

Seavo Motherboard User's Manual

用户手册

SV1-H3126C 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.....	5
4. Mechanical Drawing	6
5. Jumpers / Headers and Connectors	7
5.1 Chip Function	7
5.2 PHOTO&Definition	9
6. Definition of Jumpers /Headers and Connectors	12
1) CPU_FAN1 (CPU FAN Header 4*1 Pin 2.54mm).....	12
2) J_GPIO1 (GPIO Header 6*2 Pin 2.00mm).....	12
3) SYS_FAN1 (System FAN Header 3*1 Pin 2.54mm).....	12
4) F_PANEL1 (Front Panel Header 5*2 Pin 2.54mm).....	12
5) J_AT1 (AT or ATX Select Jumper 3*1 Pin 2.54mm).....	13
6) JC_COM34_1 (COM3/4 Pin1 Select Jumper 3*2 Pin 2.54mm)	13
7) J_DBG1 (Port80 Debug Header 9*1 Pin 2.00mm)	13
8) J_SMB1 (SMBUS Header 4*1 Pin 2.00mm).....	13
9) J1 (USB Power Ctrl MCU F/W Header 3*1 Pin 2.54mm)	13
10) CLR_CMOS1 (CMOS Clear Jumper 3*1 Pin 2.54mm).....	14
11) J_COM3-6 (COM3/4/5/6 Header 20*2 Pin 2.00 mm)	14
12) SV-IO1 (Seavo IO Header 20*2 Pin 2.00 mm).....	15
13) F_AUDIO1 (Front Audio Header (Line-Out + MIC) 5*2 Pin 2.54mm).....	15
14) BAT1 (CMOS Battery Header 2*1 Pin 1.25mm)	16
21) ATX1 (ATX 4P CPU Power Input Connector 4 Pin)	16
27) RJ45_USB1(RJ45_1) (LAN RJ45 Connector 8Pin).....	16
28) RJ45_USB2(RJ45_2) (LAN RJ45 Connector 8Pin).....	16
30) COM1-2 (Dual COM1/2 DB9/M Connector).....	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	HDMI	VGA	Mini-PCIe	Mini-PCIe	SATA 3.0
SV1-H3126C	H310	6	2	10	x16	1	1	WIFI 4G/3G	mSATA	2

With daughterboard:

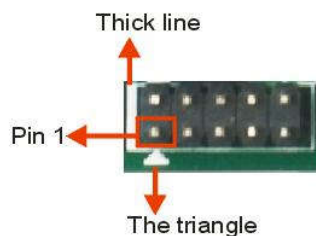
Model	COM	USB	WIFI+BT
SV1-H3126C + SV-M5-CU	10*DB9M + 2*Header	14*TYPE-A + 3*Header	1
SV1-H3126C + EXCU	10*DB9M + 2*Header	14*TYPE-A + 4*Header	0

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-H3126C
CPU	Support Intel® 8-9th Generation Core™ / Pentium® / Celeron® Desktop Processors, LGA1151 Support MAX CPU TDP: Hexa-Core 65W
Chipset ^[1]	Intel® H310, TDP 6W
Display ^[2]	1 * VGA (DB15/F): max resolution up to 1920*1200@60Hz 1 * HDMI 1.4b (Upright TYPE-A): max resolution up to 3840*2160@24Hz
Memory ^[3]	Support DDR4 2400/2666 MHz, 2 * non-ECC U-DIMM Slot, Up to 32GB
Storage	Support RAID 0/1/5/10 only when chipset is customized into Intel® Q370, 2 * SATA3.0 7P Connector 1 * Mini PCI-E Slot (mSATA)
Ethernet	2 * Realtek 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 3.5mm Jack 1 * MIC 3.5mm Jack
Intel® KPM Utility	Support Intel® Kiosk Peripheral Management Utility Support GUI Tool, AMT agent, USB Device Management, USB SW/HW Re-set 1 * MCU STC8F2K32S2 onboard ^[4] 1 * USB Power Ctrl MCU F/W Header
Expansion Slots	1 * PCI-E 16x Slot (PCIe 3.0) 1 * Mini PCI-E Slot (WIFI+4G/3G, with 1 * Full-Size SIM Card Slot) 1 * Seavo IO Header ^[5] (2*USB2.0+1*LPC+1*USB Power Ctrl+1*Debug)
COM	2 * RS232 (COM1/2, Full lanes, DB9/M) 2 * RS232 (COM3/4, Full lanes, Header, PIN1 DCD/5V SEL by Jumper, DCD default, PIN9 RI/12V SEL by res, RI default) 2 * RS232 (COM5/6, Full lanes, Header)
USB	4 * USB3.0 (TYPE-A, Rear IO) 6 * USB2.0 (TYPE-A, Rear IO)
Other Ports	1 * PS/2 Connector (Keyboard & Mouse) 8 * GPIO 1 * Port80 Debug Header 1 * SMBUS Header 1 * System FAN Header 1 * CPU FAN Header 1 * Front Panel Header (HDD LED+PWR LED+PWR-ON+RESET) 1 * CMOS Battery Header 1 * CMOS Clear Jumper 1 * AT or ATX Select Jumper
System	Windows 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 * 170mm)

Notes:

[1]: Chipset can be customized into Intel® Q370.

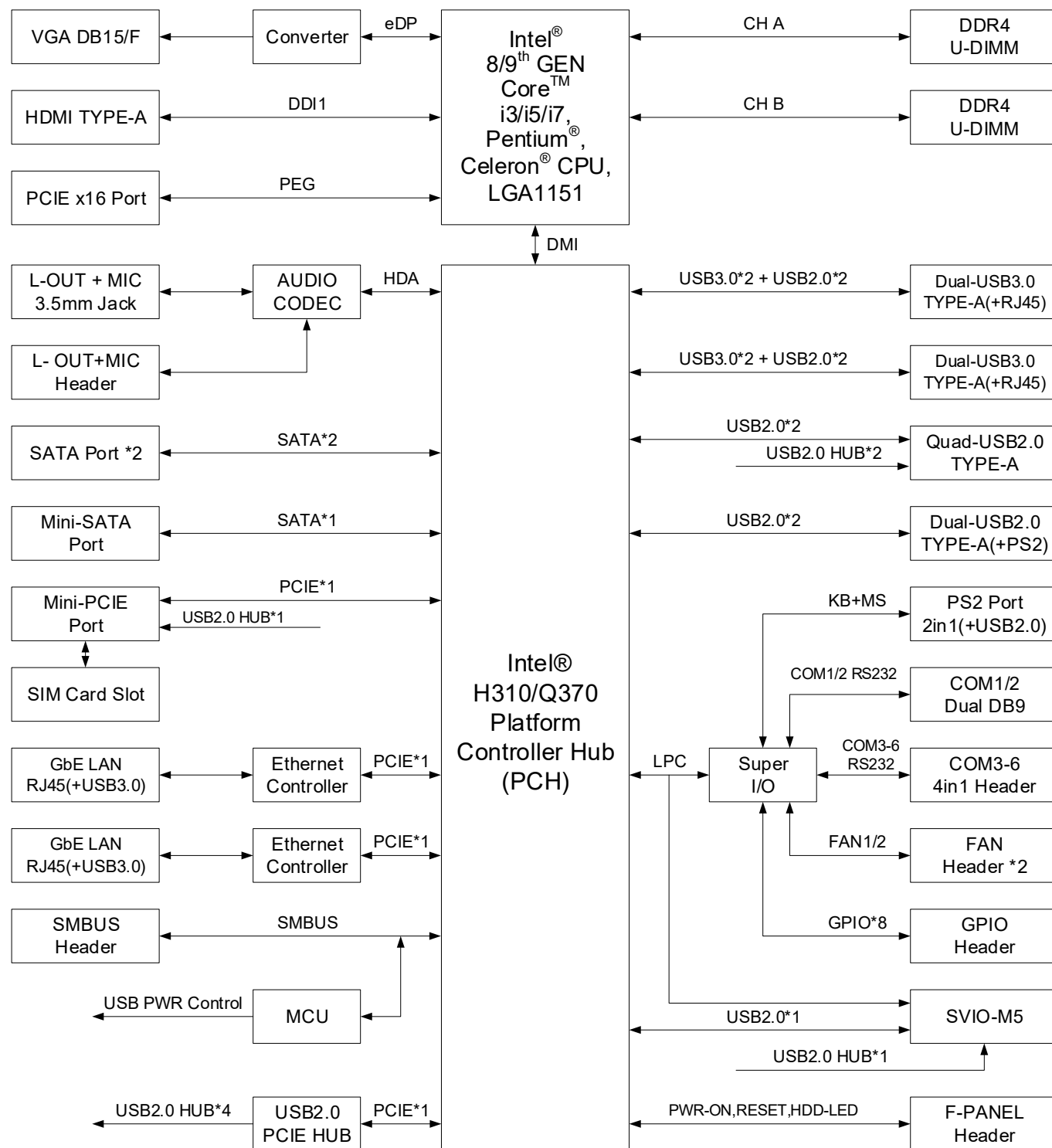
[2]: Up to two independent displays can be activated at the same time.

[3]: Supported memory frequency is determined by the CPU, supports up to 2666MHz

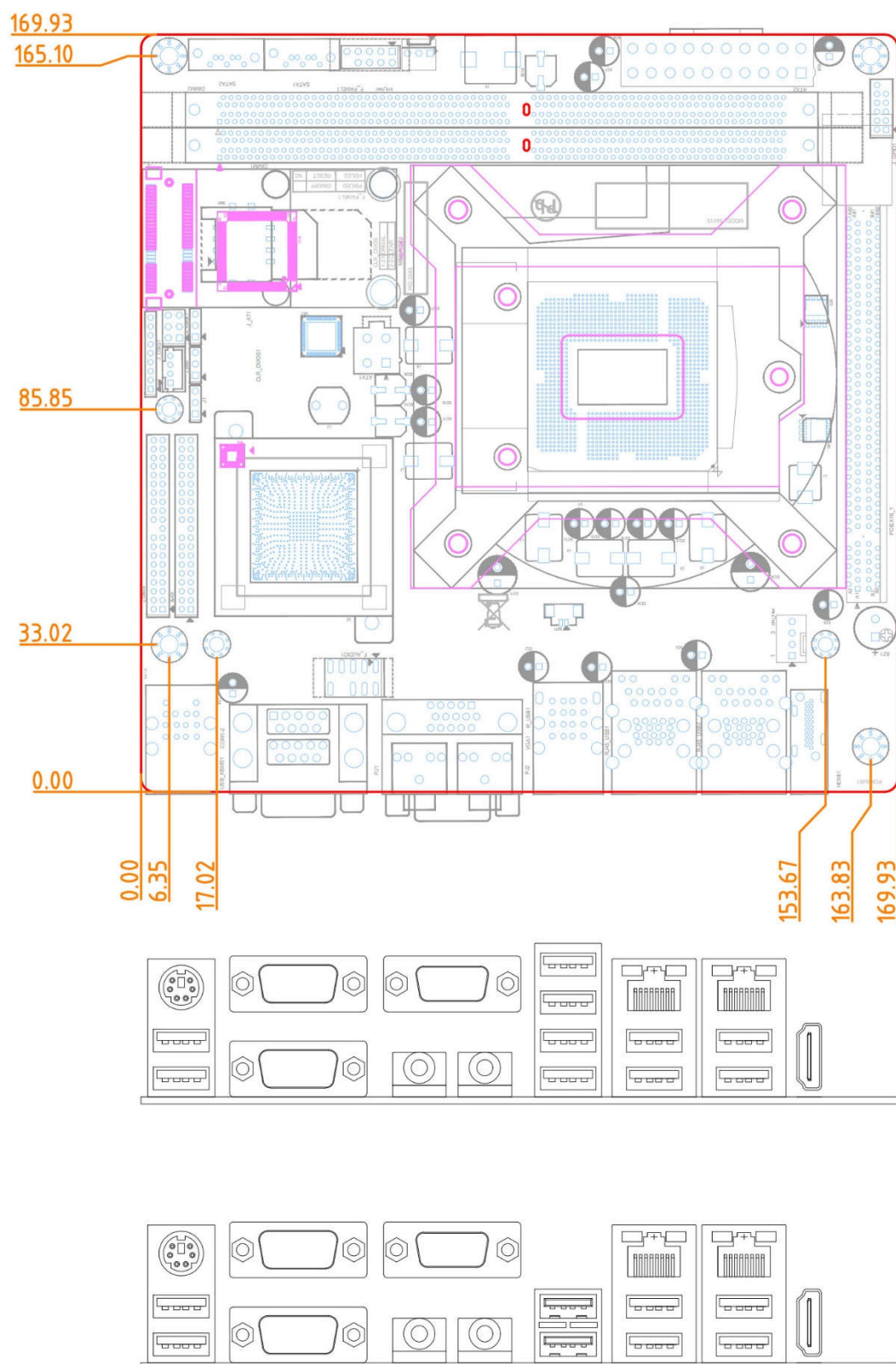
[4]: When the USB device cannot be detected, the MCU can automatically reset the USB power, thereby improving the recognition compatibility of the USB device. Seavo can provide customized SDK development kit.

[5]: When used in combination with the SV-M5-CU daughter card, it can support 17*USB2.0 (14*TYPE-A + 3*Header), 12*COM (10*DB9M + 2*Header), and 1*WIFI+BT Module. And when used in combination with the EXCU daughter card, it can support 18*USB2.0 (14*TYPE-A + 4*Header), and 12*COM (10*DB9M + 2*Header).

3.Functional Block Diagram

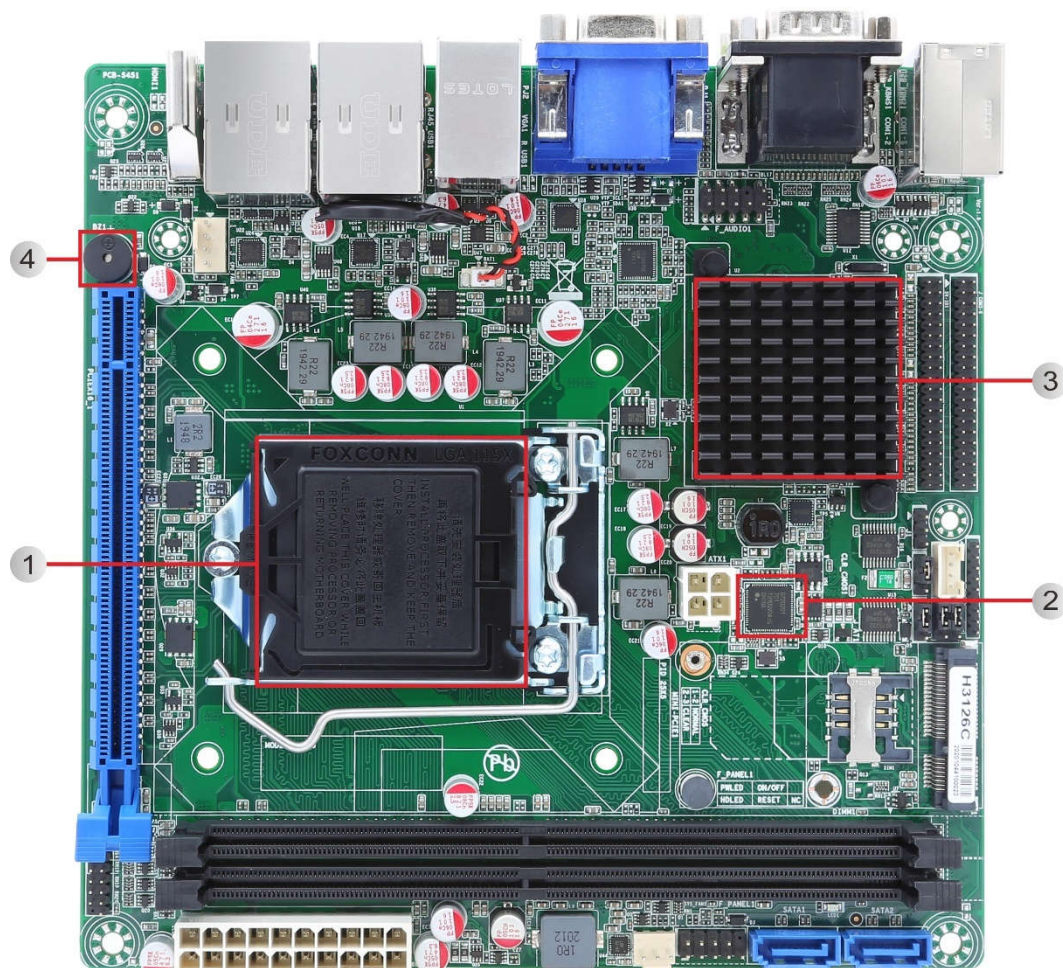


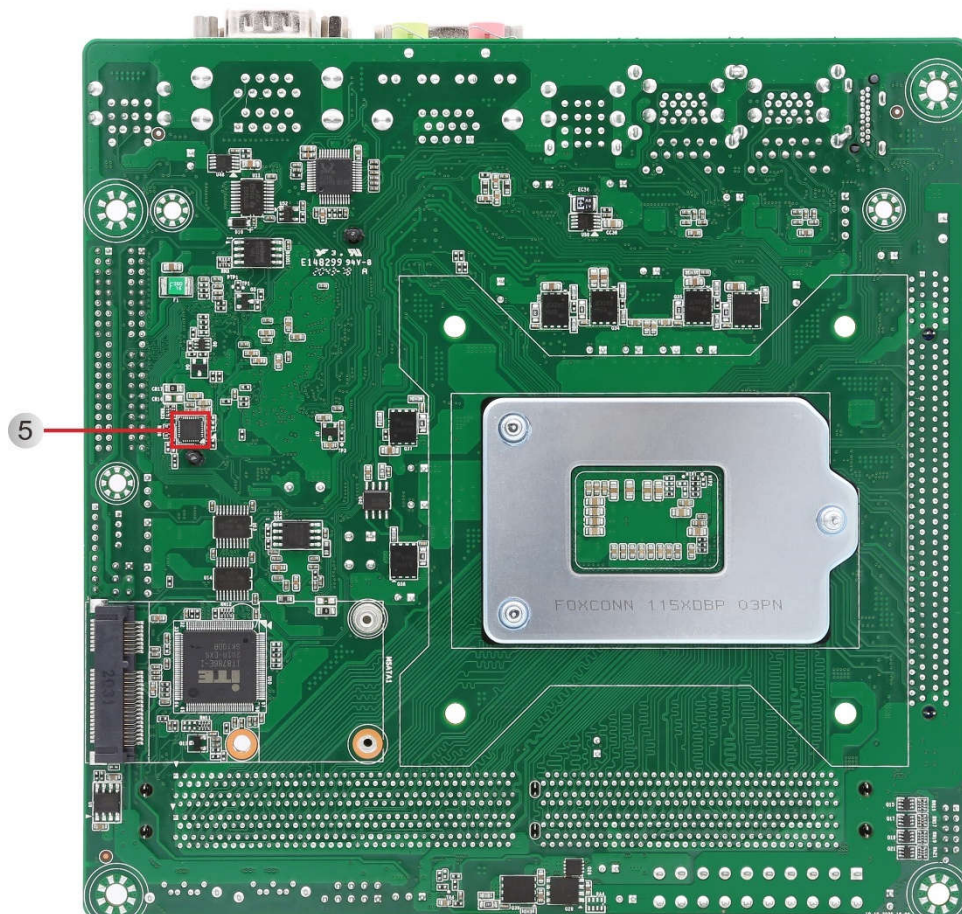
4. Mechanical Drawing



5. Jumpers / Headers and Connectors

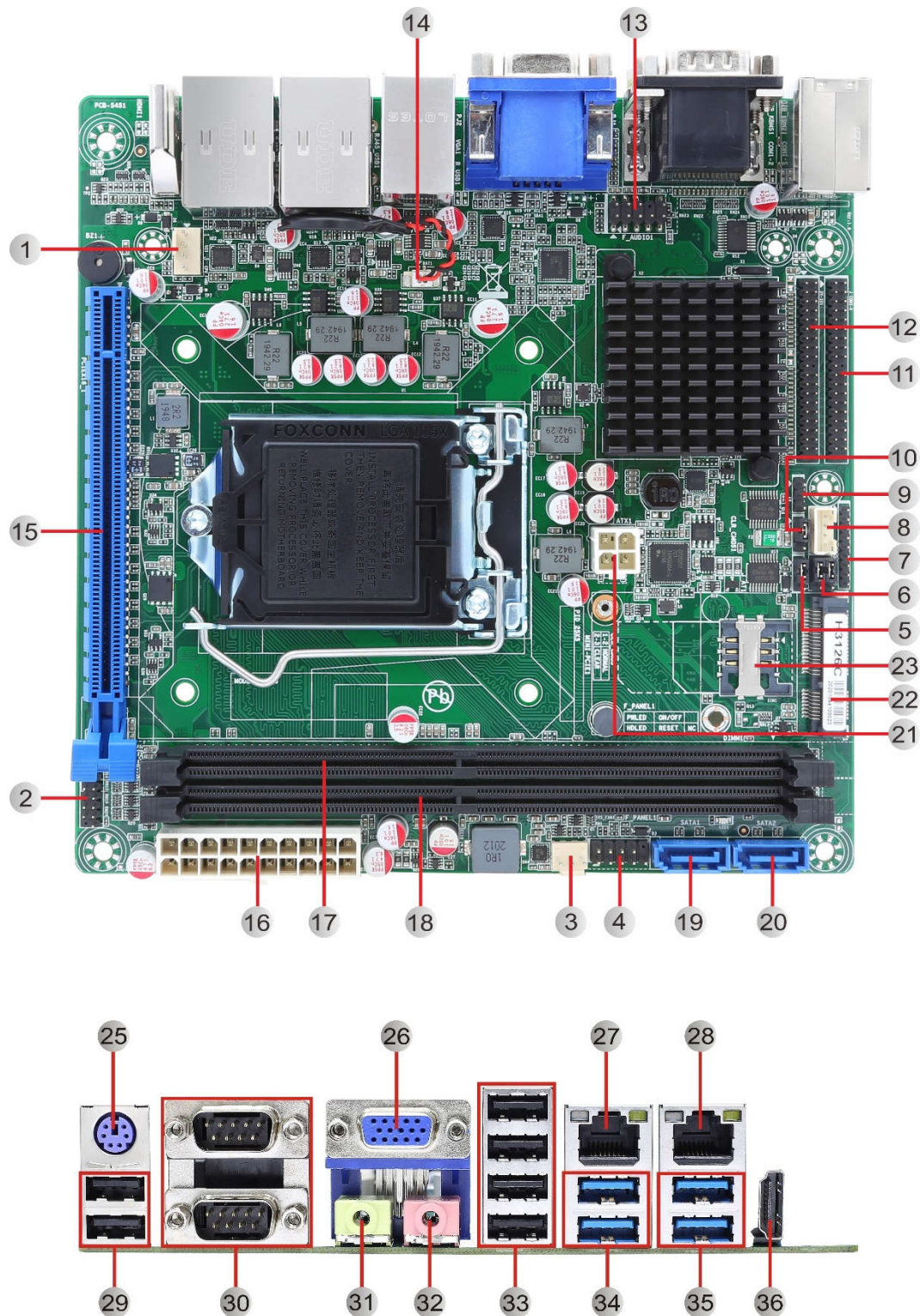
5.1 Chip Function

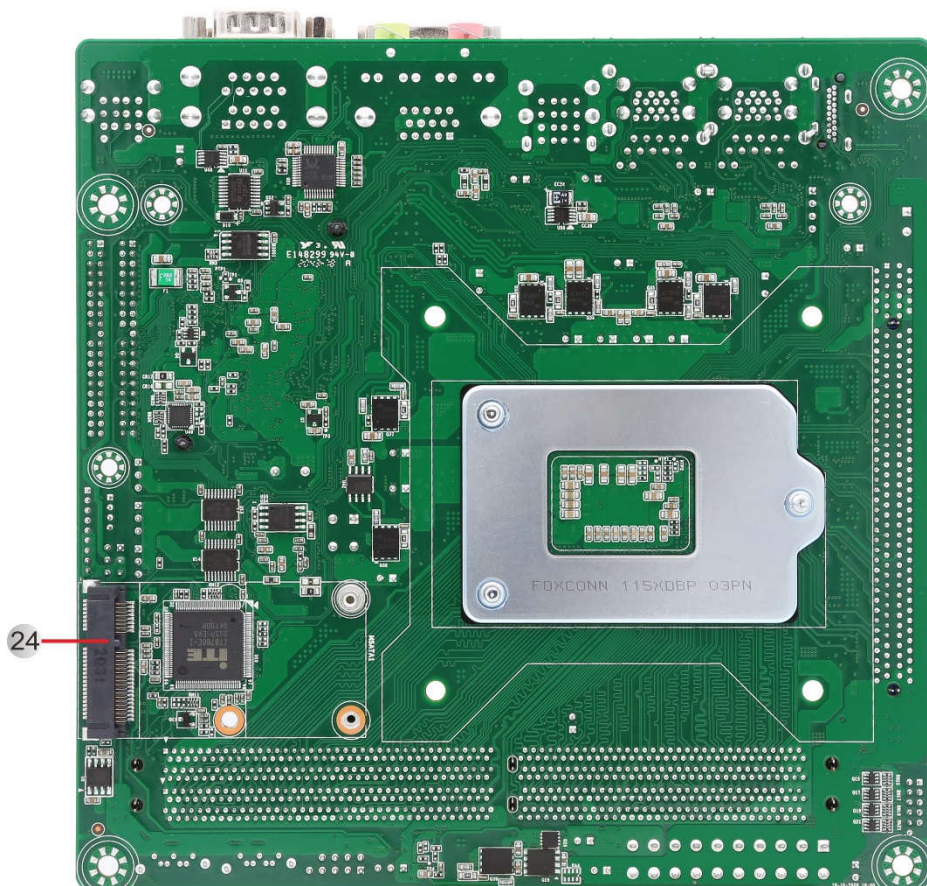




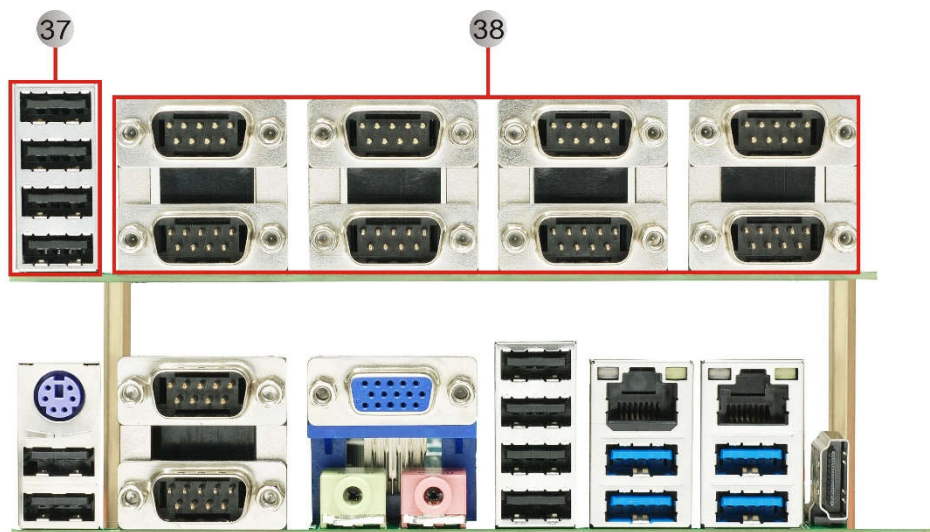
Chip Function		
1	U1	Intel Coffee Lake-S Processor, LGA-1151
2	U25	USB Hub Chip
3	U2	Intel 300 Series Chipset (H310 or Q370)
4	BZ1	Buzzer
5	U49	USB Power Control Chip (MCU) Function Notes: When the USB device cannot be detected, the MCU can automatically reset the USB power, thereby improving the recognition compatibility of the USB device.

5.2 PHOTO&Definition





With Daughter Board SV-M5-CU or EXCU:



Jumpers / Headers and Connectors

1	CPU_FAN1	CPU FAN Header
2	J_GPIO1	GPIO Header
3	SYS_FAN1	System FAN Header
4	F_PANEL1	Front Panel Header
5	J_AT1	AT or ATX Select Jumper

6	JC_COM34_1	COM3/4 Pin1 Select Jumper
7	J_DBG1	Port80 Debug Header
8	J_SMB1	SMBUS Header
9	J1	USB Power Ctrl MCU F/W Header
10	CLR_CMOS1	CMOS Clear Jumper
11	J_COM3-6	COM3/4/5/6 Header
12	SV-IO1	Seavo IO Header (2*USB2.0+1*LPC+1*USB Power Ctrl+1*Debug)
13	F_AUDIO1	Front Audio Header (Line-Out + MIC)
14	BAT1	CMOS Battery Header
15	PCIEX16_1	PCI-E 16x Slot
16	ATX2	ATX 20P Power Input Connector
17	DIMM1	DDR4 CHA DIMM Slot
18	DIMM2	DDR4 CHB DIMM Slot
19	SATA1	SATA3.0 7P Connector1
20	SATA2	SATA3.0 7P Connector2
21	ATX1	ATX 4P CPU Power Input Connector
22	MINI-PCIE1	Mini PCI-E Slot (WIFI+4G/3G)
23	SIM1	Full-Size SIM Card Slot
24	MSATA1	Mini PCI-E Slot (mSATA)
25	USB_KBMS1(KBMS1)	PS/2 Connector (Keyboard & Mouse)
26	VGA1	VGA DB15/F Connector
27	RJ45_USB1(RJ45_1)	LAN1 RJ45 Connector
28	RJ45_USB2(RJ45_2)	LAN2 RJ45 Connector
29	USB_KBMS1(USB)	Dual USB2.0 TYPE-A Connector
30	COM1-2	Dual COM1/2 DB9/M Connector
31	PJ1	Line-Out 3.5mm Jack
32	PJ2	MIC 3.5mm Jack
33	R_USB1	Quad USB2.0 TYPE-A Connector
34	RJ45_USB1(USB1)	Dual USB3.0 TYPE-A Connector1
35	RJ45_USB2(USB2)	Dual USB3.0 TYPE-A Connector2
36	HDMI1	HDMI Upright TYPE-A Connector

With Daughter Board SV-M5-CU or EXCU:

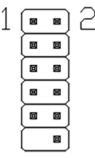
Jumpers / Headers and Connectors		
37	R_USB1	Quad USB2.0 TYPE-A Connector
38	COM3-10	COM DB9/M Connectors

6. Definition of Jumpers /Headers and Connectors

1) 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

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

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

Notes:

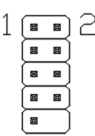
[1]: "H" or "L" means the default voltage is High or Low level. (5V GPIO. Power of this Pin depends on Pin10)

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

3) SYS_FAN1 (System FAN Header 3*1 Pin 2.54mm)

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

4) F_PANEL1 (Front Panel Header 5*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	HDD 3.3V LED+	2	POWER 3.3V LED+
	3	HDD 3.3V LED-	4	POWER 3.3V LED-
	5	RESET-	6	POWER+
	7	RESET+	8	POWER-
	9	N/C		

5) J_AT1 (AT or ATX Select Jumper 3*1 Pin 2.54mm)

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

6) JC_COM34_1 (COM3/4 Pin1 Select Jumper 3*2 Pin 2.54mm)

Graphic	Setting	Function
	1-3, 2-4(Default)	COM3_PIN1: DCD COM4_PIN1: DCD
	3-5, 4-6	COM3_PIN1: + 5V COM4_PIN1: + 5V

7) J_DBG1 (Port80 Debug Header 9*1 Pin 2.00mm)

Graphic	Pin	Definition	Pin	Definition
	1	LFRAME#	6	GND
	2	LPC_AD3	7	PLTRST#
	3	LPC_AD2	8	PCH_LCK1_24M
	4	LPC_AD1	9	+ 3.3V
	5	LPC_AD0		

8) J_SMB1 (SMBUS Header 4*1 Pin 2.00mm)

Graphic	Pin	Definition	Pin	Definition
	1	+ 3.3V	3	SMB_SCL
	2	SMB_SDA	4	GND

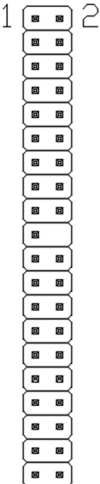
9) J1 (USB Power Ctrl MCU F/W Header 3*1 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	GP3.0_RXD	3	GND
	2	GP3.1_TXD		

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

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

11) J_COM3-6 (COM3/4/5/6 Header 20*2 Pin 2.00 mm)

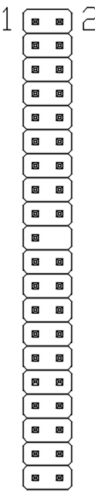
Graphic	Pin	Definition	Pin	Definition
	1	COM3_PIN1 ^[1]	2	COM3_RXD
	3	COM3_TXD	4	COM3_DTR
	5	GND	6	COM3_DSR
	7	COM3_RTS	8	COM3_CTS
	9	COM3_PIN9 ^[2]	10	GND
	11	PIN1_COM4 ^[1]	12	COM4_RXD
	13	COM4_TXD	14	COM4_DTR
	15	GND	16	COM4_DSR
	17	COM4_RTS	18	COM4_CTS
	19	PIN9_COM4 ^[2]		
	21	COM5_DCD	22	COM5_RXD
	23	COM5_TXD	24	COM5_DTR
	25	GND	26	COM5_DSR
	27	COM5_RTS	28	COM5_CTS
	29	COM5_RI	30	GND
	31	COM6_DCD	32	COM6_RXD
	33	COM6_TXD	34	COM6_DTR
	35	GND	36	COM6_DSR
	37	COM6_RTS	38	COM6_CTS
	39	COM6_RI	40	GND

Notes:

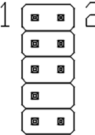
[1]: PIN1 of COM3/4 can be DCD (default) /5V selectable by "COM3/4 Pin1 Select Jumper" (JC_COM34_1, Location 6).

[2]: Pin9 of COM3/4 can be RI (default)/ 12V. (resistor selectable)

12) SV-IO1 (Seavo IO Header 20*2 Pin 2.00 mm)

Graphic	Pin	Definition	Pin	Definition
	1	+ 5V	2	+ 5V
	3	+ 5V	4	+ 5V
	5	+ 5V	6	+ 5V
	7	+ 5V	8	GND
	9	+ 3.3V	10	GND
	11	+ 3.3V	12	GND
	13	+ 3.3V	14	USB Power Switch EN Ctrl
	15	+ 3.3VA	16	GND
	17	+ 3.3VA	18	PCH_LCK1_24M
	19	PLTRST#		
	21	LPC_AD0	22	LPC_AD1
	23	LPC_AD2	24	LPC_AD3
	25	LFRAME#	26	PCH_SERIRQ
	27	GND	28	GND
	29	PCH_USB2_9+	30	PCH_USB2_9-
	31	GND	32	GND
	33	HUB_USB2_3+	34	HUB_USB2_3-
	35	GND	36	GND
	37	GND	38	PANSW#
	39	- 12V	40	+ 12V_COM

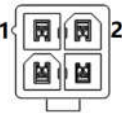
13) F_AUDIO1 (Front Audio Header (Line-Out + MIC) 5*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	MIC_IN2_L	2	GND
	3	MIC_IN2_R	4	+ 3.3V
	5	LINE_OUT2_R	6	MIC2_RET
	7	GND		
	9	LINE_OUT2_L	10	LINE_OUT2_RET

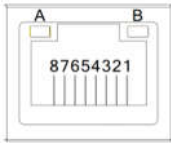
14) BAT1 (CMOS Battery Header 2*1 Pin 1.25mm)

Graphic	Pin	Definition	Pin	Definition
	1	VBAT	2	GND

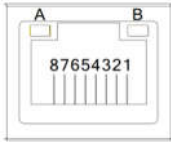
21) ATX1 (ATX 4P CPU Power Input Connector 4 Pin)

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

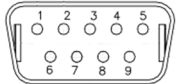
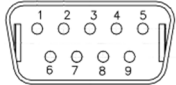
27) RJ45_USB1(RJ45_1) (LAN RJ45 Connector 8Pin)

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

28) RJ45_USB2(RJ45_2) (LAN RJ45 Connector 8Pin)

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

30) COM1-2 (Dual COM1/2 DB9/M Connector)

Graphic	Pin	Definition	Pin	Definition
 COM1	1	COM1_DCD	6	COM1_DSR
	2	COM1_RXD	7	COM1_RTS
	3	COM1_TXD	8	COM1_CTS
	4	COM1_DTR	9	COM1_RI
	5	GND		
 COM2	1	COM2_DCD	6	COM2_DSR
	2	COM2_RXD	7	COM2_RTS
	3	COM2_TXD	8	COM2_CTS
	4	COM2_DTR	9	COM2_RI
	5	GND		

7. BIOS setup

See “BIOS Spec for SV1-H3126C Series” for detail information of BIOS setup.

【End】