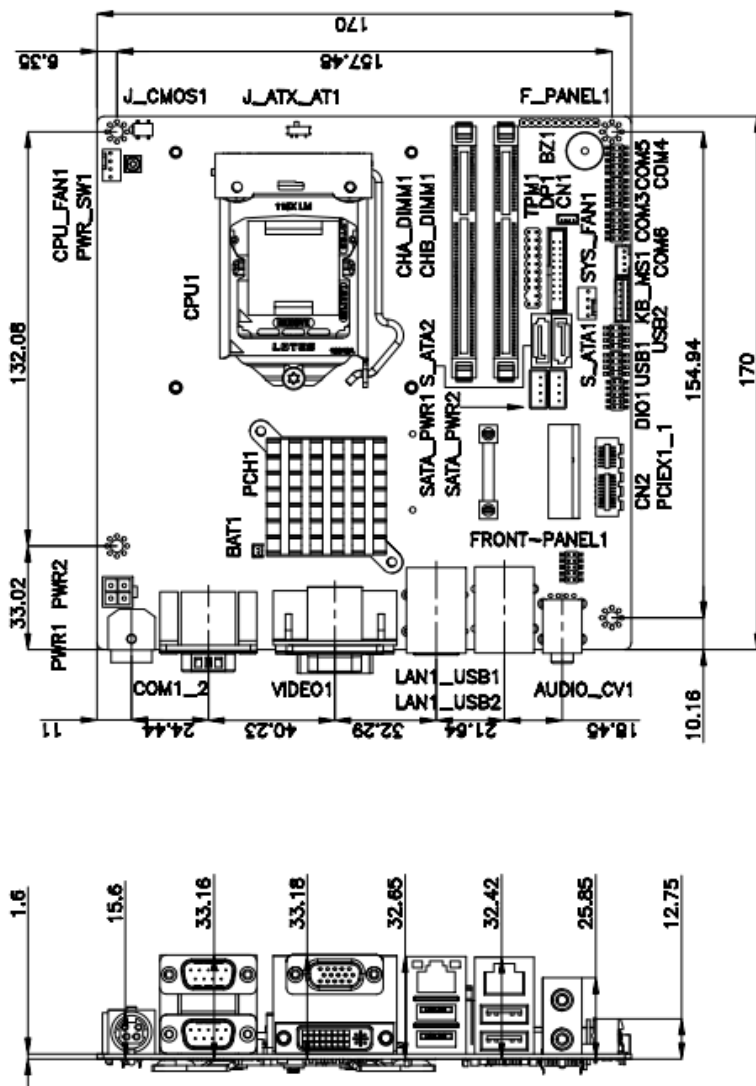
COM1: RS-232 serial port connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD1#	2	NRXD1
3	NTXD1	4	NDTR1#
5	GND	6	NDSR1#
7	NRTS1#	8	NCTS1#
9	NRI1#		

COM2: RS-232 serial port connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NDCD2#	2	NRXD2
3	NTXD2	4	NDTR2#
5	GND	6	NDSR2#
7	NRTS2#	8	NCTS2#
9	NRI2#		

VGA: VGA connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Red	2	Green
3	Blue	4	NC
5	GND	6	GND
7	GND	8	GND
9	VGAVCC	10	HOTPLUG
11	NC	12	DDCDAT
13	HSYNC	14	VSYNC
15	DDCCLK		

DVI: DVI connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	DVI_TMDS_C_DATA2#	2	DVI_TMDS_C_DATA2
3	GND	4	NC
5	NC	6	DVI_DDC_SCLK
7	DVI_DDC_SDATA	8	NC
9	DVI_TMDS_C_DATA1#	10	DVI_TMDS_C_DATA1
11	GND	12	NC
13	NC	14	+5V_DVI
15	GND	16	DVI_HPD
17	DVI_TMDS_C_DATA0#	18	DVI_TMDS_C_DATA0
19	GND	20	NC
21	NC	22	GND
23	DVI_TMDS_C_CLK	24	DVI_TMDS_C_CLK#
C1	NC	C2	NC
C3	NC	C4	NC

Board Layout: Jumper and Connector Locations



(Unit: mm)