

# Seavo Motherboard User's Manual

用户手册

## SV1a-H3124P Series

Ver 0.0



## Contents

|                                                                             |    |
|-----------------------------------------------------------------------------|----|
| 1. Models and Attentions .....                                              | 2  |
| 1.1 Models.....                                                             | 2  |
| 1.2 Attentions .....                                                        | 2  |
| 2. Specification .....                                                      | 3  |
| 3. Functional Block Diagram.....                                            | 5  |
| 4. Mechanical Drawing .....                                                 | 6  |
| 5. Jumpers / Headers and Connectors .....                                   | 7  |
| 6. Definition of Jumpers /Headers and Connectors .....                      | 10 |
| 1) SIM1 (SIM Card Header 6*1 Pin 2.00mm).....                               | 10 |
| 2) LVDS_P1 (eDP/LVDS Backlight Control Header 6*1 Pin 2.00mm).....          | 10 |
| 3) JC_LVDS2 (eDP/LVDS VDD Select Jumper 3*2 Pin 2.54 mm).....               | 10 |
| 4) LVDS1 (eDP/LVDS Signal Header 15*2 Pin 2.00mm).....                      | 10 |
| 5) CPU_FAN1 (CPU FAN Header 4*1 Pin 2.54mm).....                            | 11 |
| 6) JC_LVDS1 (eDP/LVDS Backlight PWM/CCFL Select Jumper 3*1 Pin 2.54mm)..... | 11 |
| 7) J_COM1 (COM1 Header 5*2 Pin 2.00mm).....                                 | 11 |
| 8) J_COM2 (COM2 Header 5*2 Pin 2.00mm).....                                 | 12 |
| 9) JSEL1 (COM3 RS232/485 Select Jumper 3*2 Pin 2.54 mm).....                | 12 |
| 10) J_COM3 (COM3 Header 5*2 Pin 2.00mm).....                                | 12 |
| 11) JSEL2 (COM4 RS232/485 Select Jumper 3*2 Pin 2.54 mm).....               | 13 |
| 12) J_COM4 (COM4 Header 5*2 Pin 2.00mm).....                                | 13 |
| 13) F_PANEL1 (Front Panel Header 5*2 Pin 2.54mm).....                       | 13 |
| 14) SYS_FAN1 (System FAN Header 3*1 Pin 2.54mm).....                        | 13 |
| 15) J_GPIO1 (GPIO Header 6*2 Pin 2.00mm).....                               | 14 |
| 16) F_USB2 (Front USB2.0 Header2 5*2 Pin 2.54mm).....                       | 14 |
| 17) F_USB1 (Front USB2.0 Header1 5*2 Pin 2.54mm).....                       | 14 |
| 18) J_AT1 (AT or ATX Select Jumper 3*1 Pin 2.54mm).....                     | 15 |
| 19) J_DBG1 (Port80 Debug Header 9*1 Pin 2.00mm).....                        | 15 |
| 20) P_SATA2 (SATA Power Header2 4*1 Pin 2.00mm).....                        | 15 |
| 21) P_SATA1 (SATA Power Header1 4*1 Pin 2.00mm).....                        | 15 |
| 22) CLR_CMOS1 (CMOS Clear Jumper 3*1 Pin 2.54mm).....                       | 15 |
| 23) BAT1 (CMOS Battery Header 2*1 Pin 1.25mm).....                          | 15 |
| 24) DC_IN2 (DC 12V Power Input Header 4*1 Pin 2.54mm).....                  | 16 |
| 25) J_SPK_R1 (Right Amplifier Header 2*1 Pin 2.00mm).....                   | 16 |
| 26) J_SPK_L1 (Left Amplifier Header 2*1 Pin 2.00mm).....                    | 16 |
| 38) LAN1* (GBE LAN RJ45 Connector2 8Pin).....                               | 16 |
| 39) RJ45_1 (GBE LAN RJ45 Connector1 8Pin).....                              | 17 |
| 7. BIOS setup .....                                                         | 18 |

# 1. Models and Attentions

## 1.1 Models

This manual is applied to following models:

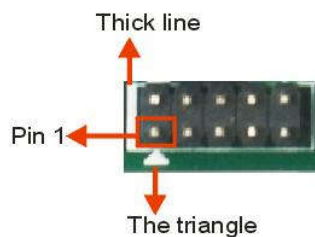
| Model       | Chipset | COM | LAN | USB | PCIe | DP ++ | LVDS/ EDP | HDMI | M.2 Key-B | M.2 Key-E | M.2 Key-M      | SATA 3.0 |
|-------------|---------|-----|-----|-----|------|-------|-----------|------|-----------|-----------|----------------|----------|
| SV1a-Q3724P | Q370    | 4   | 2   | 8   | x4   | 1     | LVDS      | 2    | 4G/3G     | WIFI+ BT  | SATA/ NVMe SSD | 2        |
| SV1a-H3124P | H310    | 4   | 2   | 8   | x4   | 1     | LVDS      | 2    | 4G/3G     | WIFI+ BT  | SATA SSD       | 2        |

## 1.2 Attentions

1) Notes under a table or figure indicate the difference of models, or alternative definition of specific pin of the header (jumper/connector).

2) How to identify the first pin of a header or jumper

- Usually, there is a thick line or a triangle near the header's or jumper's pin 1.



- Square pad, which you can find on the back of the motherboard, is usually used for pin 1.



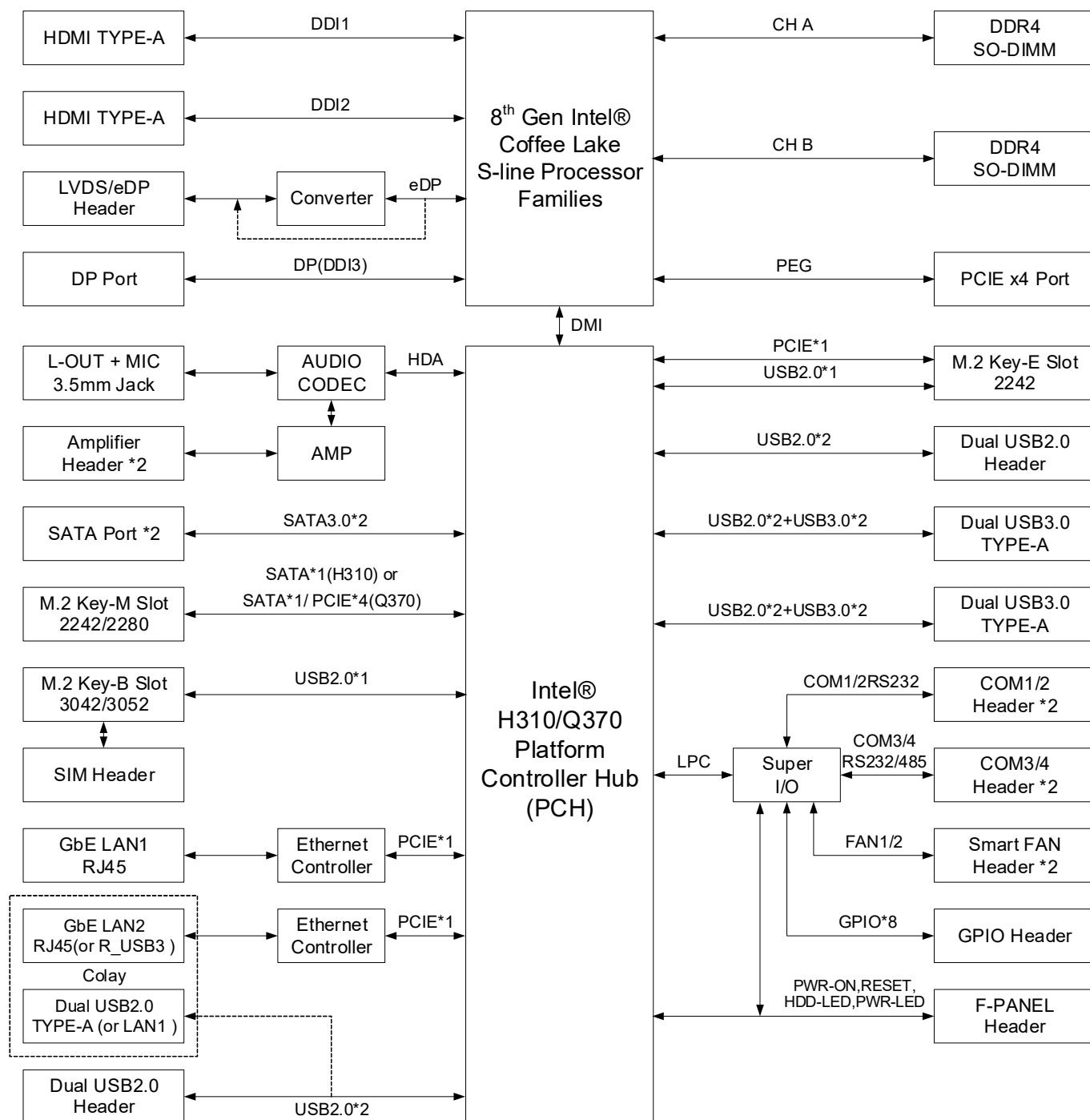
## 2. Specification

| Model                  | SV1a-Q3724P                                                                                                                                                                                                                                   | SV1a-H3124P                             |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| CPU                    | Support Intel® 8-9th Generation Core / Pentium/ Celeron Desktop CPU, LGA1151<br>Support MAX CPU TDP: Hexa-Core 65W                                                                                                                            |                                         |
| Chipset                | Intel® Q370, TDP 6W                                                                                                                                                                                                                           | Intel® H310, TDP 6W                     |
| Display <sup>[1]</sup> | 2 * HDMI (upright 90° TYPE-A): max resolution up to 4096x2160@24Hz<br>1 * DP++ (upright 90° Connector): DP++ max resolution up to 4096x2304@60Hz<br>1 * LVDS/EDP (Header): LVDS up to 1920x1200@60Hz (default)<br>or EDP up to 4096x2160@60Hz |                                         |
| Memory <sup>[2]</sup>  | Support DDR4-2400/2666MHz, 2 * non-ECC SO-DIMM Slot, Up to 32GB                                                                                                                                                                               |                                         |
| Storage                | Support RAID 0/1/5/10 when chipset is customized into Intel® Q370,<br>2 * SATA3.0 7P Connector (with 2 * SATA Power Header)<br>1 * M.2 (NGFF) key-M Slot                                                                                      |                                         |
|                        | Support M.2 Key-M 2242/2280 SATA/<br>NVMe SSD <sup>[3]</sup>                                                                                                                                                                                  | Support M.2 Key-B 2242/2280 SATA<br>SSD |
| Ethernet               | RJ45_1: 1 * Realtek GBE LAN Chip (RJ45, 10/100/1000 Mbps)<br>LAN1: 1 * Realtek GBE LAN Chip (RJ45, 10/100/1000 Mbps) (Optional, default onboard <sup>[4]</sup> )                                                                              |                                         |
| Audio                  | Realtek ALC662 5.1 Channel HDA Codec,<br>1 * MIC 3.5mm Jack<br>1 * Line-Out 3.5mm Jack<br>2 * Amplifier, 5-W (per channel) into an 8-Ω Loads                                                                                                  |                                         |
| Expansion Slots        | 1 * PCI-E 4x Slot (PCIe 3.0)                                                                                                                                                                                                                  | 1 * PCI-E 4x Slot (PCIe 2.0)            |
|                        | 1 * M.2 (NGFF) Key-B Slot (4G/3G, 3042, with 1 * SIM Header)<br>1 * M.2 (NGFF) key-E Slot (PCIe+USB, WIFI+BT, 2230)                                                                                                                           |                                         |
| COM                    | 2 * RS232 (COM1/2, Full lanes, Header)<br>2 * RS232/485 (COM3/4, Full lanes, Header)                                                                                                                                                          |                                         |
| USB                    | 4 * USB3.0 (TYPE-A, Rear IO)<br>4 * USB2.0 (Header, Internal) <sup>[4]</sup>                                                                                                                                                                  |                                         |
| Other Ports            | 8 * GPIO<br>1 * Port80 Debug Header<br>1 * CPU FAN Header<br>1 * System FAN Header<br>1 * AT or ATX Select Jumper<br>1 * CMOS Clear Jumper<br>1 * Front Panel Header (PWR-ON+RST+HD LED+PWR LED)                                              |                                         |
| System                 | Windows 10, Linux                                                                                                                                                                                                                             |                                         |
| Temperature            | Storage: -20~75°C<br>Operating: 0~60°C                                                                                                                                                                                                        |                                         |
| BIOS                   | AMI UEFI BIOS (Support Watchdog Timer)                                                                                                                                                                                                        |                                         |
| Power Supply           | DC 12V<br>1 * DC 12V Power Input Header<br>1 * DC 12V Power Input Φ2.5mm Jack                                                                                                                                                                 |                                         |
| Factor                 | ITX Standard (170mm * 170mm)                                                                                                                                                                                                                  |                                         |

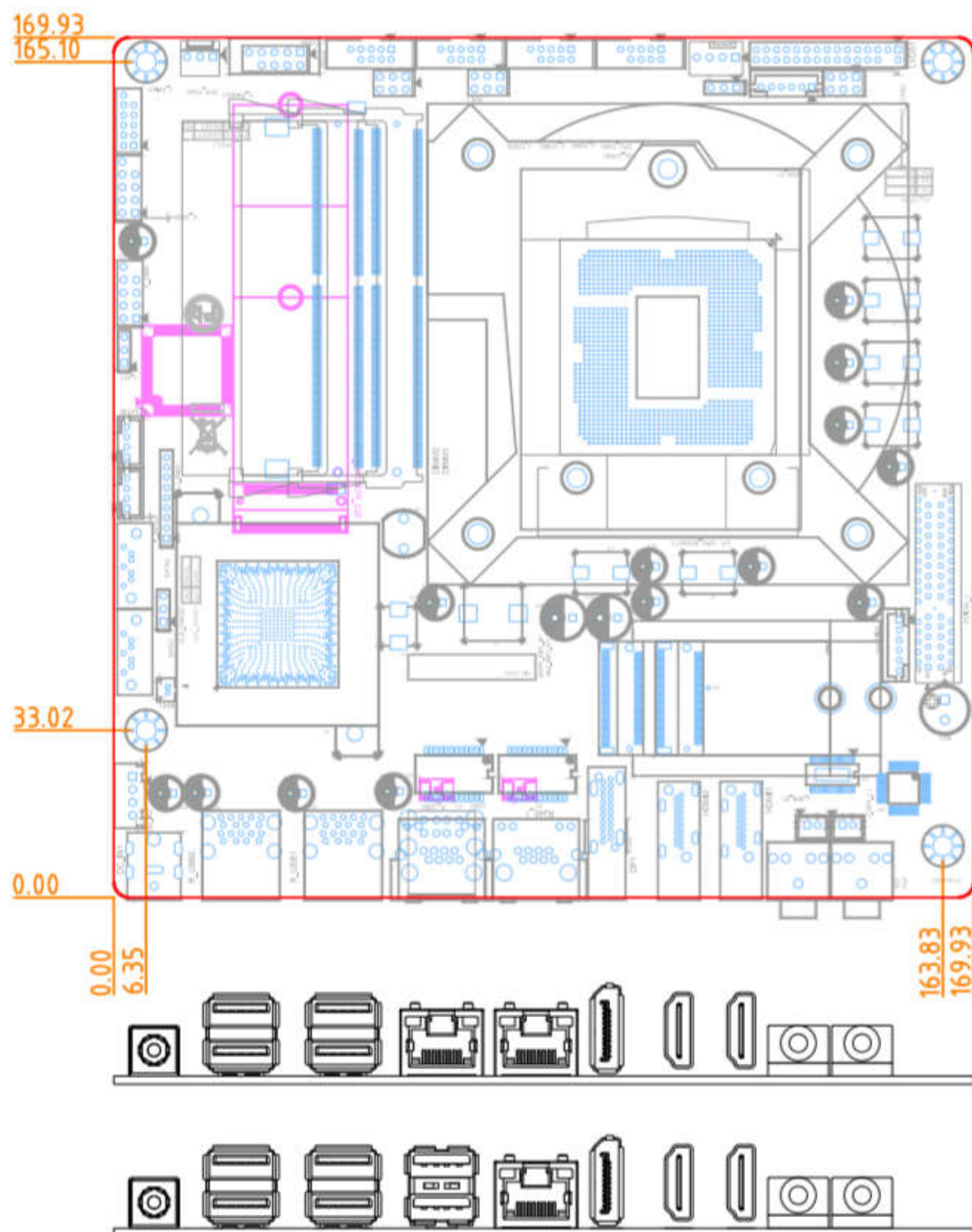
**Notes:**

- [1]: Up to two displays can be activated at the same time when chipset is customized into Intel® H310. Up to three displays can be activated at the same time when chipset is customized into Intel® Q370.
- [2]: Supported memory frequency is determined by the CPU, supports up to 2666MHz.
- [3]: It supports NVMe SSD signal by default and can supports SATA signal if specified. (resistor selectable).
- [4]: PCH\_USB2\_5/6 Signal of F\_USB1 colay with R\_USB3. And LAN1 colay with R\_USB3 on the same position, support F\_USB1 and LAN1 by default (R\_USB3 not support).

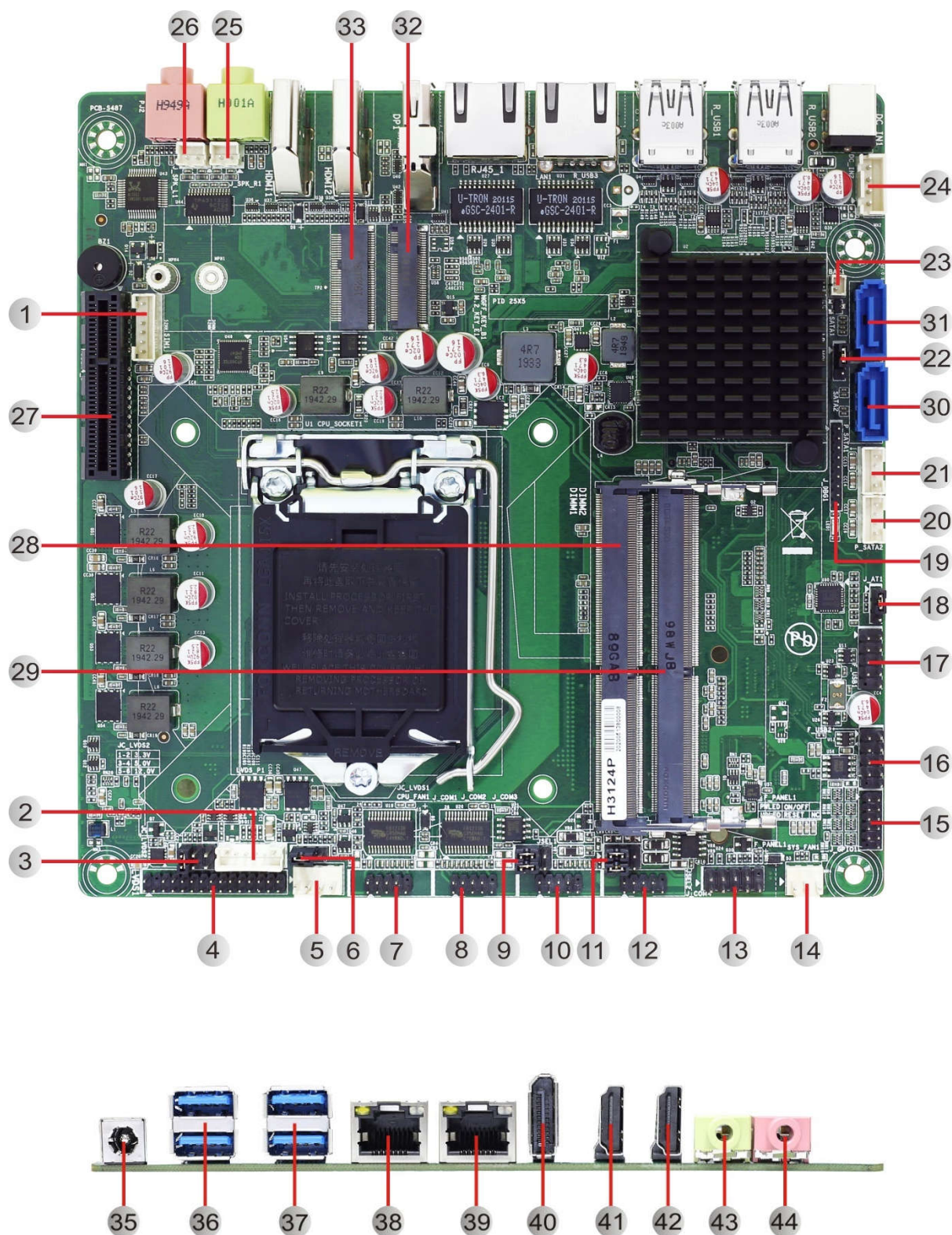
### 3.Functional Block Diagram

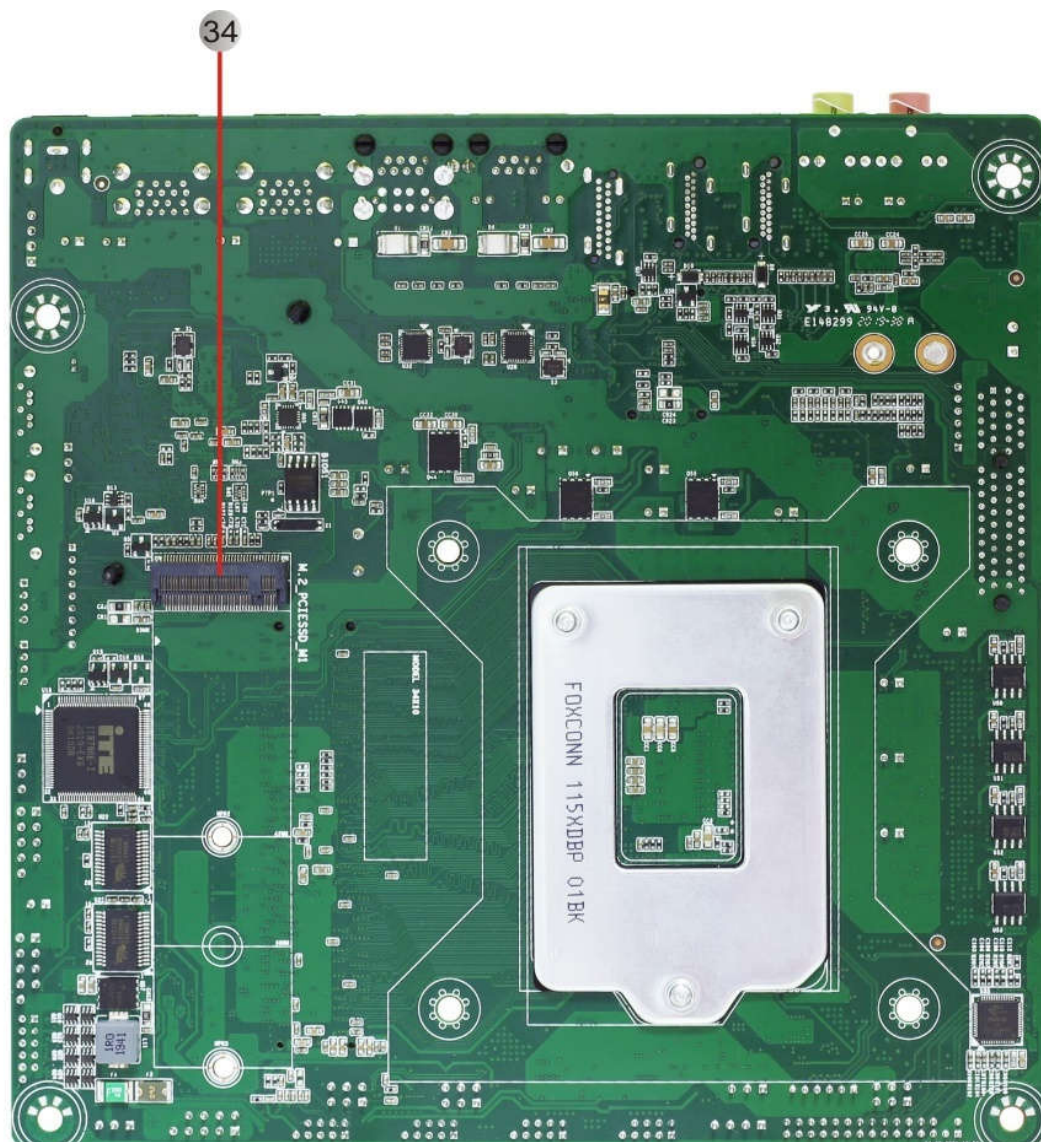


## 4. Mechanical Drawing



## 5. Jumpers / Headers and Connectors





### Jumpers / Headers and Connectors

|    |          |                                           |
|----|----------|-------------------------------------------|
| 1  | SIM1     | SIM Card Header                           |
| 2  | LVDS_P1  | eDP/LVDS Backlight Control Header         |
| 3  | JC_LVDS2 | eDP/LVDS VDD Select Jumper                |
| 4  | LVDS1    | eDP/LVDS Signal Header                    |
| 5  | CPU_FAN1 | CPU FAN Header                            |
| 6  | JC_LVDS1 | eDP/LVDS Backlight PWM/CCFL Select Jumper |
| 7  | J_COM1   | COM1 Header                               |
| 8  | J_COM2   | COM2 Header                               |
| 9  | JSEL1    | COM3 RS232/485 Select Jumper              |
| 10 | J_COM3   | COM3 Header                               |
| 11 | JSEL2    | COM4 RS232/485 Select Jumper              |
| 12 | J_COM4   | COM4 Header                               |
| 13 | F_PANEL1 | Front Panel Header                        |

|    |                |                                                                                                                                 |
|----|----------------|---------------------------------------------------------------------------------------------------------------------------------|
| 14 | SYS_FAN1       | System FAN Header                                                                                                               |
| 15 | J_GPIO1        | GPIO Header                                                                                                                     |
| 16 | F_USB2         | Front USB2.0 Header2                                                                                                            |
| 17 | F_USB1         | Front USB2.0 Header1                                                                                                            |
| 18 | J_AT1          | AT or ATX Select Jumper                                                                                                         |
| 19 | J_DBG1         | Port80 Debug Header                                                                                                             |
| 20 | P_SATA2        | SATA Power Header2                                                                                                              |
| 21 | P_SATA1        | SATA Power Header1                                                                                                              |
| 22 | CLR_CMOS1      | CMOS Clear Jumper                                                                                                               |
| 23 | BAT1           | CMOS Battery Header                                                                                                             |
| 24 | DC_IN2         | DC 12V Power Input Header                                                                                                       |
| 25 | J_SPK_R1       | Right Amplifier Header                                                                                                          |
| 26 | J_SPK_L1       | Left Amplifier Header                                                                                                           |
| 27 | PCIEX4_1       | PCI-E 4x Slot                                                                                                                   |
| 28 | DIMM1          | DDR4 SO-DIMM Slot1                                                                                                              |
| 29 | DIMM2          | DDR4 SO-DIMM Slot2                                                                                                              |
| 30 | SATA2          | SATA3.0 7P Connector2                                                                                                           |
| 31 | SATA1          | SATA3.0 7P Connector1                                                                                                           |
| 32 | NGFF_KEY_B1    | M.2 (NGFF) key-B Slot (4G/3G, 3042)                                                                                             |
| 33 | M.2_KEY_E1     | M.2 (NGFF) key-E Slot (PCIe+USB, WIFI+BT, 2230)                                                                                 |
| 34 | M.2_PCIESSD_M1 | M.2 (NGFF) key-M Slot<br>(Support M.2 Key-B 2242/2280 SATA SSD for H310,<br>Support M.2 Key-M 2242/2280 SATA/NVMe SSD for Q370) |
| 35 | DC_IN1         | DC 12V Power Input $\Phi$ 2.5mm Jack                                                                                            |
| 36 | R_USB2         | Dual USB3.0 TYPE-A Connector2                                                                                                   |
| 37 | R_USB1         | Dual USB3.0 TYPE-A Connector1                                                                                                   |
| 38 | LAN1(R_USB3)   | GBE LAN RJ45 Connector2 (colay with R_USB3)                                                                                     |
| 39 | RJ45_1         | GBE LAN RJ45 Connector1                                                                                                         |
| 40 | DP1            | DP++ Upright Connector                                                                                                          |
| 41 | HDMI2          | HDMI Upright TYPE-A Connector2                                                                                                  |
| 42 | HDMI1          | HDMI Upright TYPE-A Connector1                                                                                                  |
| 43 | PJ1            | Line-Out 3.5mm Jack                                                                                                             |
| 44 | PJ2            | MIC 3.5mm Jack                                                                                                                  |

## 6. Definition of Jumpers /Headers and Connectors

### 1) SIM1 (SIM Card Header 6\*1 Pin 2.00mm)

| Graphic                                                                           | Pin | Definition | Pin | Definition |
|-----------------------------------------------------------------------------------|-----|------------|-----|------------|
|  | 1   | UIM_PWR    | 4   | UIM_CLK    |
|                                                                                   | 2   | GND        | 5   | UIM_RST    |
|                                                                                   | 3   | UIM_DAT    | 6   | UIM_VPP    |

### 2) LVDS\_P1 (eDP/LVDS Backlight Control Header 6\*1 Pin 2.00mm)

| Graphic                                                                           | Pin | Definition            | Pin | Definition       |
|-----------------------------------------------------------------------------------|-----|-----------------------|-----|------------------|
|  | 1   | GND                   | 4   | LVDS/eDP_BKLT_EN |
|                                                                                   | 2   | GND                   | 5   | + 12V            |
|                                                                                   | 3   | LVDS/eDP_BKLT_CTL [1] | 6   | + 12V            |

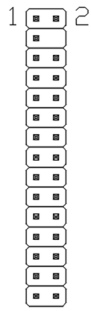
**Notes:**

[1]: LVDS/eDP\_BKLT\_CTL can be PWM /CCF by selecting JC\_LVDS1 Jumper, check Table6 for detail.

### 3) JC\_LVDS2 (eDP/LVDS VDD Select Jumper 3\*2 Pin 2.54 mm)

| Graphic                                                                             | Setting      | Function |
|-------------------------------------------------------------------------------------|--------------|----------|
|  | 1-2(Default) | + 3.3V   |
|                                                                                     | 3-4          | + 5V     |
|                                                                                     | 5-6          | + 12V    |

### 4) LVDS1 (eDP/LVDS Signal Header 15\*2 Pin 2.00mm)

| Graphic                                                                             | Pin | Definition                               | Pin | Definition                               |
|-------------------------------------------------------------------------------------|-----|------------------------------------------|-----|------------------------------------------|
|  | 1   | VDD_PANEL [1]                            | 2   | VDD_PANEL [1]                            |
|                                                                                     | 3   | VDD_PANEL [1]                            |     |                                          |
|                                                                                     | 5   | N/C (LVDS Forced Output)/<br>EDP_HPD [2] | 6   | N/C (LVDS Forced Output)/<br>EDP_HPD [2] |
|                                                                                     | 7   | LVDS_A_DATA0-/<br>N/C [2]                | 8   | LVDS_A_DATA0+/<br>N/C [2]                |
|                                                                                     | 9   | LVDS_A_DATA1-/<br>N/C [2]                | 10  | LVDS_A_DATA1+/<br>N/C [2]                |
|                                                                                     | 11  | LVDS_A_DATA2-/<br>N/C [2]                | 12  | LVDS_A_DATA2+/<br>N/C [2]                |
|                                                                                     | 13  | GND                                      | 14  | GND                                      |

|  |    |                                           |    |                                           |
|--|----|-------------------------------------------|----|-------------------------------------------|
|  | 15 | LVDS_A_CLK-/<br>N/C <sup>[2]</sup>        | 16 | LVDS_A_CLK+/<br>N/C <sup>[2]</sup>        |
|  | 17 | LVDS_A_DATA3-/<br>N/C <sup>[2]</sup>      | 18 | LVDS_A_DATA3+/<br>N/C <sup>[2]</sup>      |
|  | 19 | LVDS_B_DATA0-/<br>EDP_TX0- <sup>[2]</sup> | 20 | LVDS_B_DATA0+/<br>EDP_TX0+ <sup>[2]</sup> |
|  | 21 | LVDS_B_DATA1-/<br>EDP_TX1- <sup>[2]</sup> | 22 | LVDS_B_DATA1+/<br>EDP_TX1+ <sup>[2]</sup> |
|  | 23 | LVDS_B_DATA2-/<br>EDP_TX2- <sup>[2]</sup> | 24 | LVDS_B_DATA2+/<br>EDP_TX2+ <sup>[2]</sup> |
|  | 25 | GND                                       | 26 | GND                                       |
|  | 27 | LVDS_B_CLK-/<br>EDP_TX3- <sup>[2]</sup>   | 28 | LVDS_B_CLK+/<br>EDP_TX3+ <sup>[2]</sup>   |
|  | 29 | LVDS_B_DATA3-/<br>EDP_AUX- <sup>[2]</sup> | 30 | LVDS_B_DATA3+/<br>EDP_AUX+ <sup>[2]</sup> |

**Notes:**

[1]: Panel Power VDD is 3.3V by default, 5V/12V is selectable by "LVDS/EDP VDD Select Jumper" (JC\_LVDS2, Table 3)

[2]: It supports LVDS by default and can support EDP if specified (resistor selectable).

**5) CPU\_FAN1 (CPU FAN Header 4\*1 Pin 2.54mm)**

| Graphic                                                                             | Pin | Definition | Pin | Definition           |
|-------------------------------------------------------------------------------------|-----|------------|-----|----------------------|
|  | 1   | GND        | 3   | FAN Speed Detection1 |
|                                                                                     | 2   | + 12V      | 4   | FAN Speed Control1   |

**6) JC\_LVDS1 (eDP/LVDS Backlight PWM/CCFL Select Jumper 3\*1 Pin 2.54mm)**

| Graphic                                                                             | Setting      | Function                 |
|-------------------------------------------------------------------------------------|--------------|--------------------------|
|  | 1-2(Default) | Controlled by PWM        |
|                                                                                     | 2-3          | Controlled by DC Voltage |

**7) J\_COM1 (COM1 Header 5\*2 Pin 2.00mm)**

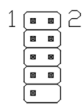
| Graphic                                                                             | Pin | Definition               | Pin | Definition |
|-------------------------------------------------------------------------------------|-----|--------------------------|-----|------------|
|  | 1   | COM1_PIN1 <sup>[1]</sup> | 2   | COM1_RXD   |
|                                                                                     | 3   | COM1_TXD                 | 4   | COM1_DTR   |
|                                                                                     | 5   | GND                      | 6   | COM1_DSR   |
|                                                                                     | 7   | COM1_RTS                 | 8   | COM1_CTS   |
|                                                                                     | 9   | COM1_PIN9 <sup>[2]</sup> |     |            |

**Notes:**

[1]: Pin1 of COM1 can be 12V/ DCD (default). (resistor selectable)

[2]: Pin9 of COM1 can be 5V/ RI (default). (resistor selectable)

## 8) J\_COM2 (COM2 Header 5\*2 Pin 2.00mm)

| Graphic                                                                           | Pin | Definition               | Pin | Definition |
|-----------------------------------------------------------------------------------|-----|--------------------------|-----|------------|
|  | 1   | COM2_PIN1 <sup>[1]</sup> | 2   | COM2_RXD   |
|                                                                                   | 3   | COM2_TXD                 | 4   | COM2_DTR   |
|                                                                                   | 5   | GND                      | 6   | COM2_DSR   |
|                                                                                   | 7   | COM2_RTS                 | 8   | COM2_CTS   |
|                                                                                   | 9   | COM2_PIN9 <sup>[2]</sup> |     |            |

### Notes:

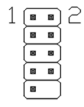
[1]: Pin1 of COM2 can be 12V/ DCD (default). (resistor selectable)

[2]: Pin9 of COM2 can be 5V/ RI (default). (resistor selectable)

## 9) JSEL1 (COM3 RS232/485 Select Jumper 3\*2 Pin 2.54 mm)

| Graphic                                                                             | Setting           | Function                                   |
|-------------------------------------------------------------------------------------|-------------------|--------------------------------------------|
|  | 1-3, 2-4(Default) | COM3_PIN1: COM3_DCD<br>COM3_PIN2: COM3_RXD |
|                                                                                     | 3-5, 4-6          | COM3_PIN1: RS485_3-<br>COM3_PIN2: RS485_3+ |

## 10) J\_COM3 (COM3 Header 5\*2 Pin 2.00mm)

| Graphic                                                                             | Pin | Definition               | Pin | Definition               |
|-------------------------------------------------------------------------------------|-----|--------------------------|-----|--------------------------|
|  | 1   | COM3_PIN1 <sup>[1]</sup> | 2   | COM3_PIN2 <sup>[1]</sup> |
|                                                                                     | 3   | COM3_TXD                 | 4   | COM3_DTR                 |
|                                                                                     | 5   | GND                      | 6   | COM3_DSR                 |
|                                                                                     | 7   | COM3_RTS                 | 8   | COM3_CTS                 |
|                                                                                     | 9   | COM3_PIN9 <sup>[2]</sup> |     |                          |

### Notes:

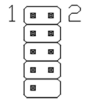
[1]: COM3\_PIN1 can be DCD/12V SEL by RES, support DCD by default, RS232/RS485 is selectable by "COM3 RS232/485 Select Jumper" (JSEL1, Table9).

[2]: Pin9 of COM3 can be 5V/ RI (default). (resistor selectable)

#### 11) JSEL2 (COM4 RS232/485 Select Jumper 3\*2 Pin 2.54 mm)

| Graphic                                                                           | Setting           | Function                                   |
|-----------------------------------------------------------------------------------|-------------------|--------------------------------------------|
|  | 1-3, 2-4(Default) | COM4_PIN1: COM4_DCD<br>COM4_PIN2: COM4_RXD |
|                                                                                   | 3-5, 4-6          | COM4_PIN1: RS485_4-<br>COM4_PIN2: RS485_4+ |

#### 12) J\_COM4 (COM4 Header 5\*2 Pin 2.00mm)

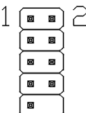
| Graphic                                                                           | Pin | Definition               | Pin | Definition               |
|-----------------------------------------------------------------------------------|-----|--------------------------|-----|--------------------------|
|  | 1   | COM4_PIN1 <sup>[1]</sup> | 2   | COM4_PIN2 <sup>[1]</sup> |
|                                                                                   | 3   | COM4_TXD                 | 4   | COM4_DTR                 |
|                                                                                   | 5   | GND                      | 6   | COM4_DSR                 |
|                                                                                   | 7   | COM4_RTS                 | 8   | COM4_CTS                 |
|                                                                                   | 9   | COM4_PIN9 <sup>[2]</sup> |     |                          |

**Notes:**

[1]: COM4\_PIN1 can be DCD/12V SEL by RES, support DCD by default, RS232/RS485 is selectable by "COM4 RS232/485 Select Jumper" (JSEL2, Table 11).

[2]: Pin9 of COM4 can be 5V/ RI (default). (resistor selectable)

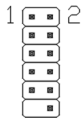
#### 13) F\_PANEL1 (Front Panel Header 5\*2 Pin 2.54mm)

| Graphic                                                                             | Pin | Definition | Pin | Definition |
|-------------------------------------------------------------------------------------|-----|------------|-----|------------|
|  | 1   | HD LED+    | 2   | Power LED+ |
|                                                                                     | 3   | HD LED-    | 4   | Power LED- |
|                                                                                     | 5   | RESET-     | 6   | POWER+     |
|                                                                                     | 7   | RESET+     | 8   | POWER-     |
|                                                                                     | 9   | N/C        |     |            |

#### 14) SYS\_FAN1 (System FAN Header 3\*1 Pin 2.54mm)

| Graphic                                                                             | Pin | Definition | Pin | Definition           |
|-------------------------------------------------------------------------------------|-----|------------|-----|----------------------|
|  | 1   | GND        | 3   | FAN Speed Detection2 |
|                                                                                     | 2   | + 12V      |     |                      |

### 15) J\_GPIO1 (GPIO Header 6\*2 Pin 2.00mm)

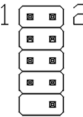
| Graphic                                                                           | Pin | Definition                                   | Pin | Definition                   |
|-----------------------------------------------------------------------------------|-----|----------------------------------------------|-----|------------------------------|
|  | 1   | SIO_GPI80<br>(0xA07 Bit0, H <sup>[1]</sup> ) | 2   | SIO_GPI81<br>(0xA07 Bit1, H) |
|                                                                                   | 3   | SIO_GPI82<br>(0xA07 Bit2, H)                 | 4   | SIO_GPI83<br>(0xA07 Bit3, H) |
|                                                                                   | 5   | GND                                          | 6   | SIO_GPO84<br>(0xA07 Bit4, H) |
|                                                                                   | 7   | SIO_GPO85<br>(0xA07 Bit5, H)                 | 8   | SIO_GPO86<br>(0xA07 Bit6, H) |
|                                                                                   | 9   | SIO_GPO87<br>(0xA07 Bit7, H)                 | 10  | + 5V <sup>[2]</sup>          |
|                                                                                   | 11  |                                              | 12  | N/C                          |

**Notes:**

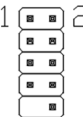
[1]: "H" or "L" means the default voltage is High or Low level (5V GPIO).

[2]: Power on this Pin can be 3.3V/ 5V (default). (resistor selectable)

### 16) F\_USB2 (Front USB2.0 Header2 5\*2 Pin 2.54mm)

| Graphic                                                                             | Pin | Definition  | Pin | Definition   |
|-------------------------------------------------------------------------------------|-----|-------------|-----|--------------|
|  | 1   | + 5V        | 2   | + 5V         |
|                                                                                     | 3   | PCH_USB2_9- | 4   | PCH_USB2_14- |
|                                                                                     | 5   | PCH_USB2_9+ | 6   | PCH_USB2_14+ |
|                                                                                     | 7   | GND         | 8   | GND          |
|                                                                                     |     |             | 10  | GND          |

### 17) F\_USB1 (Front USB2.0 Header1 5\*2 Pin 2.54mm)

| Graphic                                                                             | Pin | Definition                 | Pin | Definition                 |
|-------------------------------------------------------------------------------------|-----|----------------------------|-----|----------------------------|
|  | 1   | + 5V                       | 2   | + 5V                       |
|                                                                                     | 3   | PCH_USB2_5- <sup>[1]</sup> | 4   | PCH_USB2_6- <sup>[1]</sup> |
|                                                                                     | 5   | PCH_USB2_5+ <sup>[1]</sup> | 6   | PCH_USB2_6+ <sup>[1]</sup> |
|                                                                                     | 7   | GND                        | 8   | GND                        |
|                                                                                     |     |                            | 10  | GND                        |

**Notes:**

[1]: PCH\_USB2\_5/6 Signal of F\_USB1 colay with R\_USB3. And LAN1 colay with R\_USB3 on the same position, support F\_USB1 and LAN1 by default (R\_USB3 not support).

**18) J\_AT1 (AT or ATX Select Jumper 3\*1 Pin 2.54mm)**

| Graphic                                                                           | Setting      | Function |
|-----------------------------------------------------------------------------------|--------------|----------|
|  | 1-2(Default) | ATX Mode |
|                                                                                   | 2-3          | AT Mode  |

**19) J\_DBG1 (Port80 Debug Header 9\*1 Pin 2.00mm)**

| Graphic                                                                           | Pin | Definition | Pin | Definition  |
|-----------------------------------------------------------------------------------|-----|------------|-----|-------------|
|  | 1   | LFRAME#    | 6   | GND         |
|                                                                                   | 2   | LAD3       | 7   | PLTRST#     |
|                                                                                   | 3   | LAD2       | 8   | PCH_LCK24M1 |
|                                                                                   | 4   | LAD1       | 9   | + 3.3V      |
|                                                                                   | 5   | LAD0       |     |             |

**20) P\_SATA2 (SATA Power Header2 4\*1 Pin 2.00mm)**

| Graphic                                                                             | Pin | Definition | Pin | Definition |
|-------------------------------------------------------------------------------------|-----|------------|-----|------------|
|  | 1   | + 12V      | 3   | GND        |
|                                                                                     | 2   | GND        | 4   | + 5V       |

**21) P\_SATA1 (SATA Power Header1 4\*1 Pin 2.00mm)**

| Graphic                                                                             | Pin | Definition | Pin | Definition |
|-------------------------------------------------------------------------------------|-----|------------|-----|------------|
|  | 1   | + 12V      | 3   | GND        |
|                                                                                     | 2   | GND        | 4   | + 5V       |

**22) CLR\_CMOS1 (CMOS Clear Jumper 3\*1 Pin 2.54mm)**

| Graphic                                                                             | Setting      | Function   |
|-------------------------------------------------------------------------------------|--------------|------------|
|  | 1-2(Default) | Normal     |
|                                                                                     | 2-3          | Clear CMOS |

**23) BAT1 (CMOS Battery Header 2\*1 Pin 1.25mm)**

| Graphic                                                                             | Pin | Definition | Pin | Definition |
|-------------------------------------------------------------------------------------|-----|------------|-----|------------|
|  | 1   | GND        | 2   | + 3.3VA    |

**24) DC\_IN2 (DC 12V Power Input Header 4\*1 Pin 2.54mm)**

| Graphic                                                                           | Pin | Definition | Pin | Definition |
|-----------------------------------------------------------------------------------|-----|------------|-----|------------|
|  | 1   | + 12V      | 3   | GND        |
|                                                                                   | 2   | + 12V      | 4   | GND        |

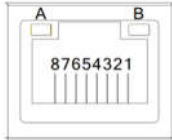
**25) J\_SPK\_R1 (Right Amplifier Header 2\*1 Pin 2.00mm)**

| Graphic                                                                           | Pin | Definition | Pin | Definition |
|-----------------------------------------------------------------------------------|-----|------------|-----|------------|
|  | 1   | SPK_OUT_R- | 2   | SPK_OUT_R+ |

**26) J\_SPK\_L1 (Left Amplifier Header 2\*1 Pin 2.00mm)**

| Graphic                                                                           | Pin | Definition | Pin | Definition |
|-----------------------------------------------------------------------------------|-----|------------|-----|------------|
|  | 1   | SPK_OUT_L- | 2   | SPK_OUT_L+ |

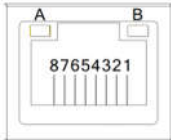
**38) LAN1\* (GBE LAN RJ45 Connector2 8Pin)**

| Graphic                                                                             | Pin | Definition            | Pin | Definition         |
|-------------------------------------------------------------------------------------|-----|-----------------------|-----|--------------------|
|  | 1   | MDI0_2+               | 5   | MDI2_2-            |
|                                                                                     | 2   | MDI0_2-               | 6   | MDI1_2-            |
|                                                                                     | 3   | MDI1_2+               | 7   | MDI3_2+            |
|                                                                                     | 4   | MDI2_2+               | 8   | MDI3_2-            |
|                                                                                     | A   | Active LED            | B   | Speed LED          |
|                                                                                     |     | ACT: Twinkling Yellow |     | 1000M: Turn Yellow |
|                                                                                     |     | Only LINK: Lights On  |     | 100M: Turn Green   |
|                                                                                     |     | Stop: Lights Off      |     | 10M: Lights Off    |

**Notes:**

[\*]: LAN1 and R\_USB3 on rear I/O share the same position. The Motherboard supports LAN1 by default.

### 39) RJ45\_1 (GBE LAN RJ45 Connector1 8Pin)

| Graphic                                                                           | Pin | Definition |                                                                   | Pin | Definition |                                                           |
|-----------------------------------------------------------------------------------|-----|------------|-------------------------------------------------------------------|-----|------------|-----------------------------------------------------------|
|  | 1   | MDI0_1+    |                                                                   | 5   | MDI2_1-    |                                                           |
|                                                                                   | 2   | MDI0_1-    |                                                                   | 6   | MDI1_1-    |                                                           |
|                                                                                   | 3   | MDI1_1+    |                                                                   | 7   | MDI3_1+    |                                                           |
|                                                                                   | 4   | MDI2_1+    |                                                                   | 8   | MDI3_1 -   |                                                           |
|                                                                                   | A   | Active LED | ACT: Twinkling Yellow<br>Only LINK: Lights On<br>Stop: Lights Off | B   | Speed LED  | 1000M: Turn Yellow<br>100M: Turn Green<br>10M: Lights Off |

## 7. BIOS setup

See “BIOS Spec for SV1a-H3124P Series” for detail information of BIOS setup.

【End】