

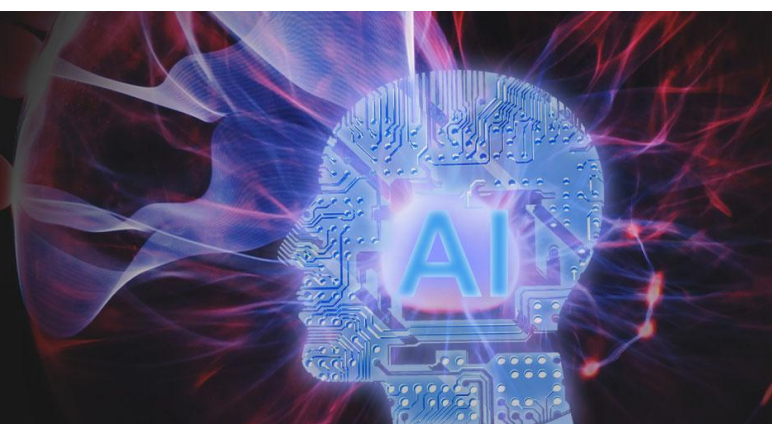
AI Development GC-A101 DEV Datasheet

Date 2024-04-10



品立科技 | 昇腾APN合作伙伴

Plink-AI | Ascend APN Partner



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GC-A101 DEV Datasheet Document History

Version	Date	Description of Change	Hardware Version
V 1.0	2024-04-10	Create the document	V 1.1

Product hardware revision history

Hardware version	Revised date	Revised contents
V 1.1	2024-04-10	Initial version



Electronic components and circuits are very sensitive to electrostatic discharge, although the company will design the main interface on the board card to do anti-static protection design, but it is difficult to do anti-static safety protection for all components and circuits. Therefore, it is recommended that you take ESD safety measures when handling any circuit board component.

ESD safety measures include but are not limited to the following:

1. Put the card in an ESD bag during transportation or storage. Do not take out the card until installation and deployment.
2. Before touching the board, release the static electricity stored in the body: Wear a grounding wrist strap.
3. Operate circuit boards only in electrostatic discharge safe areas.
4. Avoid moving circuit boards in carpeted areas.
5. Avoid direct contact with electronic components on the board through edge contact.

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1 Introduction

The GC-A101 DEV AI development kit is a high-performance AI kit designed to carry the Atlas 200I A2 acceleration module. The Atlas 200I A2 acceleration module integrates the Ascend 310 series AI processor, providing 8 TOPS/20 TOPS of AI computing power and is widely used in intelligent monitoring, education, robotics and other AI processing scenarios. All components on the board are of wide-temperature industrial-grade models. The main interfaces are designed with electrostatic safety protection, and a highly reliable power application solution is adopted. It has rich external interfaces. The carrier board has a TF card slot. A carrier board with multiple boot media can provide greater flexibility and compatibility.

- **Appearance**



2 Product Specification

Carrier board	GC-A101
Module	Ascend Atlas 200I A2 module
Dimensions (L+W+H)	130.8mm x 128.5mm x 46mm (L/W Not Including I/O ports and mounting holes)
Weight	270g
Power Supply	DC 19V~36V
OS	openEuler/Ubuntu

Item	Specification
Temperature	-25°C~65°C

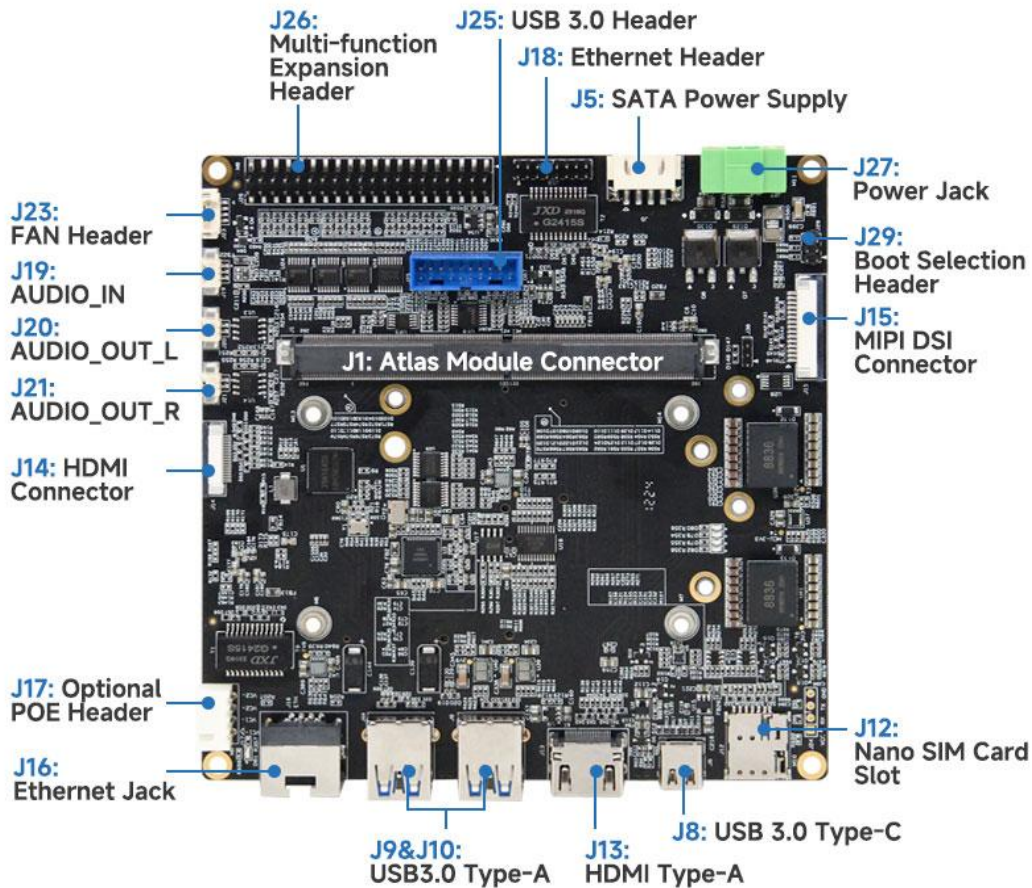
I/O Feature

Interface	Quantity	Interface	Quantity
Ethernet Jack	1	USB Type-C	1
Ethetnet Header	1	USB 3.0 Type-A	2
Nano SIM Card Slot	1	USB 3.0 Header (2xUSB3.0)	1
Boot Selection Header	1	HDMI Connector	1
SATA Signal Connector	1	HDMI Type A	1
Power Input	1	FAN Header	1
Micro SD Card Solt	1	AUDIO_IN	1
MIPI DSI	1	AUDIO_OUT	2
Optional POE Header	1	M.2 Key B	1
M.2 Key M	1	M.2 Key E	1
Multi-function Expansion Header	1 (GPIO, I2C, SPI, I2S, UART.....)		

3 Module Specification (Ascend Atlas 200I A2)

	20 TOPS 12GB	20 TOPS 8GB	8 TOPS 4GB
AI Compute Power	20 TOPS INT8 10 TFLOPS FP16		8 TOPS INT8 4 TFLOPS FP16
Memory	12GB 96bit LPDDR4x 4266 Mbps (ECC)	8GB 64bit LPDDR4x 4266 Mbps (ECC)	4GB 64bit LPDDR4x 3200 Mbps (ECC)
Encoding	20x 1080p 30fps(H.264/H.265) 3x 4k 50fps(H.264/H.265)		12x 1080p 30fps (H.264/H.265) 2x 4k 50fps (H.264/H.265)
Decoding	40x 1080p 30fps(H.264/H.265) 4x 4k 75fps(H.264/H.265)		20x 1080p 30fps (H.264/H.265) 2x 4k 75fps (H.264/H.265)
JPEG Encoding	1080p 256fps		1080p 256fps
JPEG Decoding	1080p 512fps		1080p 512fps
Power	25W	24.5W	21W

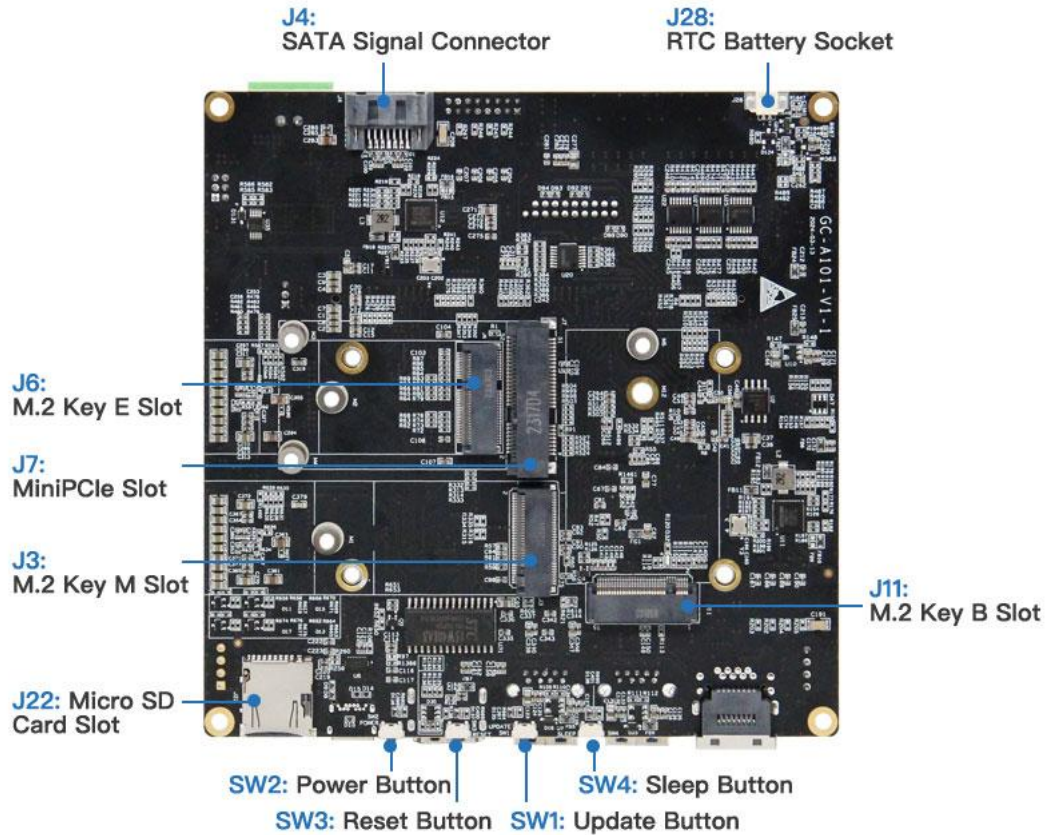
4 Ports on the Front Panel



Front function connector

Sign	Function	Sign	Function
J1	Atlas Module Connector	J16	Ethernet Jack
J10/ J9	USB3.0 Type A	J13	HDMI Type A
J8	USB Type-C	J12	Nano SIM Card Slot
J15	MIPI DSI	J29	Boot Selection Header
J27	Power Jack	J5	SATA Power Supply
J18	Ethernet Header	J25	USB3.0 Header
J23	Fan Header	J19	AUDIO_IN
J20/ J21	AUDIO_OUT(L/R)	J14	HDMI Connector
J17	Optional POE Header	J26	Mult-function Expansion Header

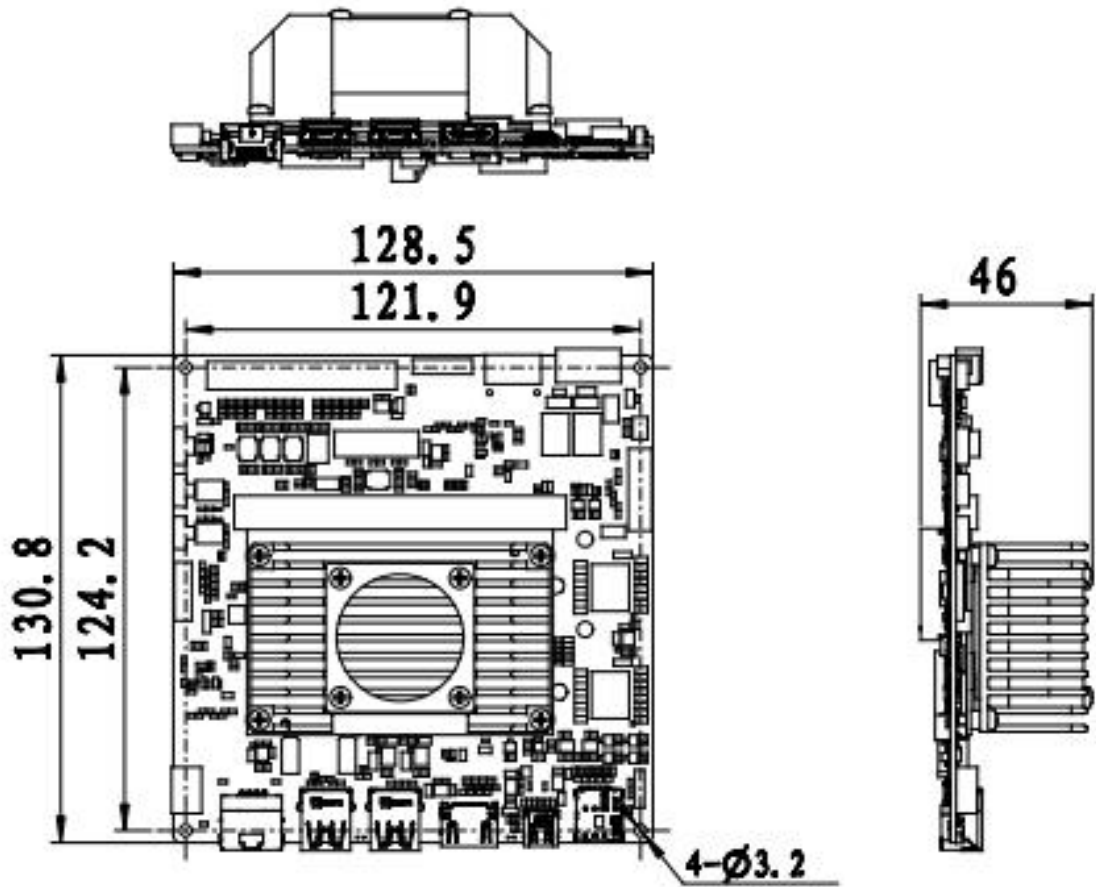
Rear external interface




Backside function connector

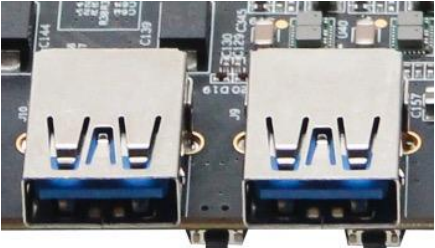
Sign	Function	Sign	Function
J4	SATA Signal Connector	J28	RTC Battery Socket
SW4	Sleep Button	SW2	Power Button
SW3	Reset Button	SW1	Update Button
J7	miniPCIe Slot	J6	M.2 Key E Slot
J3	M.2 Key M Slot	J11	M.2 Key B Slot
J22	Micro SD Card Slot		

5 Dimension figure

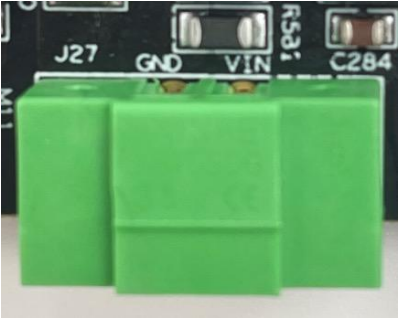


6 GC-A101 Interface definition description

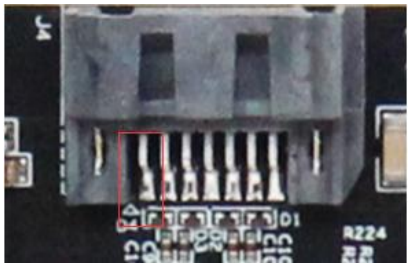
Atlas Module Connector (J1)		
Function	Connect the Atlas 200I A2 accelerator module	
Sign	J1	
Type/Modor	AS0B826-S55B-7H	
Pin definition	For pin definitions of this connector, refer to the pin definition instructions in the Connection Atlas 200I A2 Accelerator Module data book	

USB3.0 Type A (J9/J10)																														
Function	TYPE A USB3.0 connector																													
Sign	J9/J10																													
Type/Modor	Type-A Standard USB 3.0 port																													
Pin definition	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>VBUS</td> <td>2</td> <td>DN</td> </tr> <tr> <td>3</td> <td>DP</td> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>RX_N</td> <td>6</td> <td>RX_P</td> </tr> <tr> <td>7</td> <td>GND</td> <td>8</td> <td>TX_N</td> </tr> <tr> <td>9</td> <td>TX_P</td> <td>10</td> <td>GND</td> </tr> <tr> <td>11</td> <td>GND</td> <td></td> <td></td> </tr> </tbody> </table>	Pin	Signal	Pin	Signal	1	VBUS	2	DN	3	DP	4	GND	5	RX_N	6	RX_P	7	GND	8	TX_N	9	TX_P	10	GND	11	GND			
Pin	Signal	Pin	Signal																											
1	VBUS	2	DN																											
3	DP	4	GND																											
5	RX_N	6	RX_P																											
7	GND	8	TX_N																											
9	TX_P	10	GND																											
11	GND																													

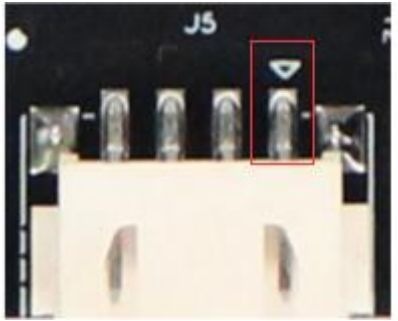
Power Input (J27)

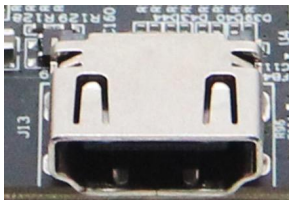
Function	Power input terminal (female)									
Sign	J27									
Type/Moder	XK15EDGRM-3.5MM-2P									
Pin definition	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GND(-)</td> <td>2</td> <td>VIN(+)</td> </tr> </tbody> </table> DC19~36V			Pin	Signal	Pin	Signal	1	GND(-)	2
Pin	Signal	Pin	Signal							
1	GND(-)	2	VIN(+)							


SATA Signal Connector (J4)

Function	SATA connector																									
Sign	J4																									
Type/Moder	XUTS-0727-0332(J4)																									
Pin definition	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GND</td> <td>2</td> <td>A+</td> </tr> <tr> <td>3</td> <td>A-</td> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>B-</td> <td>6</td> <td>B+</td> </tr> <tr> <td>7</td> <td>GND</td> <td>8</td> <td>TAB</td> </tr> <tr> <td>9</td> <td>TAB1</td> <td></td> <td></td> </tr> </tbody> </table> Pin 1 Position: right picture identification.			Pin	Signal	Pin	Signal	1	GND	2	A+	3	A-	4	GND	5	B-	6	B+	7	GND	8	TAB	9	TAB1	
Pin	Signal	Pin	Signal																							
1	GND	2	A+																							
3	A-	4	GND																							
5	B-	6	B+																							
7	GND	8	TAB																							
9	TAB1																									

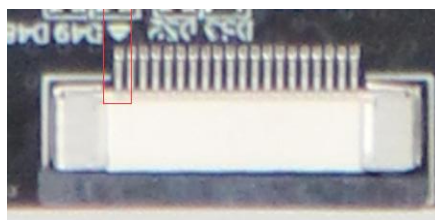
STAT Power Supply(J5)

Function	STAT Power Supply													
Sign	J5													
Type/Moder	XUTS-0727-0332(J4)													
Pin definition	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>VCC(12V)</td> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>GND</td> <td>4</td> <td>VCC(5V)</td> </tr> </tbody> </table> Pin 1 Position: right picture identification.			Pin	Signal	Pin	Signal	1	VCC(12V)	2	GND	3	GND	4
Pin	Signal	Pin	Signal											
1	VCC(12V)	2	GND											
3	GND	4	VCC(5V)											

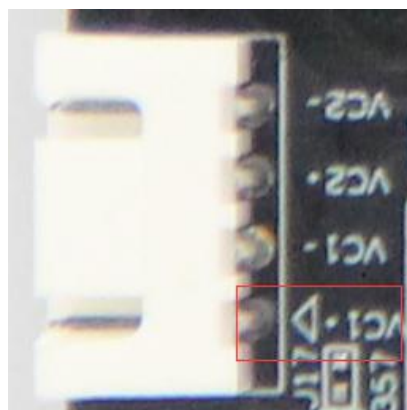
HDMI Type A (J13)																																																				
Function	Type A HDMI connector																																																			
Sign	J13																																																			
Type/Model	Type-A 标准HDMI 连接器																																																			
Pin definition	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>D2+</td> <td>2</td> <td>D2_SHIELD</td> </tr> <tr> <td>3</td> <td>D2-</td> <td>4</td> <td>D1+</td> </tr> <tr> <td>5</td> <td>D1_SHIELD</td> <td>6</td> <td>D1-</td> </tr> <tr> <td>7</td> <td>D0+</td> <td>8</td> <td>D0_SHIELD</td> </tr> <tr> <td>9</td> <td>D0-</td> <td>10</td> <td>CK+</td> </tr> <tr> <td>11</td> <td>CK_SHIELD</td> <td>12</td> <td>CK-</td> </tr> <tr> <td>13</td> <td>CEC</td> <td>14</td> <td>RESERVED</td> </tr> <tr> <td>15</td> <td>SCL</td> <td>16</td> <td>SDA</td> </tr> <tr> <td>17</td> <td>DDC/CEC_GND</td> <td>18</td> <td>+5V</td> </tr> <tr> <td>19</td> <td>HP_DET</td> <td>20</td> <td>SHIELD1</td> </tr> <tr> <td>21</td> <td>SHIELD2</td> <td></td> <td></td> </tr> </tbody> </table>				Pin	Signal	Pin	Signal	1	D2+	2	D2_SHIELD	3	D2-	4	D1+	5	D1_SHIELD	6	D1-	7	D0+	8	D0_SHIELD	9	D0-	10	CK+	11	CK_SHIELD	12	CK-	13	CEC	14	RESERVED	15	SCL	16	SDA	17	DDC/CEC_GND	18	+5V	19	HP_DET	20	SHIELD1	21	SHIELD2		
Pin	Signal	Pin	Signal																																																	
1	D2+	2	D2_SHIELD																																																	
3	D2-	4	D1+																																																	
5	D1_SHIELD	6	D1-																																																	
7	D0+	8	D0_SHIELD																																																	
9	D0-	10	CK+																																																	
11	CK_SHIELD	12	CK-																																																	
13	CEC	14	RESERVED																																																	
15	SCL	16	SDA																																																	
17	DDC/CEC_GND	18	+5V																																																	
19	HP_DET	20	SHIELD1																																																	
21	SHIELD2																																																			

AUDIO OUT L (J20) / AUDIO OUT R(J21)												
Function	AUDIO OUT											
Sign	J20/J21											
Type/Model	A1251WR-S-2P											
Pin definition	<table border="1"> <thead> <tr> <th>引脚</th> <th>信号</th> <th>引脚</th> <th>定义</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>VO1</td> <td>2</td> <td>VO2</td> </tr> </tbody> </table> <p>J20:Left channel output J21:Right channel output</p> <p>Power output per channel amplifier: 3w@3 ohm Pin 1 Position: right picture identification.</p>				引脚	信号	引脚	定义	1	VO1	2	VO2
引脚	信号	引脚	定义									
1	VO1	2	VO2									

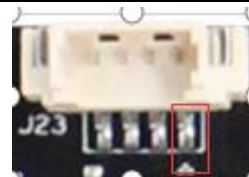
HDMI Connector (J14)				
Function	HDMI connector			
Sign	J14			
Type/Moder	AFC07-S20FCC-00			
Pin definition	Pin	Signal	Pin	Signal
	1	NC	2	HDMI_TX2_P
	3	HDMI_TX2_N	4	GND
	5	HDMI_TX1_P	6	HDMI_TX1_N
	7	GND	8	HDMI_TX0_P
	9	HDMI_TX0_N	10	GND
	11	HDMI_TXC_P	12	HDMI_TXC_N
	13	GND	14	GND
	15	HDMI1_CEC_3V3	16	HDMI_SCL_5V
	17	HDMI_SDA_5V	18	HDMI1_HOTPLUG_3V3
	19	NC	20	VCC_HDMI1_TX_5V
	21	GND	22	GND
	Pin 1 Position: up picture identification.			



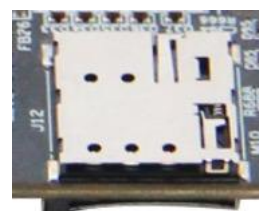
Optional POE Header (J17)				
Function	Optional POE Header			
Sign	J17			
Type/Moder	XH-4AW			
Pin definition	Pin	Signal	Pin	Signal
	1	VC1+	2	VC1-
	3	VC2+	4	VC2-
	Pin 1 Position: right picture identification.			




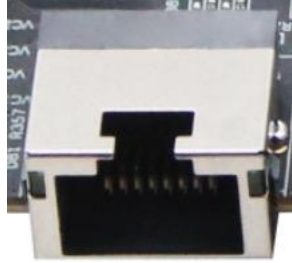
Fan Header (J23)													
Function	Speed regulating fan connector												
Sign	J23												
Type/Moder	HCZZ0015-4												
Pin definition	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GND</td> <td>2</td> <td>VCC(12V)</td> </tr> <tr> <td>3</td> <td>TECH0</td> <td>4</td> <td>PWM0</td> </tr> </tbody> </table>	Pin	Signal	Pin	Signal	1	GND	2	VCC(12V)	3	TECH0	4	PWM0
	Pin	Signal	Pin	Signal									
1	GND	2	VCC(12V)										
3	TECH0	4	PWM0										
Pin 1 Position: up picture identification.													




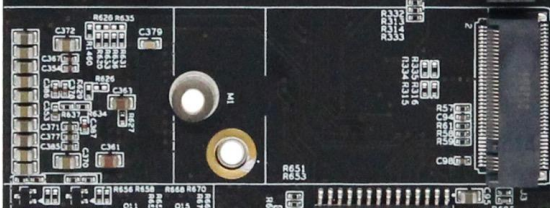
Nano SIM Card Slot (J12)																					
Function	Bullet sim card slot																				
Sign	J12																				
Type/Moder	XDSM-0420-2182B																				
Pin definition	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>C1</td> <td>USIM1_VDD</td> <td>C2</td> <td>USIM1_RST</td> </tr> <tr> <td>C3</td> <td>USIM1_CLK</td> <td>CD</td> <td>USIM1_DET</td> </tr> <tr> <td>C5</td> <td>GND</td> <td>C6</td> <td>NC</td> </tr> <tr> <td>C7</td> <td>USIM1_DAT A</td> <td></td> <td></td> </tr> </tbody> </table>	Pin	Signal	Pin	Signal	C1	USIM1_VDD	C2	USIM1_RST	C3	USIM1_CLK	CD	USIM1_DET	C5	GND	C6	NC	C7	USIM1_DAT A		
	Pin	Signal	Pin	Signal																	
	C1	USIM1_VDD	C2	USIM1_RST																	
	C3	USIM1_CLK	CD	USIM1_DET																	
	C5	GND	C6	NC																	
C7	USIM1_DAT A																				

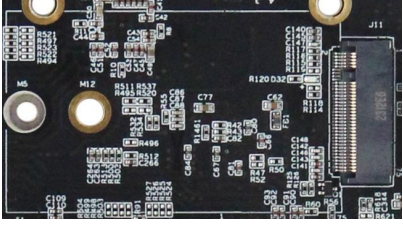



Boot Selection Header (J29)																																																				
Function	Select boot mode																																																			
Sign	J29																																																			
Type/Moder	HDR200M-2X3																																																			
Pin definition																																																				
	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>BOOT_SEL0</td> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>BOOT_SEL1</td> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>BOOT_SEL2</td> <td>6</td> <td>GND</td> </tr> </tbody> </table> <p>The Atlas 200I A2 module supports boot media as shown in the following table The BOOT_SEL[2:0] value is used to select the boot media. BOOT_SEL[2:0] is pulled up on the Atlas 200I A2 module by default. The boot mode needs to be selected together with the mainboard.</p> <p>Pin 1 Position: up picture identification.</p> <table border="1"> <thead> <tr> <th>BOOT_SEL2</th> <th>BOOT_SEL1</th> <th>BOOT_SEL0</th> <th>Boot Media</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> <td>SPI NOR Flash</td> </tr> <tr> <td>0</td> <td>0</td> <td>1</td> <td>SPI NOR Flash + UFS</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> <td>SPI NOR Flash + PCIe</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> <td>SPI NOR Flash +eMMC</td> </tr> <tr> <td>0</td> <td>1</td> <td>1</td> <td>SPI NOR Flash + SSD/SATA</td> </tr> <tr> <td>1</td> <td>0</td> <td>1</td> <td>SPI NOR Flash +SD card</td> </tr> <tr> <td>1</td> <td>1</td> <td>0</td> <td>SPI NOR Flash +USB</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> <td>SPI NOR Flash + UART/GE</td> </tr> </tbody> </table>	Pin	Signal	Pin	Signal	1	BOOT_SEL0	2	GND	3	BOOT_SEL1	4	GND	5	BOOT_SEL2	6	GND	BOOT_SEL2	BOOT_SEL1	BOOT_SEL0	Boot Media	0	0	0	SPI NOR Flash	0	0	1	SPI NOR Flash + UFS	0	1	0	SPI NOR Flash + PCIe	1	0	0	SPI NOR Flash +eMMC	0	1	1	SPI NOR Flash + SSD/SATA	1	0	1	SPI NOR Flash +SD card	1	1	0	SPI NOR Flash +USB	1	1	1
Pin	Signal	Pin	Signal																																																	
1	BOOT_SEL0	2	GND																																																	
3	BOOT_SEL1	4	GND																																																	
5	BOOT_SEL2	6	GND																																																	
BOOT_SEL2	BOOT_SEL1	BOOT_SEL0	Boot Media																																																	
0	0	0	SPI NOR Flash																																																	
0	0	1	SPI NOR Flash + UFS																																																	
0	1	0	SPI NOR Flash + PCIe																																																	
1	0	0	SPI NOR Flash +eMMC																																																	
0	1	1	SPI NOR Flash + SSD/SATA																																																	
1	0	1	SPI NOR Flash +SD card																																																	
1	1	0	SPI NOR Flash +USB																																																	
1	1	1	SPI NOR Flash + UART/GE																																																	

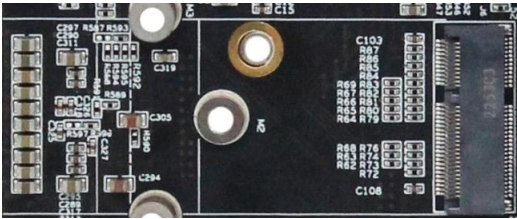
Ethernet Jack (J16)				
Function	RJ45 connector			
Sign	J16			
Type/Moder	RJ010-A21-F00-106A			
Pin definition	Pin	Signal	Pin	Signal
	1	MX1+	2	MX1-
	3	MX2+	4	MX3+
	5	MX3-	6	MX2-
	7	MX4+	8	MX4-
				

Ethernet Header (J18)				
Function	Gigabit network 2.0mm spacing pins			
Sign	J18			
Type/Moder	HDR200M-2X8			
Pin definition	Pin	Signal	Pin	Signal
	1	GND	2	VCC_3V3
	3	VCC_3V3	4	VCC_3V3
	5	RGMI1_LED0_3V3	6	RGMI1_LED2_3V3
	7	NC	8	NC
	9	ETH1_N_0	10	ETH1_P_0
	11	ETH1_N_1	12	ETH1_P_1
	13	ETH1_N_2	14	ETH1_P_2
	15	ETH1_N_3	16	ETH1_P_3
Pin 1 Position: up picture identification.				

M.2 Key M Slot (J3)								
Function	M.2 Key M Slot							
Sign	J3							
Type/Model	APCI0107-P001A, 2242							
Pin definition	Standard M.2 Key M ports							
	引脚	信号	引脚	信号	引脚	信号	引脚	信号
	1	GND	2	3.3V	3	GND	4	3.3V
	5	NC	6	NC	7	NC	8	NC
	9	GND	10	NC	11	NC	12	3.3V
	13	NC	14	3.3V	15	GND	16	3.3V
	17	NC	18	3.3V	19	NC	20	NC
	21	GND	22	NC	23	NC	24	NC
	25	NC	26	NC	27	GND	28	NC
	29	SERDES1_RX_N	30	NC	31	SERDES1_RX_P	32	NC
	33	GND	34	NC	35	SERDES1_TX_N	36	NC
	37	SERDES1_TX_P	38	NC	39	GND	40	NC
	41	SERDES0_RX_N	42	NC	43	SERDES0_RX_P	44	NC
	45	GND	46	NC	47	SERDES0_TX_N	48	NC
	49	SERDES0_TX_P	50	PERST#	51	GND	52	CLKREQ#
	53	SERDES0_CLK_N	54	PEWAKE#	55	SERDES0_CLK_P	56	NC
	57	GND	58	NC	59	NC	60	NC
	61	NC	62	NC	63	NC	64	NC
	65	NC	66	NC	67	NC	68	NC
	69	M2M_TYPE1_V8	70	3.3V	71	GND	72	3.3V
73	GND	74	3.3V	75	GND	76	NC	
77	NC							

M.2 key B Slot (J11)								
Function	B Key M.2 Slot							
Sign	J11							
Type /Model	APCI0105-P001A,3050							
Pin definition	引脚	信号	引脚	信号	引脚	信号	引脚	信号
	1	NC	2	VCC	3	GND	4	VCC
	5	GND	6	FULL_CARD_POWER_OFF#	7	USB20_DP2	8	W_DISABLE1#
	9	USB20_DN2	10	WWAN_LED#	11	GND	12	NC
	13	NC	14	NC	15	NC	16	NC
	17	NC	18	NC	19	NC	20	NC
	21	NC	22	NC	23	VCC_1V8	24	NC
	25	NC	26	W_DISABLE2#	27	GND	28	NC
	29	USB30_RX_DN2	30	USIM1_RST	31	USB30_RX_DP2	32	USIM1_CLK
	33	GND	34	USIM1_DATA	35	USB30_TX_DN2	36	USIM1_VDD
	37	USB30_TX_DP2	38	NC	39	GND	40	NC
	41	NC	42	NC	43	NC	44	NC
	45	GND	46	NC	47	NC	48	NC
	49	NC	50	NC	51	GND	52	NC
	53	NC	54	NC	55	NC	56	NC
	57	GND	58	NC	59	NC	60	NC
	61	NC	62	NC	63	NC	64	NC
	65	NC	66	USIM1_DET	67	RESET#	68	NC
	69	NC	70	VCC	71	GND	72	VCC
	73	GND	74	VCC	75	NC	76	GND
77	GND							

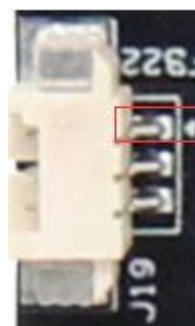
miniPCle Slot (J7)																																																																																																													
Function	miniPCle Slot																																																																																																												
Sign	J7																																																																																																												
Type/Model	PCIE-52P80H																																																																																																												
Pin definition	<table border="1"> <thead> <tr> <th>引脚</th> <th>信号</th> <th>引脚</th> <th>信号</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>VCC_3V3</td> <td>2</td> <td>3.3Vaux</td> </tr> <tr> <td>3</td> <td>NC</td> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>NC</td> <td>6</td> <td>+1.5V</td> </tr> <tr> <td>7</td> <td>VCC_3V3</td> <td>8</td> <td>NC</td> </tr> <tr> <td>9</td> <td>GND</td> <td>10</td> <td>NC</td> </tr> <tr> <td>11</td> <td>SERDES6_CLK_N</td> <td>12</td> <td>NC</td> </tr> <tr> <td>13</td> <td>SERDES6_CLK_P</td> <td>14</td> <td>NC</td> </tr> <tr> <td>15</td> <td>GND</td> <td>16</td> <td>NC</td> </tr> <tr> <td>17</td> <td>NC</td> <td>18</td> <td>GND</td> </tr> <tr> <td>19</td> <td>NC</td> <td>20</td> <td>NC</td> </tr> <tr> <td>21</td> <td>GND</td> <td>22</td> <td>MPCIE_PERST_N_3V3</td> </tr> <tr> <td>23</td> <td>SERDES6_RX_N</td> <td>24</td> <td>+3.3Vaux</td> </tr> <tr> <td>25</td> <td>SERDES6_RX_P</td> <td>26</td> <td>GND</td> </tr> <tr> <td>27</td> <td>GND</td> <td>28</td> <td>+1.5V</td> </tr> <tr> <td>29</td> <td>GND</td> <td>30</td> <td>NC</td> </tr> <tr> <td>31</td> <td>SERDES6_TX_N</td> <td>32</td> <td>NC</td> </tr> <tr> <td>33</td> <td>SERDES6_TX_P</td> <td>34</td> <td>GND</td> </tr> <tr> <td>35</td> <td>GND</td> <td>36</td> <td>NC</td> </tr> <tr> <td>37</td> <td>GND</td> <td>38</td> <td>NC</td> </tr> <tr> <td>39</td> <td>+3.3Vaux</td> <td>40</td> <td>GND</td> </tr> <tr> <td>41</td> <td>+3.3Vaux</td> <td>42</td> <td>NC</td> </tr> <tr> <td>43</td> <td>GND</td> <td>44</td> <td>NC</td> </tr> <tr> <td>45</td> <td>NC</td> <td>46</td> <td>NC</td> </tr> <tr> <td>47</td> <td>NC</td> <td>48</td> <td>+1.5V</td> </tr> <tr> <td>49</td> <td>NC</td> <td>50</td> <td>GND</td> </tr> <tr> <td>51</td> <td>NC</td> <td>52</td> <td>+3.3Vaux</td> </tr> </tbody> </table>	引脚	信号	引脚	信号	1	VCC_3V3	2	3.3Vaux	3	NC	4	GND	5	NC	6	+1.5V	7	VCC_3V3	8	NC	9	GND	10	NC	11	SERDES6_CLK_N	12	NC	13	SERDES6_CLK_P	14	NC	15	GND	16	NC	17	NC	18	GND	19	NC	20	NC	21	GND	22	MPCIE_PERST_N_3V3	23	SERDES6_RX_N	24	+3.3Vaux	25	SERDES6_RX_P	26	GND	27	GND	28	+1.5V	29	GND	30	NC	31	SERDES6_TX_N	32	NC	33	SERDES6_TX_P	34	GND	35	GND	36	NC	37	GND	38	NC	39	+3.3Vaux	40	GND	41	+3.3Vaux	42	NC	43	GND	44	NC	45	NC	46	NC	47	NC	48	+1.5V	49	NC	50	GND	51	NC	52	+3.3Vaux
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	25	SERDES6_RX_P	26	GND																																																																																																									
	27	GND	28	+1.5V																																																																																																									
	29	GND	30	NC																																																																																																									
	31	SERDES6_TX_N	32	NC																																																																																																									
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	51	NC	52	+3.3Vaux																																																																																																									
																																																																																																													

M.2 key E Slot (J6)								
Function	E Key M.2 Slot							
Sign	J6							
Type /Model	APCI0085-P005A,2230							
Pin definition	引脚	信号	引脚	信号	引脚	信号	引脚	信号
	1	GND	2	3P3V	3	NC	4	3P3V
	5	NC	6	NC	7	GND	8	I2S1_BCLK_1V8
	9	NC	10	I2S1_LRC K_1V8	11	NC	12	I2S1_MISO_1V8
	13	NC	14	I2S1_MO SI_1V8	15	NC	16	NC
	17	NC	18	GND	19	NC	20	3.3V
	21	NC	22	UART3_R X_1V8	23	NC	24	NC
	25	NC	26	NC	27	NC	28	NC
	29	NC	30	NC	31	NC	32	UART3_TX_1V8
	33	GND	34	UART3_C TX_1V8	35	SERDES3_T X_P	36	UART3_RTX_1V8
	37	SERDES3_TX_N	38	NC	39	GND	40	NC
	41	SERDES3_RX_P	42	NC	43	SERDES3_R X_N	44	NC
	45	GND	46	NC	47	SERDES3_C LK_P	48	NC
	49	SERDES3_CL K_N	50	NC	51	GND	52	M2E_PERST_N_3V3
	53	M2E_CLKREQ _N_1V8	54	NC	55	M2E_WAKE _N_3V3	56	NC
	57	GND	58	I2C8_SD A_1V8	59	NC	60	I2C8_SCL_1V8
	61	NC	62	NC	63	GND	64	VCC_1V8
	65	NC	66	NC	67	NC	68	NC
	69	GND	70	NC	71	NC	72	3P3V
	73	NC	74	3P3V	75	GND	76	GND
	77	GND						

USB3.0 Header (J25)																																													
Function	USB3.0 Expansion port 2.0mm pin spacing																																												
Sign	J25																																												
Type/Model	A37-1BL01-111-A																																												
Pin definition	<table border="1"> <thead> <tr> <th>引脚</th> <th>信号</th> <th>引脚</th> <th>信号</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>VOUT</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>USB30_RX_DN3</td> <td>19</td> <td>VOUT</td> </tr> <tr> <td>3</td> <td>USB30_RX_DP3</td> <td>18</td> <td>USB30_RX_DN4</td> </tr> <tr> <td>4</td> <td>GND</td> <td>17</td> <td>USB30_RX_DP4</td> </tr> <tr> <td>5</td> <td>USB30_TX_DN3</td> <td>16</td> <td>GND</td> </tr> <tr> <td>6</td> <td>USB30_TX_DP3</td> <td>15</td> <td>USB30_TX_DN4</td> </tr> <tr> <td>7</td> <td>GND</td> <td>14</td> <td>USB30_TX_DP4</td> </tr> <tr> <td>8</td> <td>USB20_DN3</td> <td>13</td> <td>GND</td> </tr> <tr> <td>9</td> <td>USB20_DP3</td> <td>12</td> <td>USB20_DN4</td> </tr> <tr> <td>10</td> <td>NC</td> <td>11</td> <td>USB20_DP4</td> </tr> </tbody> </table>	引脚	信号	引脚	信号	1	VOUT			2	USB30_RX_DN3	19	VOUT	3	USB30_RX_DP3	18	USB30_RX_DN4	4	GND	17	USB30_RX_DP4	5	USB30_TX_DN3	16	GND	6	USB30_TX_DP3	15	USB30_TX_DN4	7	GND	14	USB30_TX_DP4	8	USB20_DN3	13	GND	9	USB20_DP3	12	USB20_DN4	10	NC	11	USB20_DP4
	引脚	信号	引脚	信号																																									
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	3	USB30_RX_DP3	18	USB30_RX_DN4																																									
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	5	USB30_TX_DN3	16	GND																																									
	6	USB30_TX_DP3	15	USB30_TX_DN4																																									
	7	GND	14	USB30_TX_DP4																																									
	8	USB20_DN3	13	GND																																									
	9	USB20_DP3	12	USB20_DN4																																									
10	NC	11	USB20_DP4																																										
Pin 1 Position: right picture identification.																																													

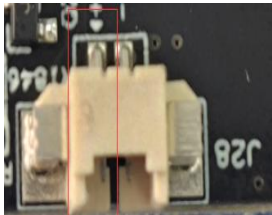


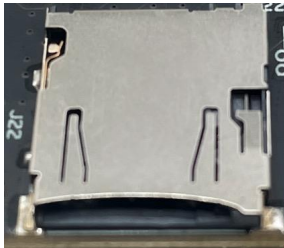
AUDIO_IN (J19)													
Function	Connect the audio interface to the microphone												
Sign	J19												
Type/Model	A1251WR-S-3P												
Pin definition	<table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Pin</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>AUDIO_IN0R</td> <td>2</td> <td>AUDIO_IN0L</td> </tr> <tr> <td>3</td> <td>MICBIAS</td> <td></td> <td></td> </tr> </tbody> </table>	Pin	Signal	Pin	Signal	1	AUDIO_IN0R	2	AUDIO_IN0L	3	MICBIAS		
	Pin	Signal	Pin	Signal									
	1	AUDIO_IN0R	2	AUDIO_IN0L									
3	MICBIAS												
Pin 1 Position: right picture identification.													

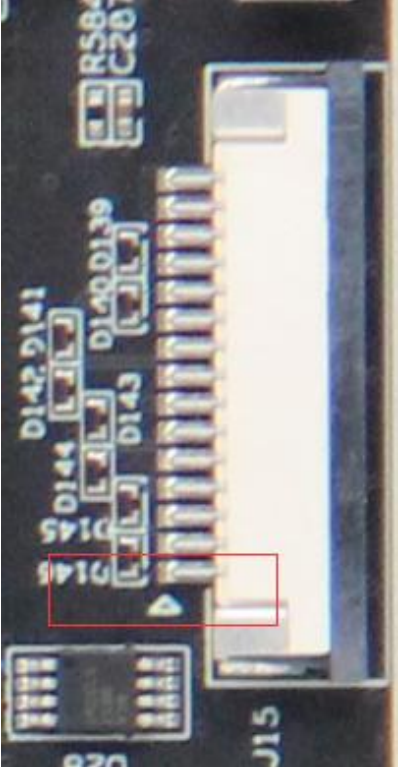


Multi-function Expansion Header (J26)																																																																																					
Function	Multifunctional 2.54mm pin spacing signal expansion interface																																																																																				
Sign	J26																																																																																				
Type/Moder	HDR254M-2X20_SMD																																																																																				
Pin definition	<table border="1"> <thead> <tr> <th>引脚</th> <th>信号</th> <th>引脚</th> <th>信号</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>3.3V</td> <td>2</td> <td>5V</td> </tr> <tr> <td>3</td> <td>I2C7_SDA_3V3</td> <td>4</td> <td>5V</td> </tr> <tr> <td>5</td> <td>I2C7_SCL_3V3</td> <td>6</td> <td>GND</td> </tr> <tr> <td>7</td> <td>I2S0_MCLK_3V3</td> <td>8</td> <td>UART0_TX_3V3</td> </tr> <tr> <td>9</td> <td>GND</td> <td>10</td> <td>UART0_RX_3V3</td> </tr> <tr> <td>11</td> <td>UART2_RX</td> <td>12</td> <td>I2S0_BCLK_3V3</td> </tr> <tr> <td>13</td> <td>GPIO27_3V3</td> <td>14</td> <td>GND</td> </tr> <tr> <td>15</td> <td>UART1_TX</td> <td>16</td> <td>UART1_RX</td> </tr> <tr> <td>17</td> <td>3.3V</td> <td>18</td> <td>GPIO24_3V3</td> </tr> <tr> <td>19</td> <td>SPI0_MOSI_3V3</td> <td>20</td> <td>GND</td> </tr> <tr> <td>21</td> <td>SPI0_MISO_3V3</td> <td>22</td> <td>GPIO25_3V3</td> </tr> <tr> <td>23</td> <td>SPI0_CLK_3V3</td> <td>24</td> <td>SPI0_CS0_N_3V3</td> </tr> <tr> <td>25</td> <td>GND</td> <td>26</td> <td>UART2_RTX_3V3</td> </tr> <tr> <td>27</td> <td>I2C6_SDA_3V3</td> <td>28</td> <td>I2C6_SCL_3V3</td> </tr> <tr> <td>29</td> <td>I2S1_MCLK_3V3</td> <td>30</td> <td>GND</td> </tr> <tr> <td>31</td> <td>UART2_CTX_3V3</td> <td>32</td> <td>PWM1_3V3</td> </tr> <tr> <td>33</td> <td>GPIO13_3V3</td> <td>34</td> <td>GND</td> </tr> <tr> <td>35</td> <td>I2S0_LRCK_3V3</td> <td>36</td> <td>UART2_TX</td> </tr> <tr> <td>37</td> <td>GPIO26_3V3</td> <td>38</td> <td>I2S0_MISO_3V3</td> </tr> <tr> <td>39</td> <td>GND</td> <td>40</td> <td>I2S0_MOSI_3V3</td> </tr> </tbody> </table>	引脚	信号	引脚	信号	1	3.3V	2	5V	3	I2C7_SDA_3V3	4	5V	5	I2C7_SCL_3V3	6	GND	7	I2S0_MCLK_3V3	8	UART0_TX_3V3	9	GND	10	UART0_RX_3V3	11	UART2_RX	12	I2S0_BCLK_3V3	13	GPIO27_3V3	14	GND	15	UART1_TX	16	UART1_RX	17	3.3V	18	GPIO24_3V3	19	SPI0_MOSI_3V3	20	GND	21	SPI0_MISO_3V3	22	GPIO25_3V3	23	SPI0_CLK_3V3	24	SPI0_CS0_N_3V3	25	GND	26	UART2_RTX_3V3	27	I2C6_SDA_3V3	28	I2C6_SCL_3V3	29	I2S1_MCLK_3V3	30	GND	31	UART2_CTX_3V3	32	PWM1_3V3	33	GPIO13_3V3	34	GND	35	I2S0_LRCK_3V3	36	UART2_TX	37	GPIO26_3V3	38	I2S0_MISO_3V3	39	GND	40	I2S0_MOSI_3V3
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	7	I2S0_MCLK_3V3	8	UART0_TX_3V3																																																																																	
	9	GND	10	UART0_RX_3V3																																																																																	
	11	UART2_RX	12	I2S0_BCLK_3V3																																																																																	
	13	GPIO27_3V3	14	GND																																																																																	
	15	UART1_TX	16	UART1_RX																																																																																	
	17	3.3V	18	GPIO24_3V3																																																																																	
	19	SPI0_MOSI_3V3	20	GND																																																																																	
	21	SPI0_MISO_3V3	22	GPIO25_3V3																																																																																	
	23	SPI0_CLK_3V3	24	SPI0_CS0_N_3V3																																																																																	
	25	GND	26	UART2_RTX_3V3																																																																																	
	27	I2C6_SDA_3V3	28	I2C6_SCL_3V3																																																																																	
	29	I2S1_MCLK_3V3	30	GND																																																																																	
	31	UART2_CTX_3V3	32	PWM1_3V3																																																																																	
	33	GPIO13_3V3	34	GND																																																																																	
	35	I2S0_LRCK_3V3	36	UART2_TX																																																																																	
37	GPIO26_3V3	38	I2S0_MISO_3V3																																																																																		
39	GND	40	I2S0_MOSI_3V3																																																																																		
	Pin 1 Position: right picture identification.																																																																																				








RTC Battery Socket (J28)				
Function	Real time clock			
Sign	J28			
Type/Model	A1251WR-S-2P			
Pin definition	Pin	Signal	Pin	Signal
	1	VCC (3V)	2	GND(-)
Pin 1 Position: right picture identification.				
				

Micro SD Card Slot (J22)				
Function	Micro SD Card Slot			
Sign	J22			
Type/Model	TF-111			
Pin definition	Pin	Signal	Pin	Signal
	1	DAT2	2	CD/DAT3
	3	CMD	4	VDD
	5	CLK	6	VSS
	7	DAT0	8	DAT1
	9	SW1	10	SH1
	11	SW2	12	SH2
	13	SH3	14	SH4
				

MIPI DSI Connector (J15)																																									
Function	Interface that connects to the display device																																								
Sign	J15																																								
Type/Model	AFA07-S15FCC-00																																								
Pin definition	<table border="1"> <thead> <tr> <th>引脚</th> <th>信号</th> <th>引脚</th> <th>信号</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GND</td> <td>2</td> <td>MIPI_DSI_D1_N</td> </tr> <tr> <td>3</td> <td>MIPI_DSI_D1_P</td> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>MIPI_DSI_CK_N</td> <td>6</td> <td>MIPI_DSI_CK_P</td> </tr> <tr> <td>7</td> <td>GND</td> <td>8</td> <td>MIPI_DSI_D0_N</td> </tr> <tr> <td>9</td> <td>MIPI_DSI_D0_P</td> <td>10</td> <td>GND</td> </tr> <tr> <td>11</td> <td>MIPI_DSI_I2C_SCL_3V3</td> <td>12</td> <td>MIPI_DSI_I2C_SDA_3V3</td> </tr> <tr> <td>13</td> <td>GND</td> <td>14</td> <td>VCC_3V3</td> </tr> <tr> <td>15</td> <td>VCC_3V3</td> <td>16</td> <td>GND</td> </tr> <tr> <td>17</td> <td>GND</td> <td></td> <td></td> </tr> </tbody> </table> <p>Pin 1 Position: right picture identification.</p>	引脚	信号	引脚	信号	1	GND	2	MIPI_DSI_D1_N	3	MIPI_DSI_D1_P	4	GND	5	MIPI_DSI_CK_N	6	MIPI_DSI_CK_P	7	GND	8	MIPI_DSI_D0_N	9	MIPI_DSI_D0_P	10	GND	11	MIPI_DSI_I2C_SCL_3V3	12	MIPI_DSI_I2C_SDA_3V3	13	GND	14	VCC_3V3	15	VCC_3V3	16	GND	17	GND		
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15	VCC_3V3	16	GND																																						
17	GND																																								
																																									

7 GC-A101 Indicator description

Sign D82	
Description: Carrier power input light	
Sign D79	
Description: System reset indicator	
Sign D78	
Description: Overtemperature warning light (this light is red)	
Sign D80	
Description: System sleep light	
Sign D81	
Description: The module lights on after it is powered on, and turns off after it is powered off	

8 Method of Application

- Make sure all external system voltages are turned off.
- Install necessary external cables.

(such as: the display line connected to the HDMI, the input line for the system power supply, the USB cable connecting the keyboard and mouse...)

- Connect the power cord to the power supply
- The default system is automatically powered on. It can also be set as a switch start, for specific methods, please consult our sales and technician

Order Information

Model	Description
GC-A101	Industrial interface board for Ascend Atlas 200I A2



GC-A101If additional features are extended, please contact us.

Special Instructions

- Initial system username: HwHiAiUser, password: Mind@123.
- If you want to raise rights, use su root to raise rights.