

# User Manual

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## SKD-70 Mini ITX Motherboard

A decorative graphic consisting of multiple overlapping, wavy lines in shades of gray, creating a sense of motion and depth across the lower half of the page.

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# SKD-70 Mini ITX Motherboard

## User Manual

(Version 1.3)

Version:		
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V1.0	Initial Version.	2017/05/27
V1.1	Updated Version	2017/09/18
V1.3	Add Z170 Chipset	2022/05/06

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## Chapter 1 Product Introduction

### 1.1 Brief Introduction

The SKD-70 is a mini ITX motherboard based on the Intel® PCH B150/H110/Z170 Chipset and supports the Intel® Skylake-S/Kabylake-S processors.

### 1.2 Parameters

**CPU:** Intel Skylake-S/Kabylake-S Processor (LGA1151 Socket)

**Chipset:** Intel PCH B150/H110/Z170

**Memory:** Dual Channel SO-DIMM DDR4 up to 32GB

**GPU:** Integrated graphics based on processors. Display via 1x HDMI1.4, 1x DP1.2 standard interface, 1x eDP1.3 interface (optional)

**Storage:** 2 x SATA3.0, 1 x M.2\_Key B for 2242 SSD

**USB:** 4xUSB3.0(rear ports), 2xUSB2.0(rear ports), 3xUSB2.0(1\*vertical interface+2\*headers, onboard pin 2.0mm)

**Ethernet:** 3xRJ45 interface Intel i211 Gigabit network controllers

**Audio:** High-definition audio codec, supports rear Line-out, Mic-in, optional Line-in; front Line-out, Mic-in, and power amplifier (on-board pins, connecting passive speaker)

**Serial Port:** 4x RS232 (optional 5V/12V power supply for COM1/2), 1x RS485

**Expansion:** 1 x M.2 Key E for 2230 Wi-Fi card, 1x PCIe1X, 1xPCIe16X

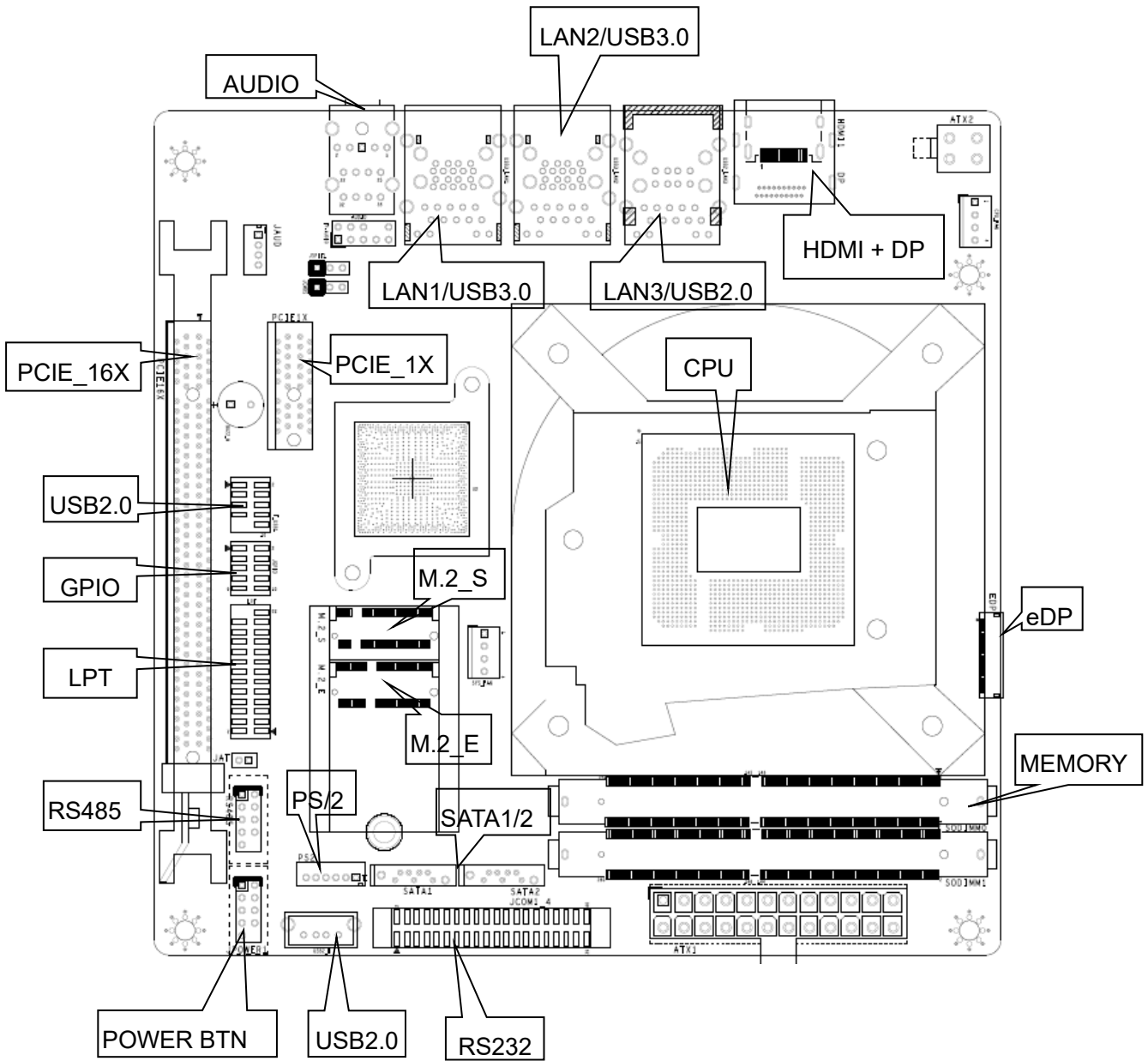
**Other I/O:** 8 x GPIO (on-board pin), 1 x PS/2 (pin, KB+MOUSE) 1 x LPT (pin)

**Dimension:** 170mm x 170mm

**Power:** ATX\_24PIN+ATX\_12V auxiliary power supply (2x2)

**Working Temperature:** -40°C~60°C

### 1.3 Connector Diagram



## Chapter 2 Hardware

### 2.1 Jumper Setting

Please configure the jumpers according to your requirements before installing the hardware.

How to identify the first header of jumpers and pins:

1. Observe the mark beside the jumper or pins, and find the header marked by “1” or bold line/triangular symbol.
2. Observe the rear panel and the header with a square solder pad is the first header.

### 2.2 Memory Slots

On-board 2 x SO-DIMM DDR4 slots, support dual channels, maximum capacity 32GB.

### 2.3 Display

1 x HDMI1.4 standard interface; 1x DP 1.2 interface and 1x optional eDP 1.3 interface (2 LANE).

**eDP:**

Pin	Signal	Pin	Signal
1	BL_VCC	16	AUX_N
2	BL_VCC	17	AUX_P
3	BL_VCC	18	GND
4	BL_VCC	19	LANE0P
5	BL_PWM	20	LANE0N
6	BL_EN	21	GND
7	GND	22	LANE1P
8	GND	23	LANE1N
9	GND	24	GND
10	GND	25	NC
11	HPD	26	NC
12	GND	27	GND
13	LCD_VCC	28	NC
14	LCD_VCC	29	NC
15	GND	30	GND

## 2.4 Storage

It supports 2xSATA3.0 interfaces, and 1xM.2 Key B slot for 2242 SSD.

## 2.5 USB

The board supports four standard USB3.0 ports; two standard USB2.0 ports on its rear panel; one vertical USB2.0 interface and two USB2.0 headers onboard.

The USB2.0 rear ports are powered by 5V standby voltage and support a wake-up system through a USB keyboard/mouse when the PC is turned off (not disconnected to the power). They also can be used as a charger for external devices: 5V/500mA.

## 2.6 LAN

The board features the Intel i211 High-performance Gigabit network controllers, provides 3x RJ45 interfaces, supports Magic packet wake up and the LAN1 supports PXE network boot.

### LED Status Indicator:

LILED (Green) Status	Function	ACTLED (Orange) Status	Function
Always on	Network connected	Blinking	Data transmitting

## 2.7 Audio

ALC662 Audio Codec. The green interface is the audio output (Speaker\_out), and the pink interface is the Mic input (Mic-in), the blue interface is the Line\_in as an optional choice. The JAUD is for the power amplifier, and the JSPIF pin is for SPDIF.

### FP\_AUDIO:

Signal	Pin		Signal
MIC2-L	1	2	AGND
MIC2-R	3	4	AVCC
FRO-R	5	6	MIC2-JD
F-IO-SEN(AGNG)	7	8	(NC)
FRO-L	9	10	LIN2-JD



**JAUD:**

Pin	Signal
1	L+
2	L-
3	R-
4	R+

**2.8 COM (screen printing: JCOM1\_4, RS485)**

The board supports 1xRS485 and 4xRS232 serial ports. Optional 5V/12V power supply for COM1 and COM2.

**JCOM1\_4:**

Signal	Pin		Signal
DCD#	1	2	RXD
TXD	3	4	DTR#
GND	5	6	DSR#
RTS#	7	8	CTS#
RI#	9	10	NC(optional 5V/12V)
DCD#	11	12	RXD
TXD	13	14	DTR#
GND	15	16	DSR#
RTS#	17	18	CTS#
RI#	19	20	NC(optional 5V/12V)
DCD#	21	22	RXD
TXD	23	24	DTR#
GND	25	26	DSR#
RTS#	27	28	CTS#
RI#	29	30	NC
DCD#	31	32	RXD
TXD	33	34	DTR#
GND	35	36	DSR#
RTS#	37	38	CTS#
RI#	39	40	NC

**RS485:**

Signal	Pin	Signal
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DATA-	1	2	NC
DATA+	3	4	NC
NC	5	6	NC
NC	7	8	NC
GND	9	10	(N/A)

## 2.9 LPT (screen printing: LPT)

On-board 1 set of 2x13 pin (2.0mm) LPT interface. The adapter cable is needed to transfer the LPT to the standard parallel interface for use. Users can connect it to equipment like printer according to their actual requirements.

**LPT** (screen printing: LPT)

Signal	Pin		Signal
STB	1	2	AFD
LPT_PPD0	3	4	ERROR
LPT_PPD1	5	6	INIT
LPT_PPD2	7	8	SLIN
LPT_PPD3	9	10	GND
LPT_PPD4	11	12	GND
LPT_PPD5	13	14	GND
LPT_PPD6	15	16	GND
LPT_PPD7	17	18	GND
ACK	19	20	GND
BUSY	21	22	GND
PE	23	24	GND
SLCT	25	26	(NC)

## 2.10 Expansion Slots (screen printing: M.2\_S, M.2\_E, PCIe 4X)

1x M.2 Key E, type 2230 for Wi-Fi card.

## 2.11 PCIe Slots (screen printing: PCIe16X, PCIe1X)

Both of PCIe slots supports PCI Express 3.0, the PCIe 16X is mainly used for external graphics cards, while

PCIe 1X is mainly used for external network cards and other devices.

## 2.12 GPIO (screen printing: JGPIO)

The board is equipped with a set of 2 x 5pin as JGPIO pin (2.0mm spacing), supporting 8 programmable I/O lanes in total.

**GPIO** (screen printing: JGPIO)

Signal	Pin		Signal
GPP_A18	1	2	3.3V
GPP_A19	3	4	GPP_C16
GPP_A20	5	6	GPP_C17
GPP_A21	7	8	GPP_C18
GND	9	10	GPP_C19

## 2.13 PS/2 (screen printing: PS2)

Pin	Signal
1	+5V
2	KB_DATA
3	KB_CLK
4	MS_DATA
5	MS_CLK
6	GND

## 2.14 Switch panel pin (screen printing: JPOWER1)

The front control panel interfaces are to connect the functional buttons and indicators on the front panel.

**JPOWER1:**

Signal	Pin		Signal
HDD_LED+	1	2	PWR_LED+

HDD_LED-	3	4	PWR_LED-
RSTBTN-	5	6	PWR_ON+
RSTBTN+	7	8	PWR_ON-
NUL	9	10	(NC)

### 2.15 Hardware Auto Start (screen printing: JAT)

JAT:

Settings	JAT
Close	Hardware Auto Start

### 2.16 CMOS Clearance/Retention (screen printing: JCMOS)

CMOS is powered by the on-board button batteries. Clearing CMOS will permanently remove the previous system settings and restore the board to the original (factory settings) system settings.


**Step 1:** Turn off the PC and disconnect power adapter.

**Step 2:** Use the jumper cap to connect the 1st and 2nd headers of JCMOS for about 10 seconds and disconnect.

**Step 3:** When starting the device, press the <DEL> button to enter the BIOS, load the optimal default value and save and exit the settings.

JCOMS:

Settings	JCMOS
Close	Clear the CMOS, restore to factory setting
Open	Normal boot, the default setting

 Please do not clear COMS when the PC is connected to power in case of board damages.