

Seavo Motherboard User's Manual

用户手册

SVX-H1156 Series

Ver 0.0



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1.Models and Attentions

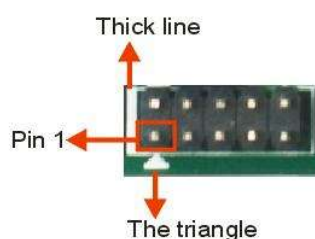
1.1 Models

This manual is applied to following models:

Model	Chipset	COM	LAN	USB	PCIE	Mini-PCIE	HDMI	VGA	SATA3.0
SVX-H1156	H110	6	5	10	2	mSATA+ 4G/3G	1	1	2
SVX-Q1756	Q170	6	5	10	2	mSATA+ 4G/3G	1	1	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	SVX-Q1756	SVX-H1156
CPU	Support Intel® 6/7/8/9th Generation Core / Pentium/ Celeron Desktop CPU, LGA1151 Support MAX CPU TDP: Hexa-Core 95W	
Chipset	Intel® Q170, TDP 6W	Intel® H110, TDP 6W
Display	1 * VGA(DB15/F): max resolution up to 1920*1200@60Hz 1 * HDMI 1.4b(TYPE-A): max resolution up to 4096*2160@24Hz	
Memory	Support DDR4-2133/2400MHz [1], non-ECC U-DIMM Slot, Up to 32GB	
Storage	Support RAID 0/1/5/10, 2 * SATA3.0 7P Connector	2 * SATA3.0 7P Connector
Ethernet	1 * I219 GBE LAN Chip (10/100/1000 Mbps, RJ45) 4 * I211 GBE LAN Chip (10/100/1000 Mbps, RJ45) + 4 * POE Connector 1 * POE Power Connector	
Audio	Realtek ALC662 5.1 Channel HDA Codec, 1 * Front Audio Header (Line-Out + MIC)	
Expansion Slots	1 * PCI-E 16x Slot [2] 1 * Mini PCI-E Slot (mSATA/WIFI+4G/3G, default mSATA+4G/3G [3]), with 1 * Full-Size SIM Card Slot	
	1 * PCI-E 16x Golden Finger [4] (1*PCIEx16 [2] + 2*PCIEx1 [3] + 1*PCIEx4 + 1*USB2.0)	1 * PCI-E 16x Golden Finger [4] (1*PCIEx16 [2] + 2*PCIEx1 [3] + 1*USB2.0)
COM	2 * RS232/RS422/RS485 (COM1/2, DB9/M) 2 * RS232 (COM3/4, Header) 2 * TTL (COM5/6, EXT-CARD Header)	
USB	6 * USB3.0 (TYPE-A) 2 * USB2.0 (Header)	4 * USB3.0 (TYPE-A) 2 * USB2.0 (TYPE-A) 2 * USB2.0 (Header)
Other Ports	1 * EXT-CARD Header (1xLPC, 1xSMbus, 2xUSB2.0, 2xCOM TTL) 8 * GPIO 1 * Front Panel Header 1 * Remote Power Switch 2P 3.81mm Terminal Block 1 * CPU FAN 1 * System FAN 1 * CMOS Clear Jumper 1 * AT or ATX Select Jumper	
TPM	SLB9665, TPM2.0 (not onboard by default)	
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 (24P + 4P) 1 * ATX 24P Power Input Connector 1 * ATX 4P CPU Power Input Connector	
Factor	208.1mm * 180mm	

Notes:

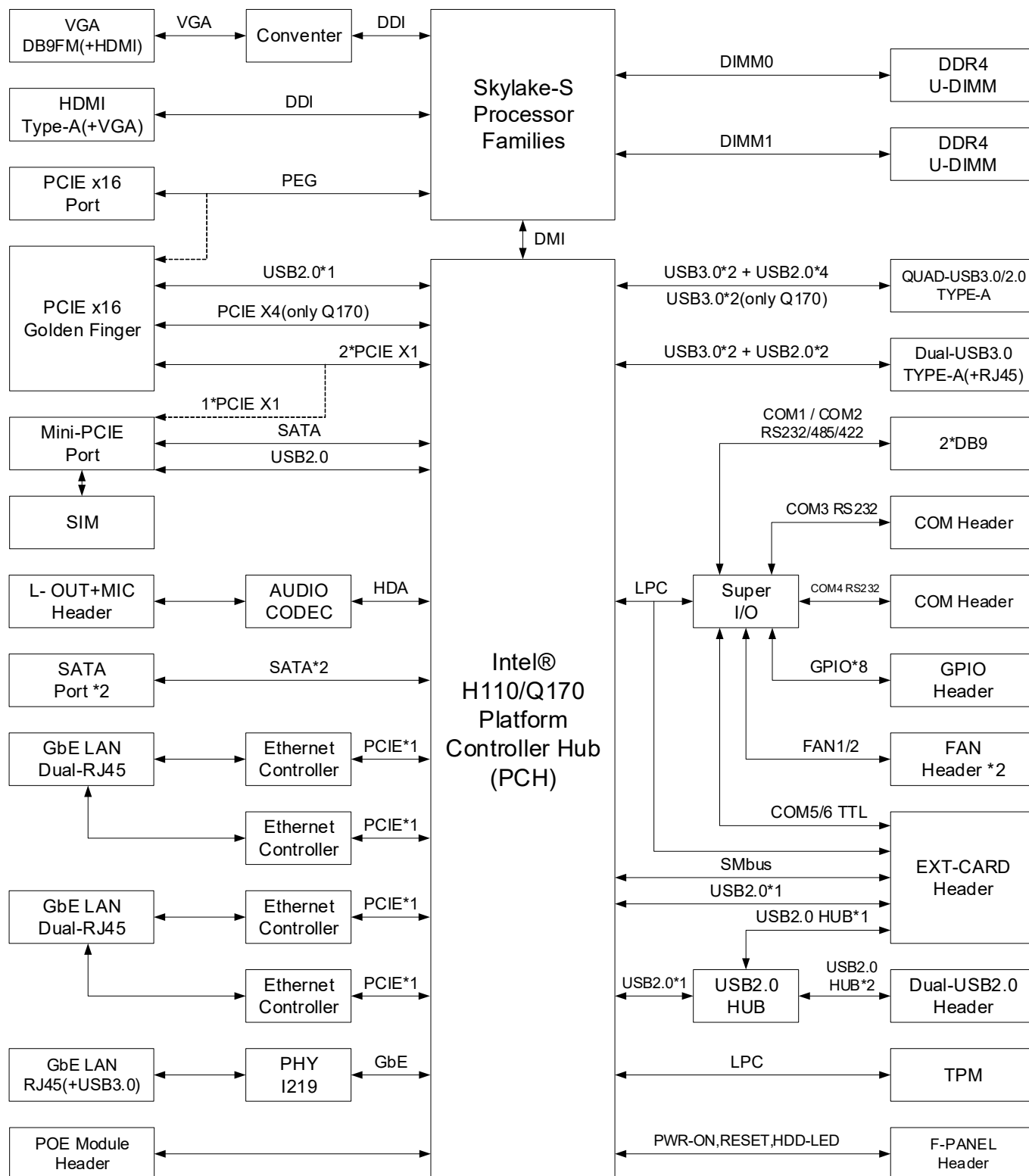
[1]: The maximum memory frequency depends on CPU.

[2]: PCI-E 16x Slot and Golden Finger use the same signal, BOM option selected, support PCI-E 16x Slot by default.

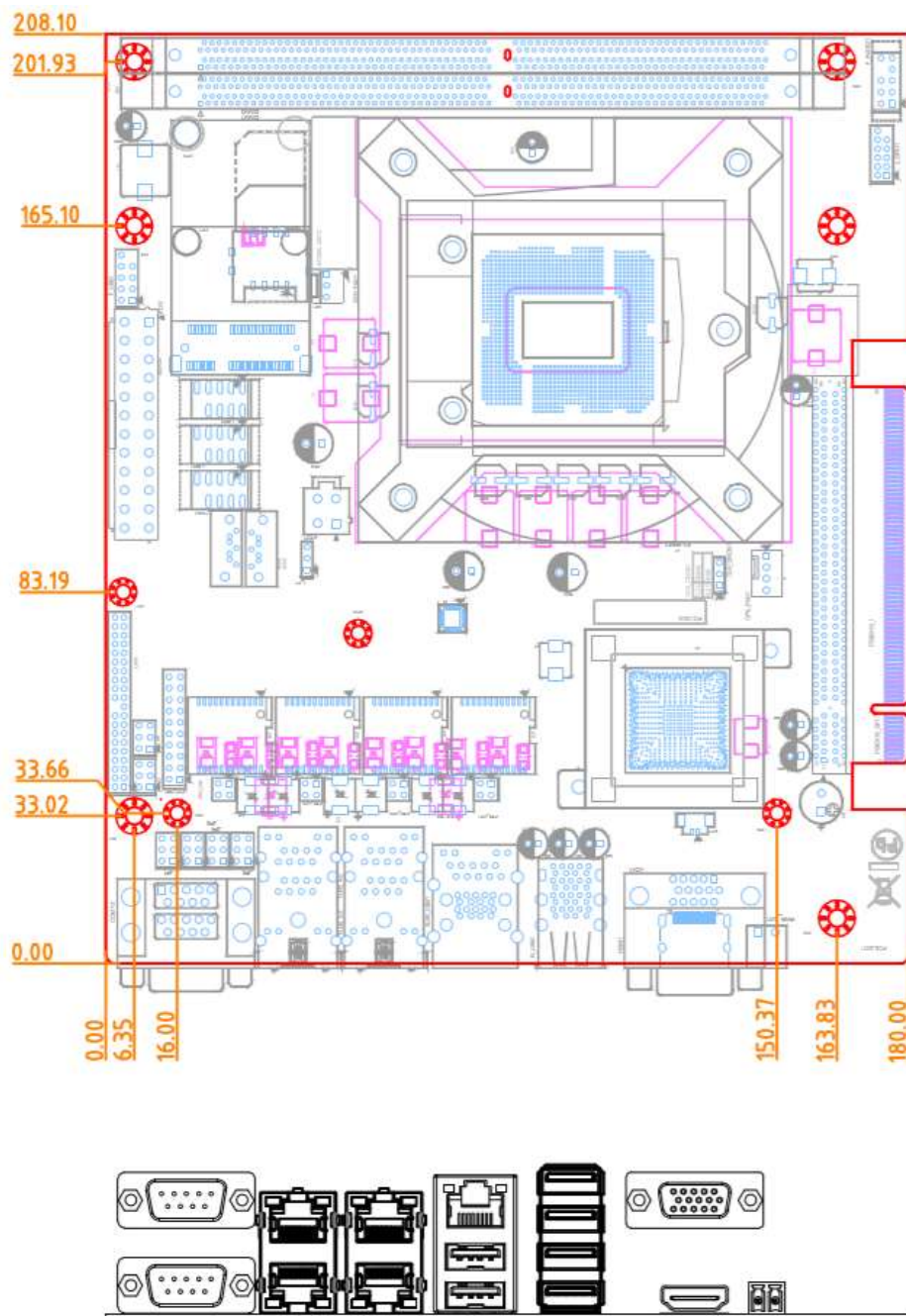
[3]: PCIE signal of Mini PCI-E Slot colay with 2nd PCIE(PCIEx1) of PCI-E 16x Golden Finger, default on PCI-E 16x Golden Finger. (resistor selectable)

[4]: PCI-E 16x Golden Finger needs to be used with the Seavo customized daughter card, otherwise it will burn the motherboard.

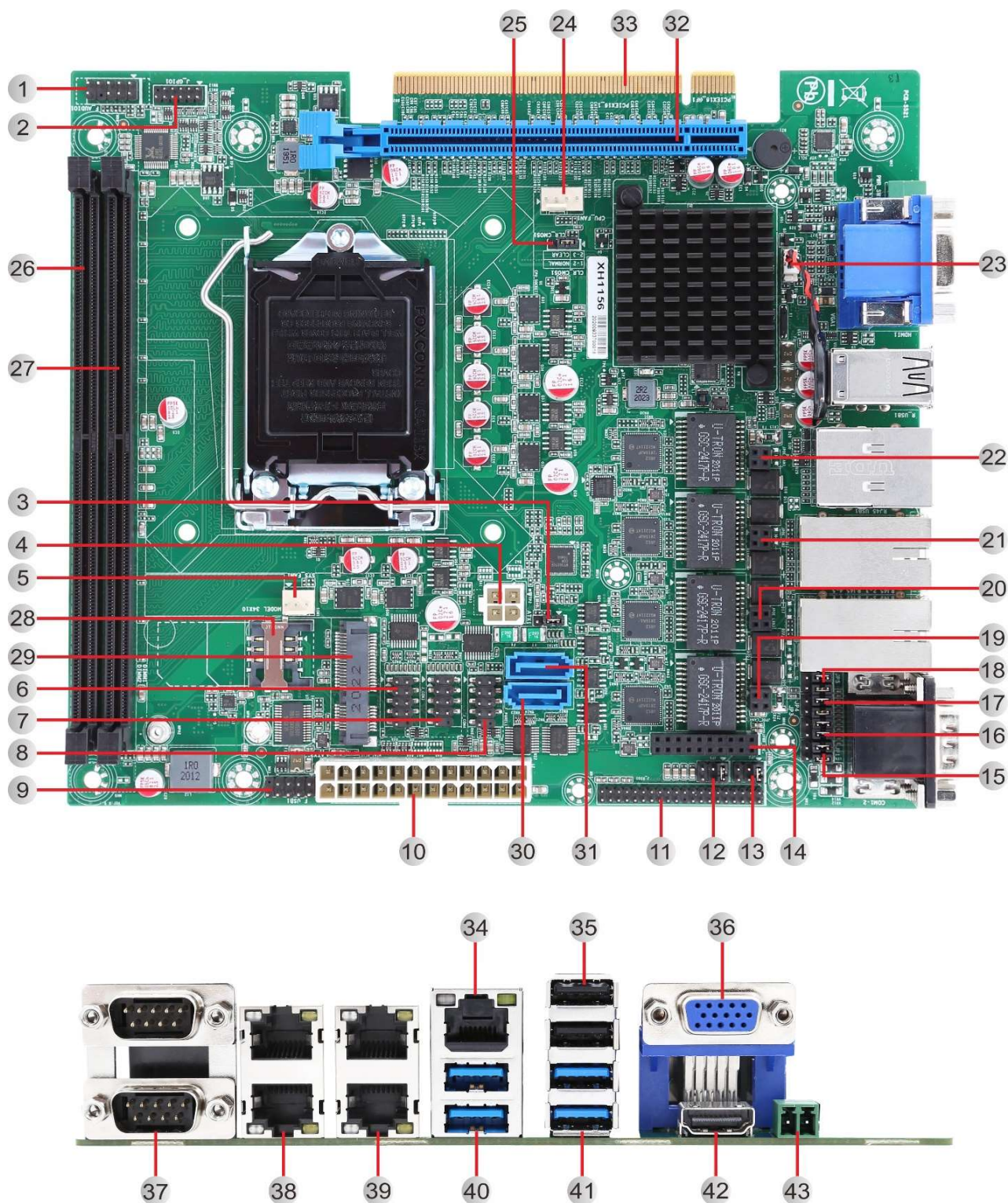
3.Functional Block Diagram

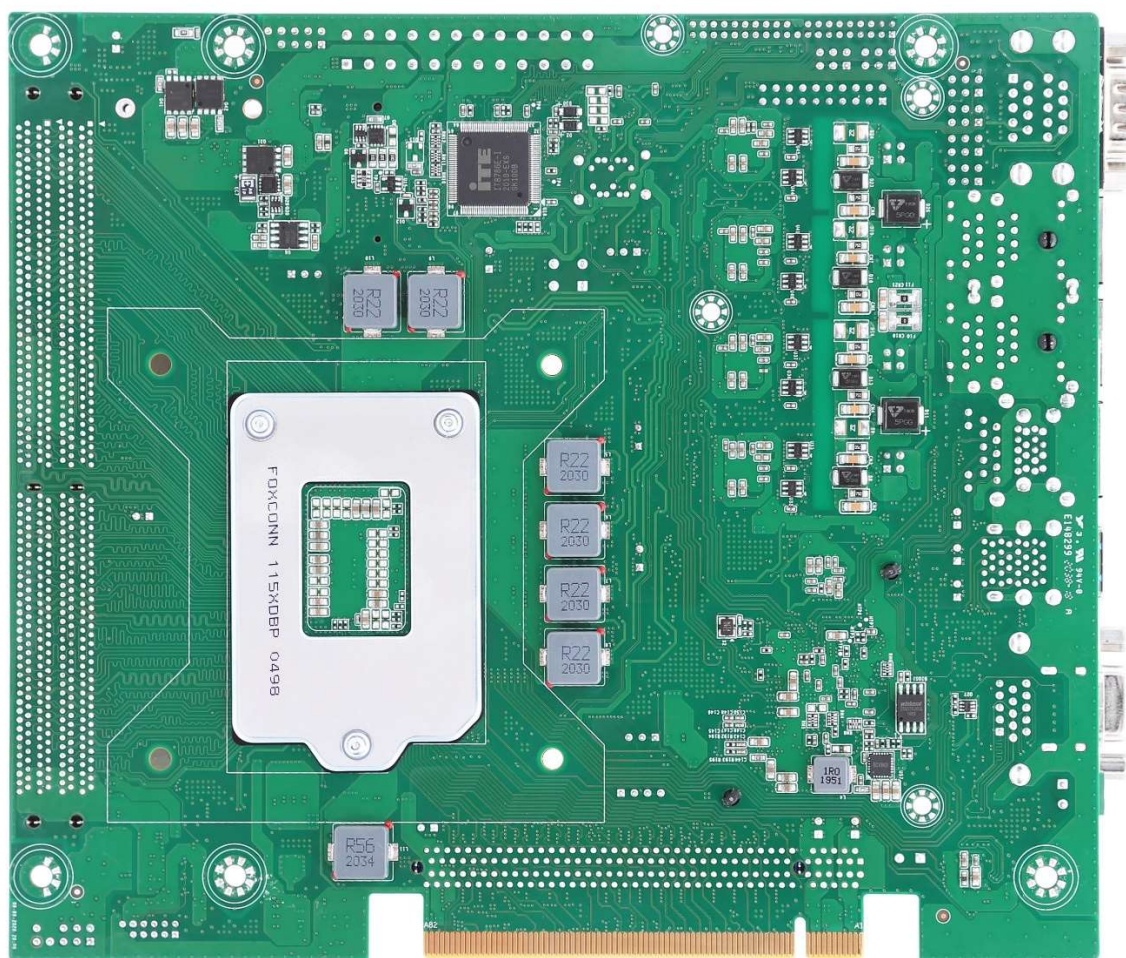


4. Mechanical Drawing



5. Jumpers / Headers and Connectors





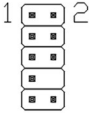
Jumpers / Headers and Connectors

①	F_AUDIO1	Front Audio Header (Line-Out + MIC)
②	J_GPIO1	GPIO Header
③	J_AT1	AT or ATX Select Jumper
④	ATX1	ATX 4P CPU Power Input Connector
⑤	SYS_FAN1	System FAN Header
⑥	J_COM3	COM3 Header
⑦	J_COM4	COM4 Header
⑧	F_PANEL1	Front Panel Header
⑨	F_USB1	Front USB2.0 Header
⑩	ATX2	ATX 24P Power Input Connector
⑪	J_RIO1	EXT-CARD Header
⑫	JP6	COM2 RS232/485/422 Select Jumper1
⑬	JP2	COM1 RS232/485/422 Select Jumper1
⑭	JPWR_POE1	POE Power Connector
⑮	JP1	COM1 RS232/485/422 Select Jumper2
⑯	JP3	COM1 RS232/485/422 Select Jumper3

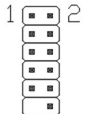
17	JP4	COM2 RS232/485/422 Select Jumper2
18	JP5	COM2 RS232/485/422 Select Jumper3
19	JPOE_LAN4	LAN5 POE Connector
20	JPOE_LAN3	LAN4 POE Connector
21	JPOE_LAN2	LAN3 POE Connector
22	JPOE_LAN1	LAN2 POE Connector
23	BAT1	CMOS Battery Header
24	CPU_FAN1	CPU FAN Header
25	CLR_CMOS1	CMOS Clear Jumper
26	DIMM2	DDR4 CHB DIMM Slot
27	DIMM1	DDR4 CHA DIMM Slot
28	SIM1	Full-Size SIM Card Slot
29	MINI-PCIE1	Mini PCI-E Slot (mSATA/WIFI+4G/3G, default mSATA+4G/3G)
30	SATA1	SATA3.0 7P Connector1
31	SATA2	SATA3.0 7P Connector2
32	PCIEX16_1	PCI-E 16x Slot
33	PCIEX16_GF1	PCI-E 16x Golden Finger
34	RJ45_USB1(RJ45)	GBE LAN RJ45 Connector1
35	R_USB1	Q170 support Dual USB3.0 TYPE-A Connector H110 support Dual USB2.0 TYPE-A Connector
36	VGA1	VGA DB15/F Connector
37	COM1-2	Dual COM1/2 DB9/M Connector
38	RJ45_4-5	GBE LAN Dual RJ45 Connector4/5
39	RJ45_2-3	GBE LAN Dual RJ45 Connector2/3
40	RJ45_USB1(USB)	Dual USB3.0 TYPE-A Connector
41	R_USB1(Dual USB3.0)	Dual USB3.0 TYPE-A Connector
42	HDMI1	HDMI TYPE-A Connector
43	PWR_SW1	Remote Power Switch 2P 3.81mm Terminal Block

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_IN2_L	2	GND
	3	MIC_IN2_R	4	+ 3.3V
	5	LINE_OUT2_R	6	MIC2_JD
	7	GND		
	9	LINE_OUT2_L	10	LINE2_JD

2) 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)
	7	SIO_GPO75 (0xA06 Bit5, H)	8	SIO_GPO76 (0xA06 Bit6, H)
	9	SIO_GPO77 (0xA06 Bit7, H)	10	+ 5V ^[2]
			12	N/C

Notes:

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

[2]: Power on this Pin is 5V by default, 3.3V is available if specified. (resistor selectable)

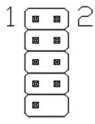
3) J_AT1 (AT or ATX Select Jumper 3*1 Pin 2.54mm)

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

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

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

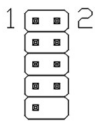
6) J_COM3 (COM3 Header 5*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	COM3_DCD	2	COM3_DSR
	3	COM3_RXD	4	COM3_RTS
	5	COM3_TXD	6	COM3_CTS
	7	COM3_DTR	8	COM3_PIN8 [1]
	9	GND		

Notes:

[1]: Power on this Pin is RI by default, 5V/12V is available if specified. (resistor selectable)

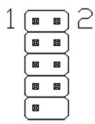
7) J_COM4 (COM4 Header 5*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	COM4_DCD	2	COM4_DSR
	3	COM4_RXD	4	COM4_RTS
	5	COM4_TXD	6	COM4_CTS
	7	COM4_DTR	8	COM4_PIN8 [1]
	9	GND		

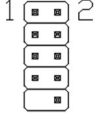
Notes:

[1]: Power on this Pin is RI by default, 5V/12V is available if specified. (resistor selectable)

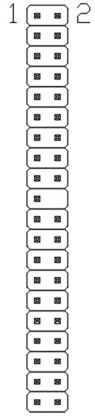
8) F_PANEL1 (Front Panel Header 5*2 Pin 2.54mm)

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		

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

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

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

Graphic	Pin	Definition	Pin	Definition
	1	COM5_RXD	2	COM6_RXD
	3	COM5_TXD	4	COM6_TXD
	5	COM5_RTS	6	COM6_RTS
	7	COM5_DTR	8	COM6_DTR
	9	COM5_DSR	10	COM6_DSR
	11	COM5_CTS	12	COM6_CTS
	13	GND	14	GND
	15	PCH_USB2_7+	16	SMB_SCL
	17	PCH_USB2_7-	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	PCH_LCK24M1
	37	+ 3.3V	38	+ 3.3V
	39	+ 5VA	40	PCH_SERIRQ

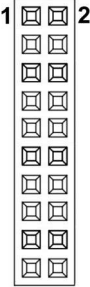
12) 17)18) JP6/JP4/JP5 (COM2 RS232/485/422 Select Jumpers 3*2 Pin 2.54 mm)

Graphic	Setting	Function
 JP6	JP6 (1-2, Default) JP4 (1-3, 2-4, Default) JP5 (1-3, 2-4, Default)	COM2: RS232 (COM2_PIN1: DCD COM2_PIN2: RXD COM2_PIN3: TXD COM2_PIN4: DTR)
 JP4	JP6 (3-4) JP4 (3-5, 4-6) JP5 (3-5, 4-6)	COM2: RS422 (COM2_PIN1: RS422_TX- COM2_PIN2: RS422_TX+ COM2_PIN3: RS422_RX+ COM2_PIN4: RS422_RX-)
 JP5	JP6 (5-6) JP4 (3-5, 4-6) JP5 (No Effect)	COM2: RS485 (COM2_PIN1: RS485- COM2_PIN2: RS485+)

13) 15)16) JP2/JP1/JP3 (COM1 RS232/485/422 Select Jumper2 3*2 Pin 2.54 mm)

Graphic	Setting	Function
 JP2	JP2 (1-2, Default) JP1 (1-3, 2-4, Default) JP3 (1-3, 2-4, Default)	COM1: RS232 (COM1_PIN1: DCD COM1_PIN2: RXD COM1_PIN3: TXD COM1_PIN4: DTR)
 JP1	JP2 (3-4) JP1 (3-5, 4-6) JP3 (3-5, 4-6)	COM1: RS422 (COM1_PIN1: RS422_TX- COM1_PIN2: RS422_TX+ COM1_PIN3: RS422_RX+ COM1_PIN4: RS422_RX-)
 JP3	JP2 (5-6) JP1 (3-5, 4-6) JP3 (No Effect)	COM1: RS485 (COM1_PIN1: RS485- COM1_PIN2: RS485+)

14) JPWR_POE1 (POE Power Connector 10*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	+ 3.3V	2	GND
	3	N/C	4	N/C
	5	GND_HV	6	+ 12V
	7	GND_HV	8	+ 12V
	9	GND_HV	10	+ 12V
	11	GND_HV	12	+ 12V
	13	GND_HV	14	+ 12V
	15	GND_HV	16	+ 12V
	17	GND_HV	18	+ 12V
	19	GND_HV	20	+ 12V

19) JPOE_LAN4 (LAN5 POE Connector 2*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	VCC48_LAN5	2	PSE_LAN5
	3	VCC48_LAN5	4	PSE_LAN5

20) JPOE_LAN3 (LAN4 POE Connector 2*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	VCC48_LAN4	2	PSE_LAN4
	3	VCC48_LAN4	4	PSE_LAN4

21) JPOE_LAN2 (LAN3 POE Connector 2*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	VCC48_LAN3	2	PSE_LAN3
	3	VCC48_LAN3	4	PSE_LAN3

22) JPOE_LAN1 (LAN2 POE Connector 2*2 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	VCC48_LAN2	2	PSE_LAN2
	3	VCC48_LAN2	4	PSE_LAN2

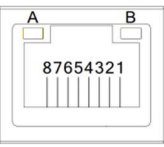
24) CPU_FAN1 (CPU FAN Header 4*1 Pin 2.54mm)

Graphic	Pin	Definition	Pin	Definition
	1	GND	3	FAN Speed Detection1
	2	+ 12V	4	FAN Speed Control

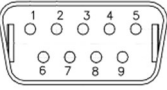
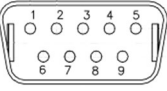
25) CLR_CMOS1 (CMOS Clear Jumper 3*1 Pin 2.54mm)

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

34) RJ45_USB1(RJ45) (GBE LAN RJ45 Connector1 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

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

Graphic	Pin	Definition	Pin	Definition
	1	COM1_PIN1 ^[1]	6	COM1_DSR
	2	COM1_PIN2 ^[1]	7	COM1_RTS
	3	COM1_PIN3 ^[1]	8	COM1_CTS
	4	COM1_PIN4 ^[1]	9	COM1_PIN9 ^[2]
	5	GND		
	1	COM2_PIN1 ^[3]	6	COM2_DSR
	2	COM2_PIN2 ^[3]	7	COM2_RTS
	3	COM2_PIN3 ^[3]	8	COM2_CTS
	4	COM2_PIN4 ^[3]	9	COM2_PIN9 ^[4]
	5	GND		

Notes:

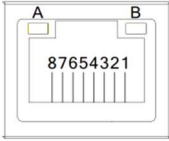
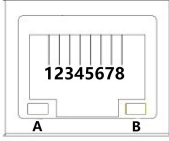
[1]: COM1 can be RS232 (default) / RS422 / RS485 by selecting JP1, JP2, JP3 Jumper, check Location 13/15/16 for detail.

[2]: COM1_PIN9 is RI by default, 5V/12V is available if specified. (resistor selectable)

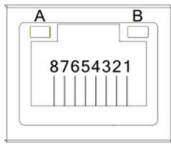
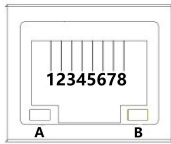
[3]: COM2 can be RS232 (default) / RS422 / RS485 by selecting JP4, JP5, JP6 Jumper, check Location 12/17/18 for detail.

[4]: COM2_PIN9 is RI by default, 5V/12V is available if specified. (resistor selectable)

38) RJ45_4-5 (GBE LAN Dual RJ45 Connector4/5 8Pin)

Graphic	Pin	Definition		Pin	Definition	
 LAN5	1	MDI0_5+		5	MDI2_5+	
	2	MDI0_5-		6	MDI2_5-	
	3	MDI1_5+		7	MDI3_5+	
	4	MDI1_5-		8	MDI3_5-	
	A	Speed LED	1000M: Turn Yellow 100M: Turn Green 10M: Lights Off	B	Active LED	ACT: Twinkling Yellow Only LINK: Lights On Stop: Lights Off
 LAN4	1	MDI0_4+		5	MDI2_4+	
	2	MDI0_4-		6	MDI2_4-	
	3	MDI1_4+		7	MDI3_4+	
	4	MDI1_4-		8	MDI3_4-	
	A	Speed LED	1000M: Turn Yellow 100M: Turn Green 10M: Lights Off	B	Active LED	ACT: Twinkling Yellow Only LINK: Lights On Stop: Lights Off

39) RJ45_2-3 (GBE LAN Dual RJ45 Connector2/3 8Pin)

Graphic	Pin	Definition		Pin	Definition	
 LAN3	1	MDI0_3+		5	MDI2_3+	
	2	MDI0_3-		6	MDI2_3-	
	3	MDI1_3+		7	MDI3_3+	
	4	MDI1_3-		8	MDI3_3-	
	A	Speed LED	1000M: Turn Yellow 100M: Turn Green 10M: Lights Off	B	Active LED	ACT: Twinkling Yellow Only LINK: Lights On Stop: Lights Off
 LAN2	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	1000M: Turn Yellow 100M: Turn Green 10M: Lights Off	B	Active LED	ACT: Twinkling Yellow Only LINK: Lights On Stop: Lights Off

43) PWR_SW1 (Remote Power Switch 2P 3.81mm Terminal Block)

Graphic	Pin	Definition		Pin	Definition	
	1	POWER-		2	POWER+	

7. BIOS setup

See “BIOS Spec for SVX-H1156 Series” for detail information of BIOS setup.

【End】