

Seavo Motherboard User's Manual

用户手册

SV1-H8146 Series

Ver 1.0



Contents

1. Models and Attentions	2
1.1 Models.....	2
1.2 Attentions	2
2. Specification	3
3. Functional Block Diagram.....	4
4. Mechanical Drawing	5
5. Jumpers / Headers and Connectors	6
6. Definition of Jumpers /Headers and Connectors	9
1) F_AUDIO1 (Front Audio Header 5*2 Pin 2.54mm)	9
2) CPU_FAN1 (CPU FAN Header 4*1 Pin 2.54mm)	9
3) J_GPIO1 (GPIO Header 6*2 Pin 2.00mm).....	9
4) F_PANEL1 (Front Panel Header 5*2 Pin 2.54mm).....	10
5) J_COM1/2/3/4 (COM1/2/3/4 Header 5*2 Pin 2.54mm).....	10
6) SYS_FAN1 (System FAN Header 4*1 Pin 2.54mm)	11
7) F_USB1 (Front USB2.0 Header 5*2 Pin 2.54 mm).....	11
8) J_RIO1 (EXT-CARD Header 20*2 Pin 2.00mm).....	11
9) CLR_CMOS1 (CMOS Clear Jumper 3*1 Pin 2.54mm).....	12
19) ATX1 (ATX 4P CPU Power Input Connector).....	12
21) RJ45_USB1(RJ45_1) (GBE LAN RJ45 Connector1 8Pin)	12
22) RJ45_USB2(RJ45_2) (GBE LAN RJ45 Connector2 8Pin)	13
23) RJ45_3-4(RJ45_3) (GBE LAN RJ45 Connector3 8Pin)	13
28) RJ45_3-4(RJ45_4) (GBE LAN RJ45 Connector4 8Pin)	13
29) AUDIO1 (Line-Out + MIC + Line-In 3.5mm Jack)	14
7. BIOS setup	15

1. Models and Attentions

1.1 Models

This manual is applied to following models:

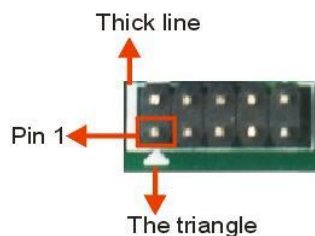
Model	Chipset	COM	LAN	USB	PCIE	MINI PCIE	HDMI	VGA	SATA 3.0	SATA 2.0
SV1-H8146	H81	6	4	10	2	mSATA	1	1	1	1

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	SV1-H8146
CPU	Support Intel® 4 th Generation Core /Pentium /Celeron Desktop CPU, LGA1150 Support MAX CPU TDP: 84W
Chipset	Intel® H81, TDP 4.1W
Display ^[1]	1 * HDMI (TYPE-A): Support max resolution up to 3840x2160@30Hz 1 * VGA (DB15/F): Support max resolution up to 1920x1200@60Hz
Memory	Support DDR3 1333/1600MHz, 2 * non-ECC U-DIMM Slot, Up to 16 GB
Storage	1 * SATA3.0 7P Connector 1 * SATA2.0 7P Connector 1 * Mini PCI-E Slot (mSATA) ^[2]
Ethernet	4 * Intel I211 GBE LAN Chip (10/100/1000 Mbps, RJ45)
Audio	Realtek ALC662 5.1 Channel HDA Codec, 1 * Front Audio Header (Line-Out + MIC) 1 * Line-Out + MIC + Line-In 3.5mm Jack
Expansion Slots	1 * PCI-E 16x Slot (PCI-E 3.0) 1 * PCI-E 16x Gold Finger ^[3] (PCIEx4 ^{[2][4]} + 1*USB2.0 + PCIEx16 (colay 16x Slot) ^[5])
COM	2 * RS232/RS422/RS485 (COM1/2, Header) 2 * RS232 (COM3/4, Header) 2 * TTL (COM5/6, EXT-CARD Header)
USB	2 * USB3.0 (Rear I/O, TYPE-A) 4 * USB2.0 (Rear I/O, TYPE-A) 2 * USB2.0 (Internal, Header) 2 * USB2.0 (Internal, EXT-CARD Header)
Other Ports	Support TPM2.0 (default not onboard), 1 * EXT-CARD Header (1xLPC, 1xSMBus, with 2xUSB2.0, 2xCOM TTL) 1 * Full-Size SIM Card Slot 1 * CPU FAN Header 1 * System FAN Header 1 * Front Panel Header 1 * GPIO Header 1 * CMOS Clear Jumper
System	Windows7/8.1/10, Linux
Temperature	Storage: -20~75°C Operating: 0~60°C
BIOS	AMI UEFI BIOS (Support Watchdog Timer)
Power Supply	ATX Standard (20P + 4P) 1 * ATX 4P CPU Power Input Connector 1 * ATX 20P Power Input Connector
Factor	ITX Standard (170mm * 180mm)

Notes:

[1]: Intel® H81 supports two independent displays.

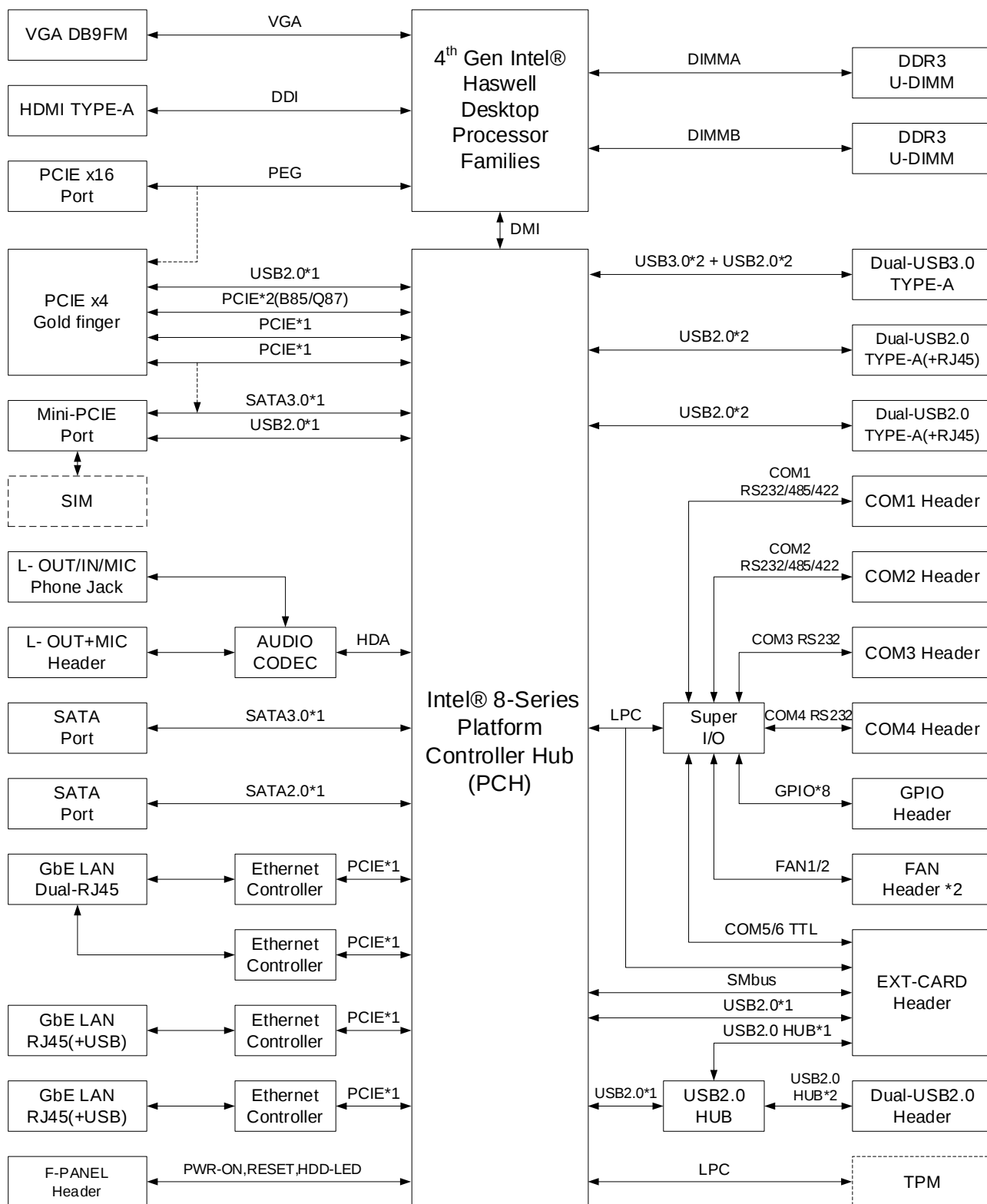
[2]: Mini PCI-E Slot supports mSATA by default. It also can support WIFI + 4G/3G. WIFI(PCIE) signal colay with 2nd PCIE(PCIEx4).

[3]: PCI-E 16x Gold Finger needs to be used with the Seavo customized daughter card.

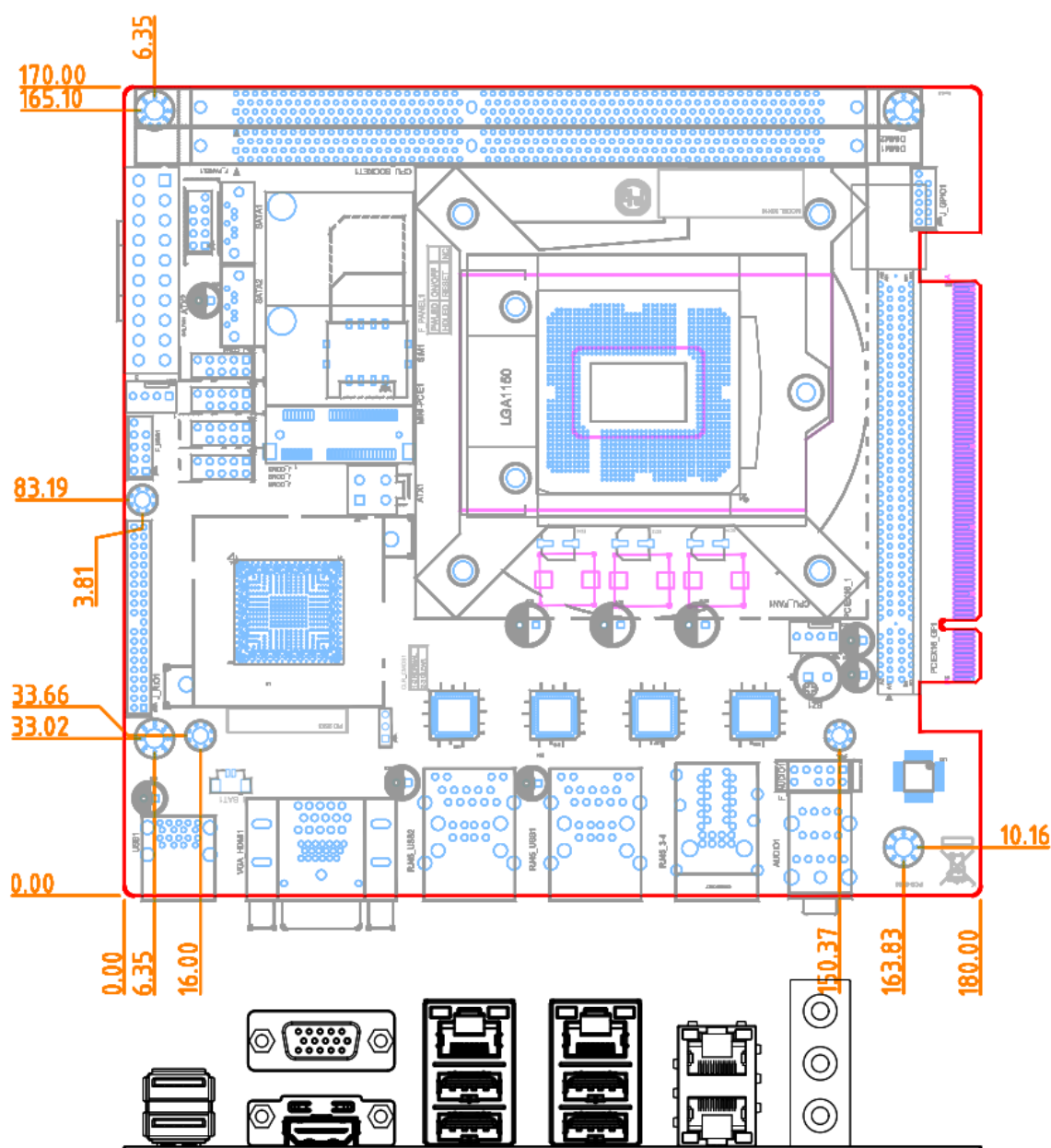
[4]: 3-4th PCIE(PCIEx4) can only be used when the PCH is changed to B85/Q87.

[5]: PCI-E 16x Slot and Gold Finger use the same signal, bom option selected, support PCI-E 16x Slot by default.

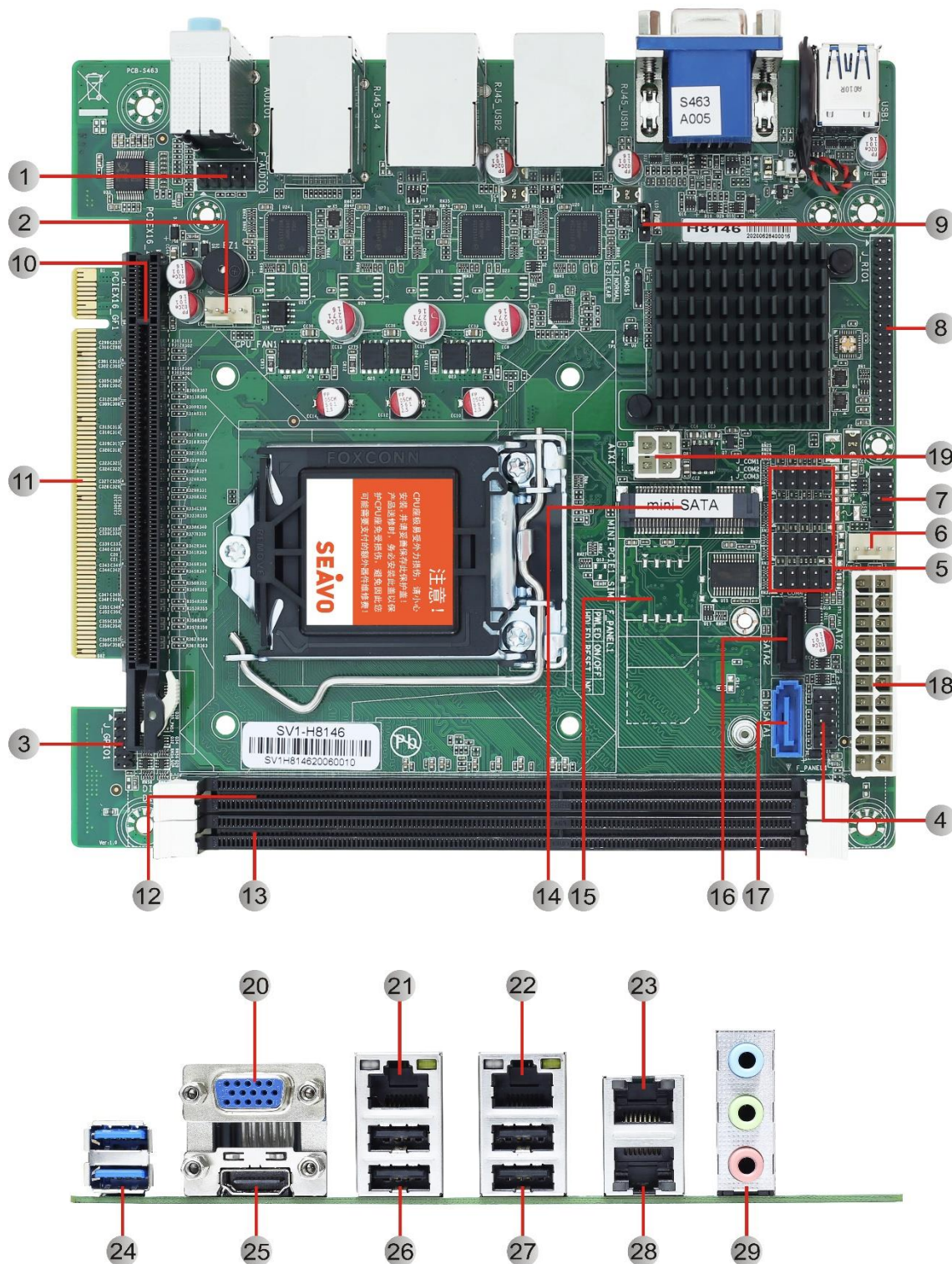
3.Functional Block Diagram

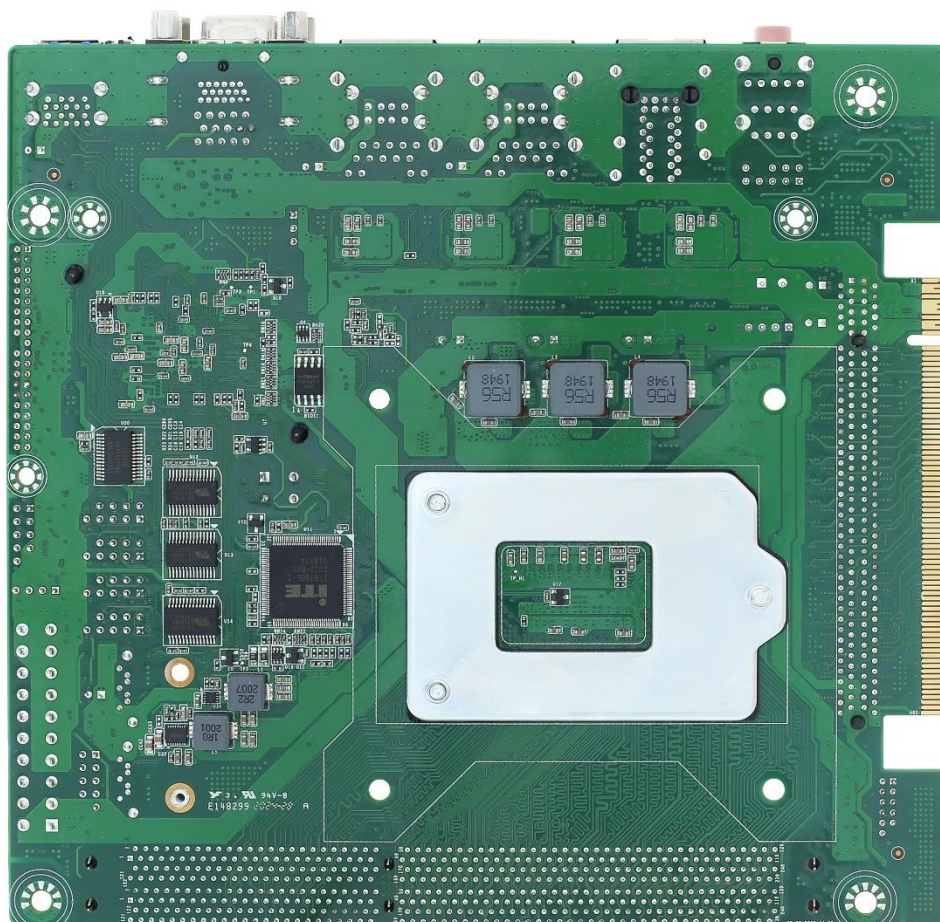


4. Mechanical Drawing



5. Jumpers / Headers and Connectors





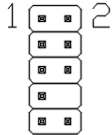
Jumpers / Headers and Connectors

1	F_AUDIO1	Front Audio Header (Line-Out + MIC)
2	CPU_FAN1	CPU FAN Header
3	J_GPIO1	GPIO Header
4	F_PANEL1	Front Panel Header
5	J_COM1/2/3/4	COM1/2/3/4 Header
6	SYS_FAN1	System FAN Header
7	F_USB1	Front USB2.0 Header
8	J_RIO1	EXT-CARD Header
9	CLR_CMOS1	CMOS Clear Jumper
10	PCIEX16_1	PCI-E 16x Slot
11	PCIEX16_GF1	PCI-E 16x Gold Finger
12	DIMM1	DDR3 CHA DIMM Slot
13	DIMM2	DDR3 CHB DIMM Slot
14	MINI-PCIE1	Mini PCI-E Slot (mSATA)
15	SIM1	Full-Size SIM Card Slot (default not onboard)
16	SATA2	SATA2.0 7P Connector
17	SATA1	SATA3.0 7P Connector

18	ATX2	ATX 20P Power Input Connector
19	ATX1	ATX 4P CPU Power Input Connector
20	VGA_HDMI1(VGA)	VGA DB15/F Connector
21	RJ45_USB1(RJ45_1)	GBE LAN RJ45 Connector1
22	RJ45_USB2(RJ45_2)	GBE LAN RJ45 Connector2
23	RJ45_3-4(RJ45_3)	GBE LAN RJ45 Connector3
24	USB1	Dual USB3.0 TYPE-A Connector
25	VGA_HDMI1(HDMI)	HDMI TYPE-A Connector
26	RJ45_USB1(USB1)	Dual USB2.0 TYPE-A Connector1
27	RJ45_USB2(USB2)	Dual USB2.0 TYPE-A Connector2
28	RJ45_3-4(RJ45_4)	GBE LAN RJ45 Connector4
29	AUDIO1	Line-Out + MIC + Line-In 3.5mm Jack

6. Definition of Jumpers /Headers and Connectors

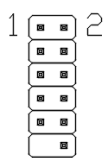
1) F_AUDIO1 (Front Audio Header 5*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	MIC_IN_L	2	GND
	3	MIC_IN_R	4	+ 3.3V
	5	AUD_OUT_R	6	MIC_IN_RET
	7	GND		
	9	AUD_OUT_L	10	AUD_OUT_RET

2) 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

3) J_GPIO1 (GPIO Header 6*2 Pin 2.00mm)

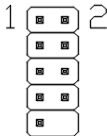
Graphic	Pin	Definition	Pin	Definition
	1	SIO_ GPI70 (0xA06 Bit0, H) [1]	2	SIO_ GPI71 (0xA06 Bit1, H)
	3	SIO_ GPI72 (0xA06 Bit2, H)	4	SIO_ GPI73 (0xA06 Bit3, H)
	5	GND	6	SIO_ GPO74 (0xA06 Bit4, H) [1]
	7	SIO_ GPO75 (0xA06 Bit5, H)	8	SIO_ GPO76 (0xA06 Bit6, H)
	9	SIO_ GPO77 (0xA06 Bit7, H)	10	+ 3.3V [2]
			12	N/C

Notes:

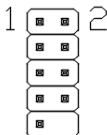
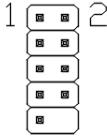
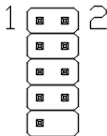
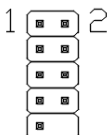
[1]: "H" or "L" means the default voltage is High or Low level.

[2]: Pin10 of GPIO can be 3.3V(default)/ 5V by selecting resistance.

4) 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		

5) J_COM1/2/3/4 (COM1/2/3/4 Header 5*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
 J_COM1 ^[2]	1	DCD#1 RS422: TX-/ RS485: DATA-	2	DSR#1 RS422/RS485: N/C
	3	RXD1 RS422: TX+/ RS485: DATA+	4	RTS#1 RS422/RS485: N/C
	5	TXD1 RS422: RX+/ RS485: N/C	6	CTS#1 RS422/RS485: N/C
	7	DTR#1 RS422: RX-/ RS485: N/C	8	COM1_PIN8 ^[1] RS422/RS485: N/C
	9	GND		
 J_COM2 ^[2]	1	DCD#2 RS422: TX-/ RS485: DATA-	2	DSR#2 RS422/RS485: N/C
	3	RXD2 RS422: TX+/ RS485: DATA+	4	RTS#2 RS422/RS485: N/C
	5	TXD2 RS422: RX+/ RS485: N/C	6	CTS#2 RS422/RS485: N/C
	7	DTR#2 RS422: RX-/ RS485: N/C	8	COM2_PIN8 ^[1] RS422/RS485: N/C
	9	GND		
 J_COM3	1	DCD#3	2	DSR#3
	3	RXD3	4	RTS#3
	5	TXD3	6	CTS#3
	7	DTR#3	8	COM3_PIN8 ^[1]
	9	GND		
	1	DCD#4	2	DSR#4
	3	RXD4	4	RTS#4
	5	TXD4	6	CTS#4
	7	DTR#4	8	COM4_PIN8 ^[1]

J_COM4	9	GND		
--------	---	-----	--	--

Notes:

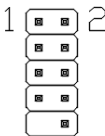
[1]: Pin8 of COM1/2/3/4 can be RI#(default)/ 5V/ 12V by selecting resistance.

[2]: J_COM1/2 support RS232/485/422 select by BIOS, default RS232.

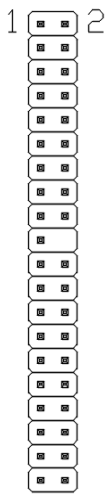
6) SYS_FAN1 (System FAN Header 4*1 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	GND	3	FAN Speed Detection2
	2	+ 12V	4	FAN Speed Control2

7) F_USB1 (Front USB2.0 Header 5*2 Pin 2.54 mm)

Graphic	Pin	Definition	Pin	Definition
	1	+ 5V	2	+ 5V
	3	HUB_USB2_1-	4	HUB_USB2_2-
	5	HUB_USB2_1+	6	HUB_USB2_2+
	7	GND	8	GND
			10	N/C

8) J_RIO1 (EXT-CARD Header 20*2 Pin 2.00mm)

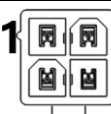
Graphic	Pin	Definition	Pin	Definition
	1	RXD5	2	RXD6
	3	TXD5	4	TXD6
	5	RTS#5	6	RTS#6
	7	DTR#5	8	DTR#6
	9	DSR#5	10	DSR#6
	11	CTS#5	12	CTS#6
	13	GND	14	GND
	15	PCH_USB2_10+	16	SMB_SCL
	17	PCH_USB2_10-	18	SMB_SDA
	19	HUB_USB2_3+		
	21	HUB_USB2_3-	22	LFRAME#
	23	GND	24	LAD0
	25	GND	26	LAD1
	27	GND	28	LAD2

	29	GND	30	LAD3
	31	+ 5V	32	GND
	33	+ 5V	34	BUF_RST#
	35	+ 5V	36	CLK33M_SIO2
	37	+ 3.3V	38	+ 3.3V
	39	+ 5VA	40	SERIRQ

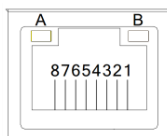
9) CLR_CMOS1 (CMOS Clear Jumper 3*1 Pin 2.54mm)

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

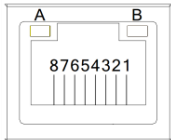
19) ATX1 (ATX 4P CPU Power Input Connector)

Graphic	Pin	Definition	Pin	Definition
	1	GND	2	GND
	3	+12V_CPU	4	+12V_CPU

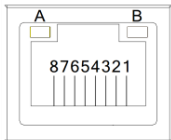
21) RJ45_USB1(RJ45_1) (GBE LAN RJ45 Connector1 8Pin)

Graphic	Pin	Definition	Pin	Definition
	1	MDI2_0+	5	MDI2_2+
	2	MDI2_0-	6	MDI2_2-
	3	MDI2_1+	7	MDI2_3+
	4	MDI2_1-	8	MDI2_3-
	A	Speed LED	B	Active LED
		1000M: Turn Orange		ACT: Twinkling Yellow
		100M: Turn Green		Stop: Lights Off
		10M: Lights Off		

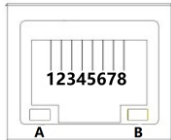
22) RJ45_USB2(RJ45_2) (GBE LAN RJ45 Connector2 8Pin)

Graphic	Pin	Definition		Pin	Definition	
	1	MDI1_0+		5	MDI1_2+	
	2	MDI1_0-		6	MDI1_2-	
	3	MDI1_1+		7	MDI1_3+	
	4	MDI1_1-		8	MDI1_3-	
	A	Speed LED	1000M: Turn Orange 100M: Turn Green 10M: Lights Off	B	Active LED	ACT: Twinkling Yellow Stop: Lights Off

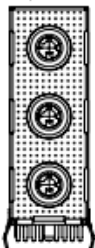
23) RJ45_3-4(RJ45_3) (GBE LAN RJ45 Connector3 8Pin)

Graphic	Pin	Definition		Pin	Definition	
	1	MDI3_0+		5	MDI3_2+	
	2	MDI3_0-		6	MDI3_2-	
	3	MDI3_1+		7	MDI3_3+	
	4	MDI3_1-		8	MDI3_3-	
	A	Speed LED	1000M: Turn Orange 100M: Turn Green 10M: Lights Off	B	Active LED	ACT: Twinkling Yellow Stop: Lights Off

28) RJ45_3-4(RJ45_4) (GBE LAN RJ45 Connector4 8Pin)

Graphic	Pin	Definition		Pin	Definition	
	1	MDI4_0+		5	MDI4_2+	
	2	MDI4_0-		6	MDI4_2-	
	3	MDI4_1+		7	MDI4_3+	
	4	MDI4_1-		8	MDI4_3-	
	A	Speed LED	1000M: Turn Orange 100M: Turn Green 10M: Lights Off	B	Active LED	ACT: Twinkling Yellow Stop: Lights Off

29) AUDIO1 (Line-Out + MIC + Line-In 3.5mm Jack)

Graphic	Setting	Function
	Blue	Line-In
	Green	Line-Out
	Pink	MIC-In

7. BIOS setup

See “BIOS Spec for SV1-H8146 Series” for detail information of BIOS setup.

【End】