

Product Spec

RB-F220U V1.1

Prepared by : Peter

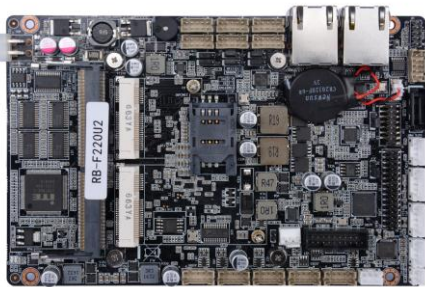
Date: 2017/07/30

Approved by: Jim

Date: 2017/07/30

Revision History			
Revision	Date	Description	Author
V1.0	2017/07/21	First release	liaolin
V1.1	2018/01/30	增加产品图片标识	liufg

RB-F220U


REALBOM


Features

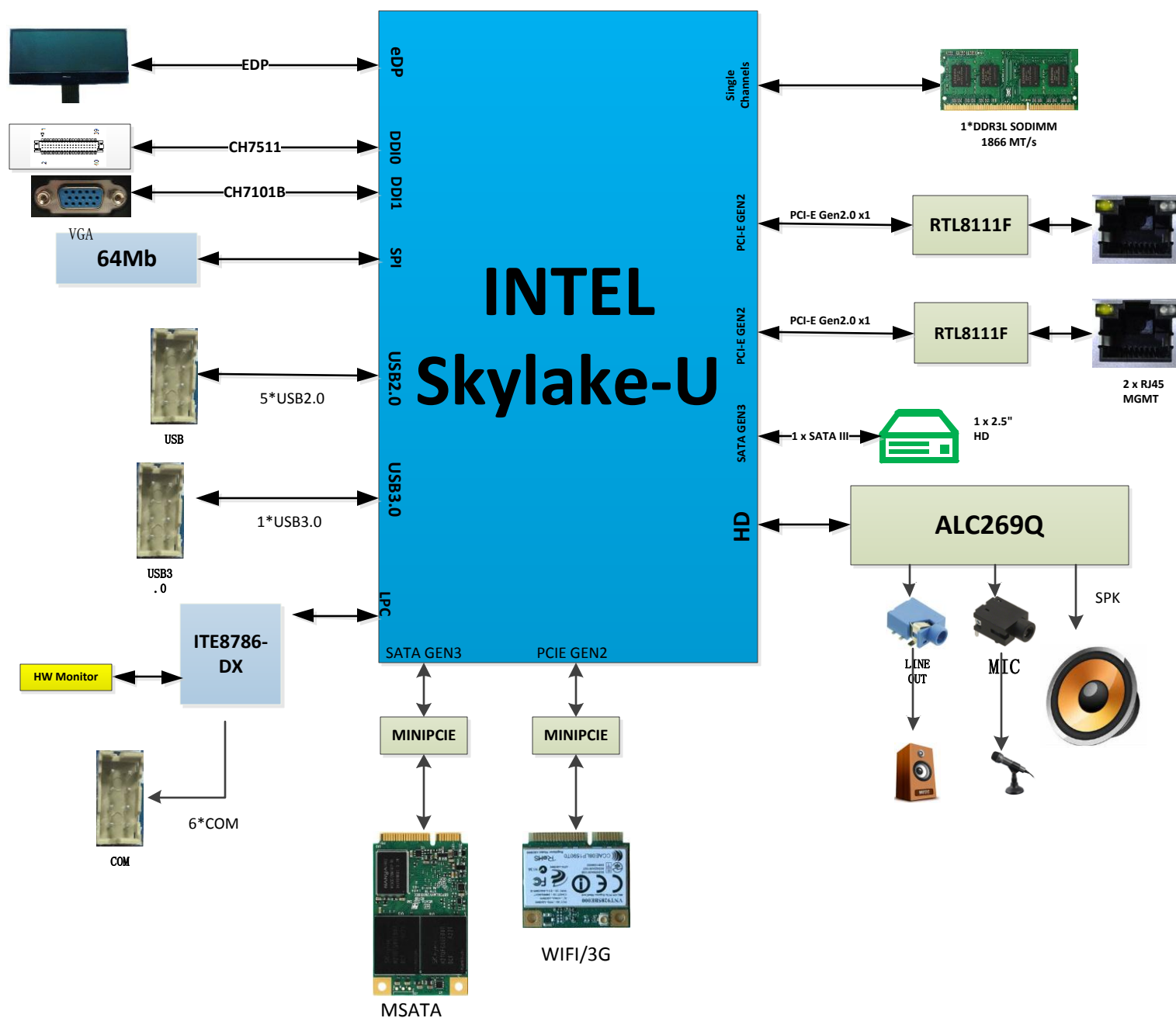
- *Intel Skylake-U Platform, I7-7500U/I5-6200U/I3-6100U/3855U CPU
- *Supports 3 independent Display
- *Supports 2 X 10/100/1000M LAN adapter
- *Support 10 X USB2.0 + 2XUSB3.0
- *Support 6 X RS232 COMs, 1 X SATAIII, 1 X MSATA , 1 X WIFI/4G LTE
- *Support HD Audio , 1 X Line out, 1X MIC in,1X SPEAKER
- *Support 12~24V DC Adapter
- *One 260-pin SODIMM up to16GB, DDR4 2133 MHz

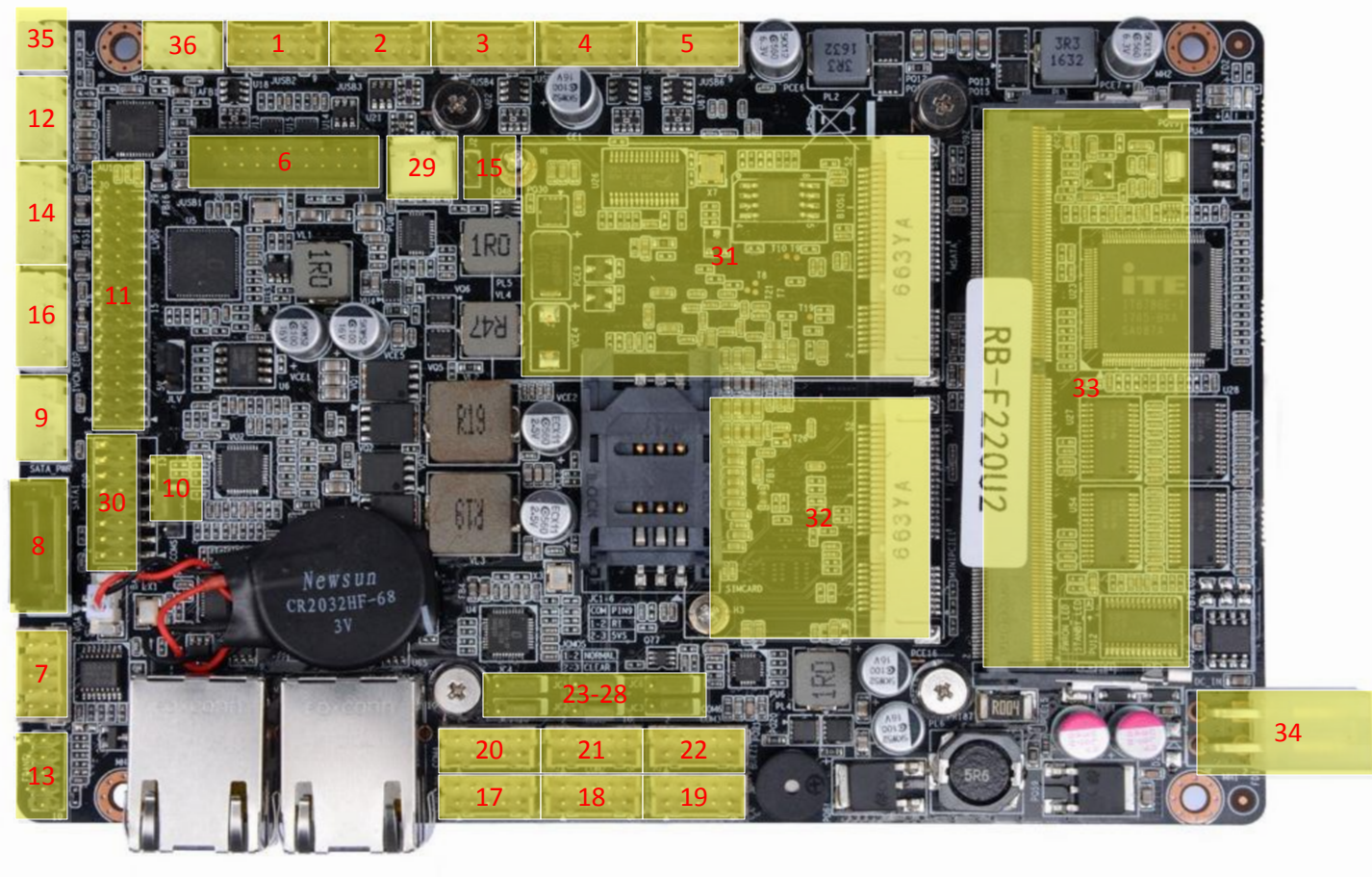
Application Industry

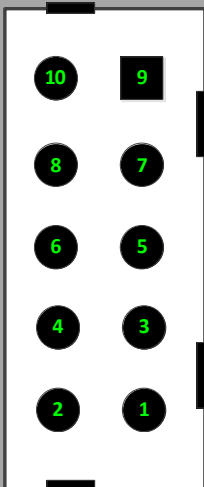
Medical industry.Traffic industry, Advertising Machine,Financial industry,

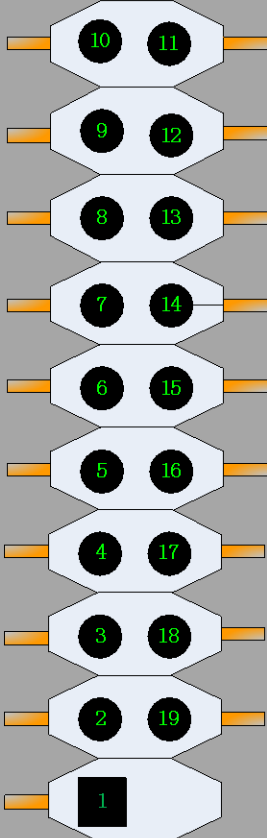
Specifications

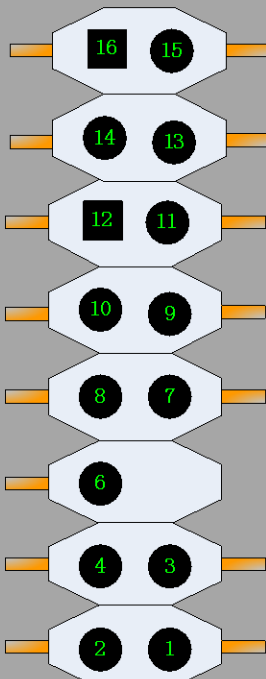
CPU	CPU	Intel Skylake-U Platform, I5-6200U/3855U CPU
	Instruction Set	64bit
	Lithography	14nm
	Frequency	I5-6200U:2.3GHz~2.8GHz 3855U:1.6GHz
Memory	Type	SODIMM DDR4 No ECC ,1866/2133 MHz
	Channel	1C1P
	Max Memory Size	16GB
Graphics	Graphics	Intel HD Graphics
	Graphics Frequency	300 MHz - 1GHz
	Displays Supported	3 Independent Display (1 x EDP,1 x LVDS,1 x VGA)
Audio	ALC269Q HD Audio	x1 line out,x1 MIC in,x1 Speaker
Ethernet	RTL8111F	x2 10/100/1000M BASET LAN
Internal Connector	SIM	x1 Standard Sim Socket
	SATA	x1 MSATA/SATA 7PIN
	WIFI/4G	x1 MINIPCIE
	COM	x6 COM1-COM6 RS232 2x5 Wafer
	VGA	x1 2x8 Header
	SATA-PWR	x1 1*4PIN 2.0mm wafer
	USB	x5 2*5PIN 2.0mm wafer + x1 USB3.0 CONN
	AUDIO	x1 lineout 1*4PIN 2.0mm wafer ;x1 MIC 1*2Pin wafer
	SPEAKER	x1 1*4PIN 2.0mm wafer
	IVCN_LVDS	x1 1*5PIN 2.0mm wafer
	IVCN_EDP	x1 1*5PIN 2.0mm wafer
	LVDS	x1 2*15PIN 2.0mm header
	EDP	x1 2*8PIN 2.0mm header
	GPIO	NA
I/O	DC JACK	x1 12~24V, ATX_2X2P
	RJ45	x2 Single RJ45
BIOS	Vender	AMI
Power	POWER Brick	12~24V DC POWER Brick
Dimensions	PCB	156*102MM
Requirements	Operation	-10℃~+60℃, 10%~95% RTH
Environment	Storeage	-40℃~+85℃, 10%~95% RTH

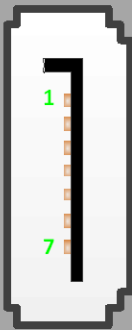


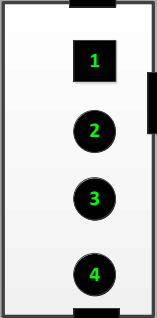


USB	(JUSB2/JUSB3/JUSB4/JUSB5/JUSB6) 1 2 3 4 5																				
PIN Define	 <table><tr><td>1</td><td>VCC</td><td>2</td><td>VCC</td></tr><tr><td>3</td><td>D-</td><td>4</td><td>D-</td></tr><tr><td>5</td><td>D+</td><td>6</td><td>D+</td></tr><tr><td>7</td><td>GND</td><td>8</td><td>GND</td></tr><tr><td>9</td><td>GND</td><td>10</td><td>GND</td></tr></table>	1	VCC	2	VCC	3	D-	4	D-	5	D+	6	D+	7	GND	8	GND	9	GND	10	GND
1	VCC	2	VCC																		
3	D-	4	D-																		
5	D+	6	D+																		
7	GND	8	GND																		
9	GND	10	GND																		
Type	2X5 Header Box PH=2.0 mm																				

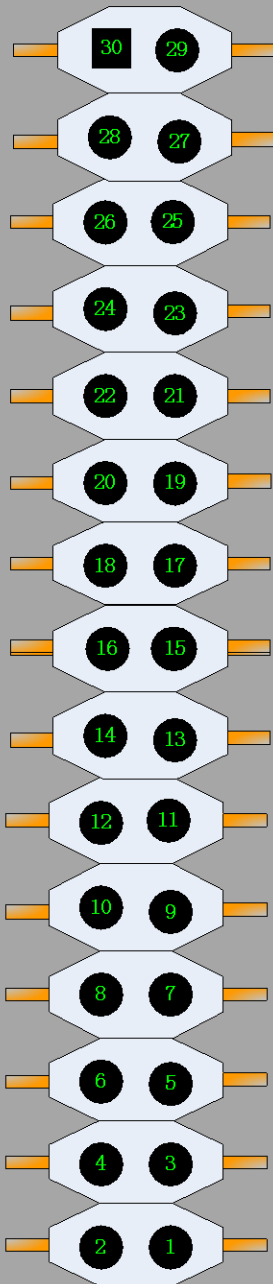
USB3. 0	JUSB1 6																																								
PIN Define	 <table><tr><td>10</td><td>ID</td><td>11</td><td>D2+</td></tr><tr><td>9</td><td>D1+</td><td>12</td><td>D2-</td></tr><tr><td>8</td><td>D1-</td><td>13</td><td>GND</td></tr><tr><td>7</td><td>GND</td><td>14</td><td>TX2+</td></tr><tr><td>6</td><td>TX+</td><td>15</td><td>TX2-</td></tr><tr><td>5</td><td>TX1-</td><td>16</td><td>GND</td></tr><tr><td>4</td><td>GND</td><td>17</td><td>RX2+</td></tr><tr><td>3</td><td>RX1+</td><td>18</td><td>RX2-</td></tr><tr><td>2</td><td>RX1-</td><td>19</td><td>VCC2</td></tr><tr><td>1</td><td>VCC1</td><td></td><td></td></tr></table>	10	ID	11	D2+	9	D1+	12	D2-	8	D1-	13	GND	7	GND	14	TX2+	6	TX+	15	TX2-	5	TX1-	16	GND	4	GND	17	RX2+	3	RX1+	18	RX2-	2	RX1-	19	VCC2	1	VCC1		
10	ID	11	D2+																																						
9	D1+	12	D2-																																						
8	D1-	13	GND																																						
7	GND	14	TX2+																																						
6	TX+	15	TX2-																																						
5	TX1-	16	GND																																						
4	GND	17	RX2+																																						
3	RX1+	18	RX2-																																						
2	RX1-	19	VCC2																																						
1	VCC1																																								
Type	2x6 DuPont Header, PH=2.0mm																																								

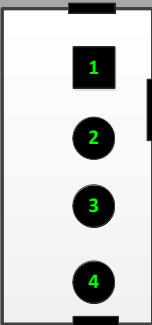
VGA	(JVGA) 7																																
PIN Define	 <table><tr><td>1</td><td>Rout</td><td>2</td><td>GND</td></tr><tr><td>3</td><td>GVCC</td><td>4</td><td>Gout</td></tr><tr><td>5</td><td>NC</td><td>6</td><td>SDA</td></tr><tr><td>7</td><td>Bout</td><td>8</td><td>GND</td></tr><tr><td>9</td><td>HSYNC</td><td>10</td><td>GVCC</td></tr><tr><td>11</td><td>GVCC</td><td>12</td><td>VSYNC</td></tr><tr><td>13</td><td>GND</td><td>14</td><td>GND</td></tr><tr><td>15</td><td>SCL</td><td>16</td><td>NC</td></tr></table>	1	Rout	2	GND	3	GVCC	4	Gout	5	NC	6	SDA	7	Bout	8	GND	9	HSYNC	10	GVCC	11	GVCC	12	VSYNC	13	GND	14	GND	15	SCL	16	NC
1	Rout	2	GND																														
3	GVCC	4	Gout																														
5	NC	6	SDA																														
7	Bout	8	GND																														
9	HSYNC	10	GVCC																														
11	GVCC	12	VSYNC																														
13	GND	14	GND																														
15	SCL	16	NC																														
Type	2x8 DuPont Header, PH=2.54mm																																

SATA	SATA 8														
PIN Define	 <table> <tr><td>1</td><td>GND</td></tr> <tr><td>2</td><td>TX+</td></tr> <tr><td>3</td><td>TX-</td></tr> <tr><td>4</td><td>GND</td></tr> <tr><td>5</td><td>RX-</td></tr> <tr><td>6</td><td>RX+</td></tr> <tr><td>7</td><td>GND</td></tr> </table>	1	GND	2	TX+	3	TX-	4	GND	5	RX-	6	RX+	7	GND
1	GND														
2	TX+														
3	TX-														
4	GND														
5	RX-														
6	RX+														
7	GND														
Type	7PIN Standard SATA														

SATA PWR	SATA_PWR 9								
PIN Define	 <table> <tr><td>1</td><td>5V</td></tr> <tr><td>2</td><td>GND</td></tr> <tr><td>3</td><td>GND</td></tr> <tr><td>4</td><td>12V</td></tr> </table>	1	5V	2	GND	3	GND	4	12V
1	5V								
2	GND								
3	GND								
4	12V								
Type	1x2 Wafer Box PH=2.0 mm								

JCMOS	JCMOS1	10									
接口定义		<table><tr><th>Pin</th><th>1-2</th><th>2-3</th></tr><tr><td>Define</td><td>Normal</td><td>Clear CMOS</td></tr><tr><td>Default</td><td colspan="2">1-2</td></tr></table>	Pin	1-2	2-3	Define	Normal	Clear CMOS	Default	1-2	
Pin	1-2	2-3									
Define	Normal	Clear CMOS									
Default	1-2										
Type	1x3 DuPont Header PH=2.0mm										

LVDS	(LVDS) 11																																																												
PIN Define	 <table><tr><td>1</td><td>LCDVDD</td><td>2</td><td>LCDVDD</td></tr><tr><td>3</td><td>LCDVDD</td><td>4</td><td>NC</td></tr><tr><td>5</td><td>GND</td><td>6</td><td>NC</td></tr><tr><td>7</td><td>A0M</td><td>8</td><td>A0P</td></tr><tr><td>9</td><td>A1M</td><td>10</td><td>A1P</td></tr><tr><td>11</td><td>A2M</td><td>12</td><td>A2P</td></tr><tr><td>13</td><td>GND</td><td>14</td><td>GND</td></tr><tr><td>15</td><td>CLK1M</td><td>16</td><td>CLK1P</td></tr><tr><td>17</td><td>A3M</td><td>18</td><td>A3P</td></tr><tr><td>19</td><td>A4M</td><td>20</td><td>A4P</td></tr><tr><td>21</td><td>A5M</td><td>22</td><td>A5P</td></tr><tr><td>23</td><td>A6M</td><td>24</td><td>A6P</td></tr><tr><td>25</td><td>GND</td><td>26</td><td>GND</td></tr><tr><td>27</td><td>CLK2M</td><td>28</td><td>CLK2P</td></tr><tr><td>29</td><td>A7M</td><td>30</td><td>A7P</td></tr></table>	1	LCDVDD	2	LCDVDD	3	LCDVDD	4	NC	5	GND	6	NC	7	A0M	8	A0P	9	A1M	10	A1P	11	A2M	12	A2P	13	GND	14	GND	15	CLK1M	16	CLK1P	17	A3M	18	A3P	19	A4M	20	A4P	21	A5M	22	A5P	23	A6M	24	A6P	25	GND	26	GND	27	CLK2M	28	CLK2P	29	A7M	30	A7P
1	LCDVDD	2	LCDVDD																																																										
3	LCDVDD	4	NC																																																										
5	GND	6	NC																																																										
7	A0M	8	A0P																																																										
9	A1M	10	A1P																																																										
11	A2M	12	A2P																																																										
13	GND	14	GND																																																										
15	CLK1M	16	CLK1P																																																										
17	A3M	18	A3P																																																										
19	A4M	20	A4P																																																										
21	A5M	22	A5P																																																										
23	A6M	24	A6P																																																										
25	GND	26	GND																																																										
27	CLK2M	28	CLK2P																																																										
29	A7M	30	A7P																																																										
Type	2x15 DuPont Header, PH=2.0mm																																																												

Speaker	(F_SPK) 12								
PIN Define	 <table><tr><td>1</td><td>L-</td></tr><tr><td>2</td><td>L+</td></tr><tr><td>3</td><td>R+</td></tr><tr><td>4</td><td>R-</td></tr></table>	1	L-	2	L+	3	R+	4	R-
1	L-								
2	L+								
3	R+								
4	R-								
Type	1x4 Wafer Box PH=2.0 mm								

F_PANEL	(ON_LED) 13								
PIN Define	 <table><tr><td>1</td><td>PWRBTN</td></tr><tr><td>2</td><td>GND</td></tr><tr><td>3</td><td>VCC</td></tr><tr><td>4</td><td>GND</td></tr></table>	1	PWRBTN	2	GND	3	VCC	4	GND
1	PWRBTN								
2	GND								
3	VCC								
4	GND								
Type	1x4 Wafer Box PH=2.0 mm								

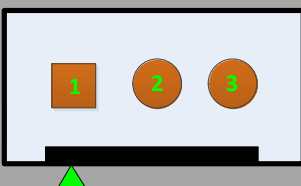
IVCN	(IVCN_LVDS) 14										
PIN Define	 <table><tr><td>1</td><td>12V</td></tr><tr><td>2</td><td>GND</td></tr><tr><td>3</td><td>BKLT_ON</td></tr><tr><td>4</td><td>BKLT_PWM</td></tr><tr><td>5</td><td>5V</td></tr></table>	1	12V	2	GND	3	BKLT_ON	4	BKLT_PWM	5	5V
1	12V										
2	GND										
3	BKLT_ON										
4	BKLT_PWM										
5	5V										
Type	1x5 Wafer Box PH=2.0 mm										

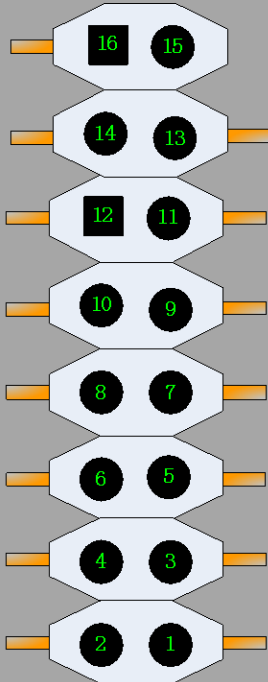
JME	JME 15						
接口定义	 <table><tr><td>Pin</td><td>1-2</td></tr><tr><td>Define</td><td>ENABLE</td></tr><tr><td>Default</td><td>NC</td></tr></table>	Pin	1-2	Define	ENABLE	Default	NC
Pin	1-2						
Define	ENABLE						
Default	NC						
Type	1x2 DuPont Header PH=2.0mm						

IVCN	(IVCN_EDP) 16										
PIN Define	 <table border="1"> <tr><td>1</td><td>12V</td></tr> <tr><td>2</td><td>GND</td></tr> <tr><td>3</td><td>BKLT_ON</td></tr> <tr><td>4</td><td>BKLT_PWM</td></tr> <tr><td>5</td><td>5V</td></tr> </table>	1	12V	2	GND	3	BKLT_ON	4	BKLT_PWM	5	5V
1	12V										
2	GND										
3	BKLT_ON										
4	BKLT_PWM										
5	5V										
Type	1x5 Wafer Box PH=2.0 mm										

COM	(COM1/COM2/COM3/COM4/COM5/COM6) 171819202122																									
PIN Define	10 9 8 7 6 5 4 3 2 1 <table><tr><td>1</td><td>DCD</td><td>2</td><td>RXD</td></tr><tr><td>3</td><td>TXD</td><td>4</td><td>DTR</td></tr><tr><td>5</td><td>GND</td><td>6</td><td>DSR</td></tr><tr><td>7</td><td>RTS</td><td>8</td><td>CTS</td></tr><tr><td>9</td><td>S_RI</td><td>10</td><td>NC</td></tr></table>						1	DCD	2	RXD	3	TXD	4	DTR	5	GND	6	DSR	7	RTS	8	CTS	9	S_RI	10	NC
1	DCD	2	RXD																							
3	TXD	4	DTR																							
5	GND	6	DSR																							
7	RTS	8	CTS																							
9	S_RI	10	NC																							
Type	2X5 Header Box PH=2.0 mm																									

JC	(JC1/JC2/JC3/JC4/JC5/JC6) 23 24 25 26 27 28													
接口定义		<table><tr><td>Pin</td><td>3</td><td>2</td><td>1</td></tr><tr><td>Define</td><td>5V</td><td>S_RI</td><td>RI</td></tr><tr><td>Default</td><td colspan="3">1-2</td></tr></table>	Pin	3	2	1	Define	5V	S_RI	RI	Default	1-2		
Pin	3	2	1											
Define	5V	S_RI	RI											
Default	1-2													
Type	1x3 DuPont Header PH=2.0mm													

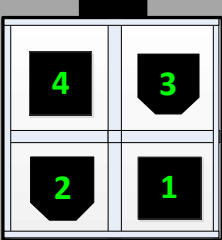
SYS_FAN	System Fan Power and sense 29						
PIN Define	 <table border="1"> <tr><td>1</td><td>GND</td></tr> <tr><td>2</td><td>12V</td></tr> <tr><td>3</td><td>FAN_TAC</td></tr> </table>	1	GND	2	12V	3	FAN_TAC
1	GND						
2	12V						
3	FAN_TAC						
Type	1X3 FDC Connector, PH=2.54mm						

EDP	EDP 30																																
PIN Define	 <table><tr><td>1</td><td>3.3V</td><td>2</td><td>3.3V</td></tr><tr><td>3</td><td>GND</td><td>4</td><td>GND</td></tr><tr><td>5</td><td>TXP0</td><td>6</td><td>TXP1</td></tr><tr><td>7</td><td>TXN0</td><td>8</td><td>TXN1</td></tr><tr><td>9</td><td>GND</td><td>10</td><td>GND</td></tr><tr><td>11</td><td>AUXP</td><td>12</td><td>HPD</td></tr><tr><td>13</td><td>AUXN</td><td>14</td><td>GND</td></tr><tr><td>15</td><td>NC</td><td>16</td><td>GND</td></tr></table>	1	3.3V	2	3.3V	3	GND	4	GND	5	TXP0	6	TXP1	7	TXN0	8	TXN1	9	GND	10	GND	11	AUXP	12	HPD	13	AUXN	14	GND	15	NC	16	GND
1	3.3V	2	3.3V																														
3	GND	4	GND																														
5	TXP0	6	TXP1																														
7	TXN0	8	TXN1																														
9	GND	10	GND																														
11	AUXP	12	HPD																														
13	AUXN	14	GND																														
15	NC	16	GND																														
Type	2x8 DuPont Header, PH=2.54mm																																

Msata	Msata 31
PIN Define	标准接口
Type	1*Mini-PCIE 接口

MiniPCIE	Wifi/4G 32
PIN Define	标准接口
Type	1*Mini-PCIE 接口，支持 wifi 卡/4G

DIMM1	DDR4 So-DIMM 内存槽 33
PIN Define	标准接口
Type	1*260pin DDR4 SO-DIMM

DC-PWR	DC IN 12-24V 34								
PIN Define	<table><tr><td>1</td><td>GND</td></tr><tr><td>2</td><td>GND</td></tr><tr><td>3</td><td>DC+</td></tr><tr><td>4</td><td>DC+</td></tr></table>	1	GND	2	GND	3	DC+	4	DC+
1	GND								
2	GND								
3	DC+								
4	DC+								
Type	DC IN Standard 4 pin connector								

Mic	Mic IN 35				
PIN Define	<table><tr><td>1</td><td>GND</td></tr><tr><td>2</td><td>Mic IN</td></tr></table>	1	GND	2	Mic IN
1	GND				
2	Mic IN				
Type	1x2 Wafer Box PH=2.0 mm				

LINE_OUT	LINE_OUT 36						
PIN Define	1 2 3 <table><tr><td>1</td><td>GND</td></tr><tr><td>2</td><td>LINE OUT_R</td></tr><tr><td>3</td><td>LINE OUT_L</td></tr></table>	1	GND	2	LINE OUT_R	3	LINE OUT_L
1	GND						
2	LINE OUT_R						
3	LINE OUT_L						
Type	1x4 Wafer Box PH=2.0 mm						