

Product Spec

Motherboard

RB-F213 V1.0

Prepared by : TONY

Date: 2018/07/20

Approved by: PETER

Date: 2018/07/20

Revision History			
Revision	Date	Description	Author
V1.0	2018/07/20	First release	TONY



Features

- *Intel Coffee lake LGA1151 Platform, H370 PCH
- *Supports 5 Display;2xVGA+1xHDMI+1xEDP+1xJVGA
- *Supports 2 X 10/100/1000M LAN adapter
- *Supports 4 X USB3.0, 8 X USB2.0
- *Supports 10 X COMs, 3 X SATAIII, 1 X 4G , 1 X WIFI ,
- *Supports HD Audio , 1 X Line out,1 X MIC IN
- *TWO 288-pin UDIMM up to 32GB, DDR4 2666

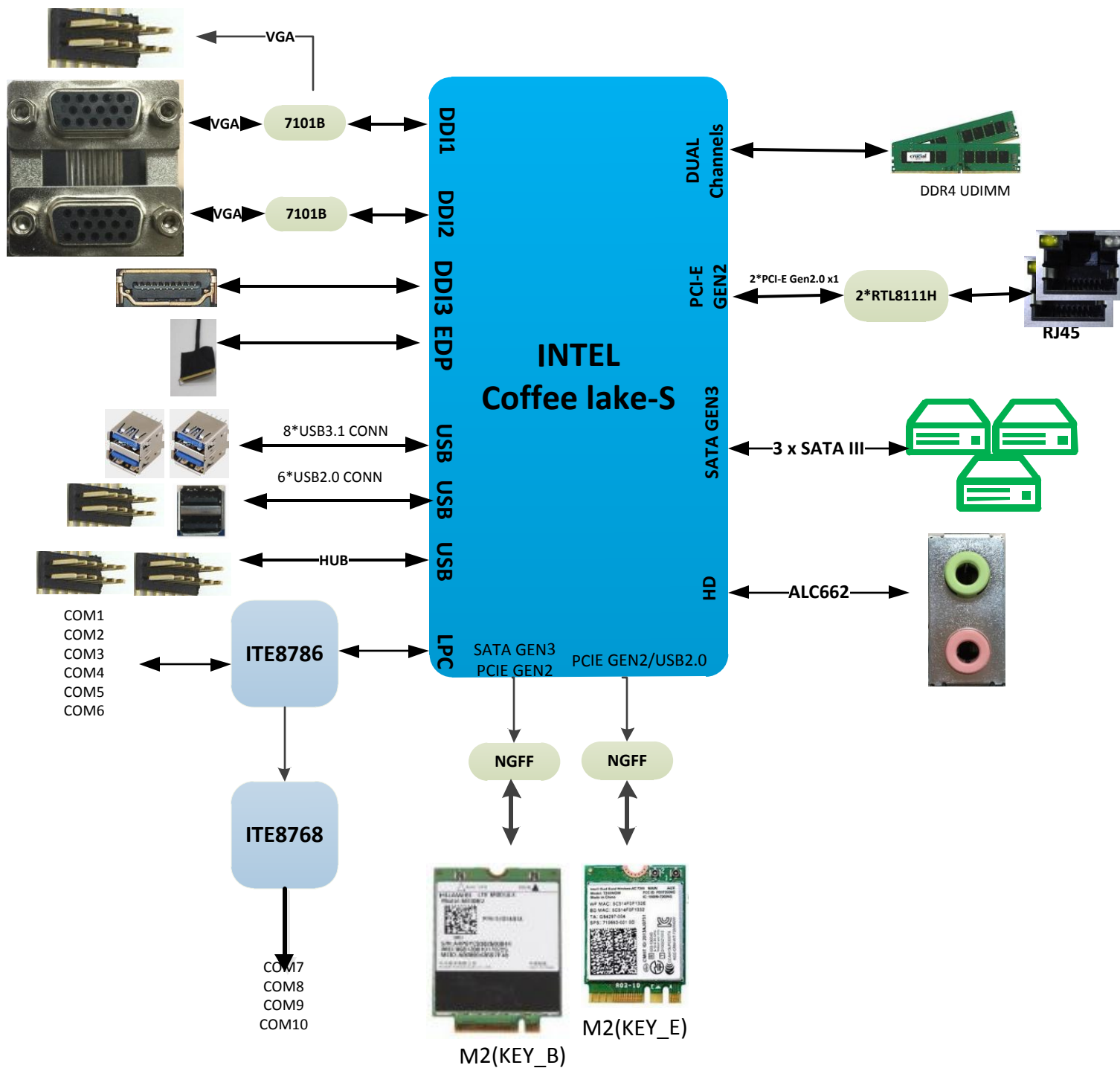


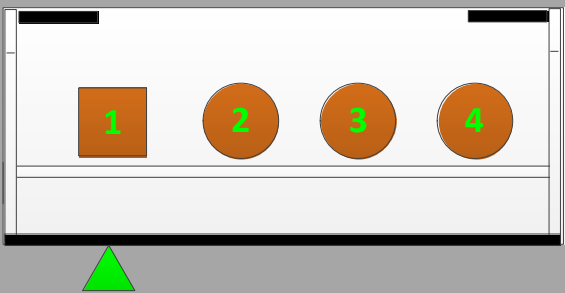
Application Industry

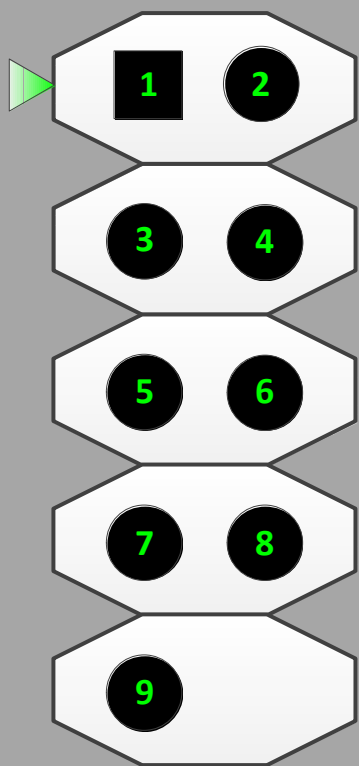
POS industry.Traffic industry, Advertising Machine,Financial industry,

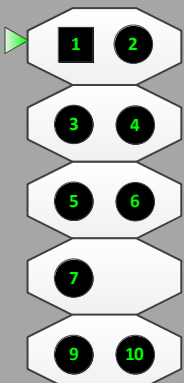
Specifications

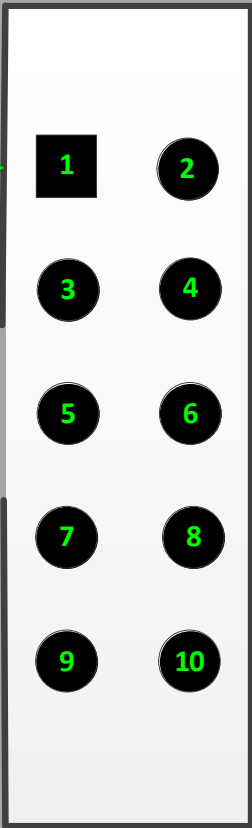
Memory	Type	UDIMM DDR4 No ECC 、 Support up to 2133MT/s
	Channel	DUAL
	Max Memory Size	32G
Graphics	Displays	5 Display (2*VGA +1*JVGA+ 1*HDMI+1*EDP)
Audio	ALC662 HD Audio	X2 Audio line out, x2 Audio Mic in
Ethernet	RTL8111F	x2 10/100/1000M BASET LAN
Internal Connector	FAN	1*CPU_FAN+1*SYS_FAN
	AUDIO	1*2x5 Header 1*Line out+1*MIC IN
	WIFI	x1 M. 2 KEY_E connector(2230)
	COM	X2 2x18 Header Box;COM3/4/5/6/7/8/9/10 (完整信号)
	EDP	X1 2X8 Header BOX
	USB	X3 2X5 PIN Header;
	4G/SSD	X1 M. 2 KEY_B connector(2242)
	SATA PWR	X1 1X4 PIN wafer
	SATA	X3 标准 7PIN SATA 接口
	PCIE-16X	X1 PCIE-16X connector
	Power	X1 ATX_PWR 2X10PIN + ATX 2X2PIN
	JVGA	X1 2X5 PIN Header
I/O	LAN&USB	X2 1000M RJ45+2*USB3.0
	VGA	X2 2*DB15
	HDMI&USB	X1 HDMI+2*USB2.0
	COM	X2 2*DB9
	Aduio	x1 Mic in + Line out
BIOS	Vender	AMI
	ACPI	Supported
Power	POWER Brick	ATX_PWR 2X10PIN + ATX 2X2PIN
Dimensions	PCB	170*170MM

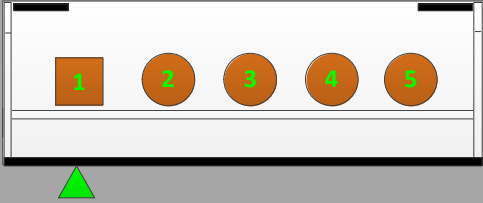


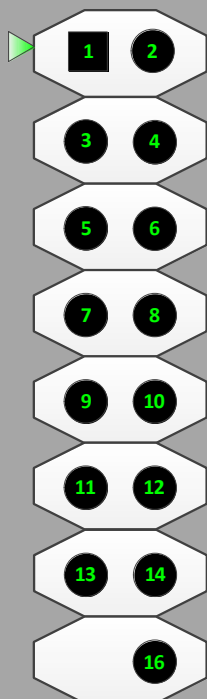
	SATAPWR								
PIN Define	 <table><tr><td>1</td><td>12V</td></tr><tr><td>2</td><td>GND</td></tr><tr><td>3</td><td>GND</td></tr><tr><td>4</td><td>5V</td></tr></table>	1	12V	2	GND	3	GND	4	5V
1	12V								
2	GND								
3	GND								
4	5V								
Type	1X4PIN PH=2.54MM								

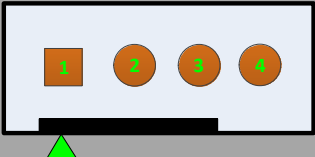
JUSB1/JUSB2/JUSB3																					
PIN Define																					
	<table><tr><td>1</td><td>5V</td><td>2</td><td>5V</td></tr><tr><td>3</td><td>-DATA1</td><td>4</td><td>-DATA2</td></tr><tr><td>5</td><td>+DATA1</td><td>6</td><td>+DATA2</td></tr><tr><td>7</td><td>GND</td><td>8</td><td>GND</td></tr><tr><td>9</td><td>GND</td><td></td><td></td></tr></table>	1	5V	2	5V	3	-DATA1	4	-DATA2	5	+DATA1	6	+DATA2	7	GND	8	GND	9	GND		
	1	5V	2	5V																	
	3	-DATA1	4	-DATA2																	
	5	+DATA1	6	+DATA2																	
7	GND	8	GND																		
9	GND																				
Type	2X5 PIN PH=2.00MM 缺 PIN10																				

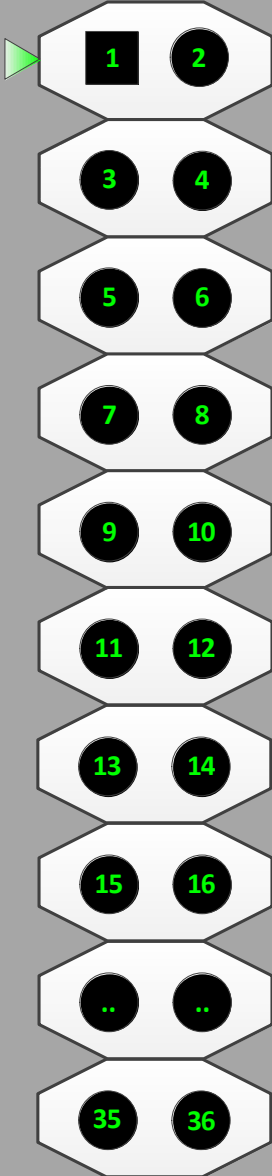
	F_AUDIO																				
PIN Define	 <table><tr><td>1</td><td>MIC2-L</td><td>2</td><td>AGND</td></tr><tr><td>3</td><td>MIC2-R</td><td>4</td><td>3.3V</td></tr><tr><td>5</td><td>LINE2-R</td><td>6</td><td>MIC2-JD</td></tr><tr><td>7</td><td>AGND</td><td>8</td><td></td></tr><tr><td>9</td><td>LINE2-L</td><td>10</td><td>LINE2-JD</td></tr></table>	1	MIC2-L	2	AGND	3	MIC2-R	4	3.3V	5	LINE2-R	6	MIC2-JD	7	AGND	8		9	LINE2-L	10	LINE2-JD
1	MIC2-L	2	AGND																		
3	MIC2-R	4	3.3V																		
5	LINE2-R	6	MIC2-JD																		
7	AGND	8																			
9	LINE2-L	10	LINE2-JD																		
Type	2x5 DuPont Header, PH=2.54mm. PIN8 NC																				
Memo	AUDIO 插针																				

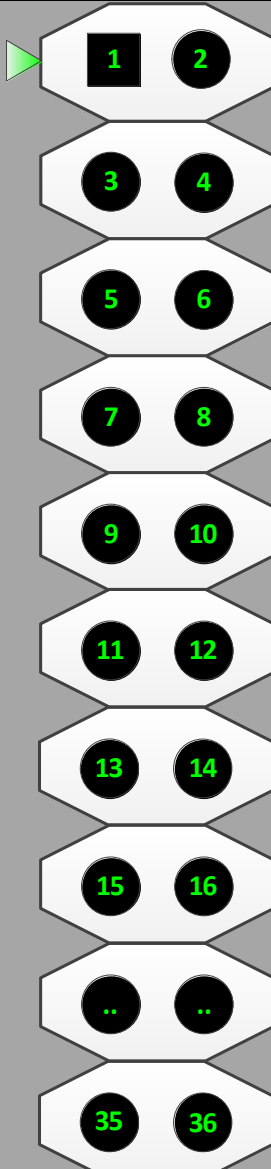
	JVGA																								
PIN Define																									
		<table><tr><td>1</td><td>GND</td><td>2</td><td>VGA_SDA</td></tr><tr><td>3</td><td>ROUT</td><td>4</td><td>VGA_SCL</td></tr><tr><td>5</td><td>GOUT</td><td>6</td><td>VGA_VSYNC</td></tr><tr><td>7</td><td>BOUT</td><td>8</td><td>VGA_HSYNC</td></tr><tr><td>9</td><td>GND</td><td>10</td><td>5V</td></tr></table>				1	GND	2	VGA_SDA	3	ROUT	4	VGA_SCL	5	GOUT	6	VGA_VSYNC	7	BOUT	8	VGA_HSYNC	9	GND	10	5V
		1	GND	2	VGA_SDA																				
		3	ROUT	4	VGA_SCL																				
		5	GOUT	6	VGA_VSYNC																				
7	BOUT	8	VGA_HSYNC																						
9	GND	10	5V																						
Type	2X5 Header Box PH=2.0 mm																								

	IVCN_eDP										
PIN Define	 <table border="1"> <tr><td>1</td><td>+V12S</td></tr> <tr><td>2</td><td>GND</td></tr> <tr><td>3</td><td>BLKT_ON</td></tr> <tr><td>4</td><td>BLKT_PWM</td></tr> <tr><td>5</td><td>+V5S</td></tr> </table>	1	+V12S	2	GND	3	BLKT_ON	4	BLKT_PWM	5	+V5S
1	+V12S										
2	GND										
3	BLKT_ON										
4	BLKT_PWM										
5	+V5S										
Type	1X5 Wafer, PH=2.0mm										
Memo	IVCN for EDP										

	EDP																																
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>EDP_DET</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></td><td></td><td>16</td><td>GND</td></tr></table>	1	3.3V	2	3.3V	3	GND	4	EDP_DET	5	TXP0	6	TXP1	7	TXN0	8	TXN1	9	GND	10	GND	11	AUXP	12	HPD	13	AUXN	14	GND			16	GND
1	3.3V	2	3.3V																														
3	GND	4	EDP_DET																														
5	TXP0	6	TXP1																														
7	TXN0	8	TXN1																														
9	GND	10	GND																														
11	AUXP	12	HPD																														
13	AUXN	14	GND																														
		16	GND																														
Type	2x8 DuPont Header, PH=2.0mm																																
Memo	缺 PIN15																																

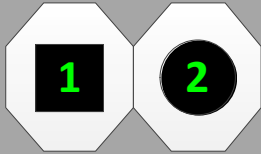
FAN	SYS_FAN/CPU_FAN									
PIN Define		<table><tr><td>1</td><td>GND</td></tr><tr><td>2</td><td>+V12_FAN</td></tr><tr><td>3</td><td>FAN_TAC</td></tr><tr><td>4</td><td>FAN_CTL</td></tr></table>	1	GND	2	+V12_FAN	3	FAN_TAC	4	FAN_CTL
1	GND									
2	+V12_FAN									
3	FAN_TAC									
4	FAN_CTL									
Type	1X4 FAN Connector, PH=2.54mm									

	COM3-6																																																																											
PIN Define			<table><tr><td>1</td><td>DCD3</td><td>2</td><td>RXD3</td></tr><tr><td>3</td><td>TXD3</td><td>4</td><td>DTR3</td></tr><tr><td>5</td><td>GND</td><td>6</td><td>DSR3</td></tr><tr><td>7</td><td>RTS3</td><td>8</td><td>CTS3</td></tr><tr><td>9</td><td>RI3</td><td>10</td><td>DCD4</td></tr><tr><td>11</td><td>RXD4</td><td>12</td><td>TXD4</td></tr><tr><td>13</td><td>DTR4</td><td>14</td><td>GND</td></tr><tr><td>15</td><td>DSR4</td><td>16</td><td>RTS4</td></tr><tr><td>17</td><td>CTS4</td><td>18</td><td>RI4</td></tr><tr><td>19</td><td>DCD5</td><td>20</td><td>RXD5</td></tr><tr><td>21</td><td>TXD5</td><td>22</td><td>DTR5</td></tr><tr><td>23</td><td>GND</td><td>24</td><td>DSR5</td></tr><tr><td>25</td><td>RTS5</td><td>26</td><td>CTS5</td></tr><tr><td>27</td><td>RI5</td><td>28</td><td>DCD6</td></tr><tr><td>29</td><td>RXD6</td><td>30</td><td>TXD6</td></tr><tr><td>31</td><td>DTR6</td><td>32</td><td>GND</td></tr><tr><td>33</td><td>DSR6</td><td>34</td><td>RTS6</td></tr><tr><td>35</td><td>CTS6</td><td>36</td><td>RI6</td></tr></table>		1	DCD3	2	RXD3	3	TXD3	4	DTR3	5	GND	6	DSR3	7	RTS3	8	CTS3	9	RI3	10	DCD4	11	RXD4	12	TXD4	13	DTR4	14	GND	15	DSR4	16	RTS4	17	CTS4	18	RI4	19	DCD5	20	RXD5	21	TXD5	22	DTR5	23	GND	24	DSR5	25	RTS5	26	CTS5	27	RI5	28	DCD6	29	RXD6	30	TXD6	31	DTR6	32	GND	33	DSR6	34	RTS6	35	CTS6	36	RI6
	1	DCD3	2	RXD3																																																																								
	3	TXD3	4	DTR3																																																																								
	5	GND	6	DSR3																																																																								
	7	RTS3	8	CTS3																																																																								
	9	RI3	10	DCD4																																																																								
	11	RXD4	12	TXD4																																																																								
	13	DTR4	14	GND																																																																								
	15	DSR4	16	RTS4																																																																								
	17	CTS4	18	RI4																																																																								
19	DCD5	20	RXD5																																																																									
21	TXD5	22	DTR5																																																																									
23	GND	24	DSR5																																																																									
25	RTS5	26	CTS5																																																																									
27	RI5	28	DCD6																																																																									
29	RXD6	30	TXD6																																																																									
31	DTR6	32	GND																																																																									
33	DSR6	34	RTS6																																																																									
35	CTS6	36	RI6																																																																									
Type	2x18 DuPont Header, PH=2.0mm																																																																											

	COM7-10																																																																											
PIN Define			<table><tr><td>1</td><td>DCD7</td><td>2</td><td>RXD7</td></tr><tr><td>3</td><td>TXD7</td><td>4</td><td>DTR7</td></tr><tr><td>5</td><td>GND</td><td>6</td><td>DSR7</td></tr><tr><td>7</td><td>RTS7</td><td>8</td><td>CTS7</td></tr><tr><td>9</td><td>RI7</td><td>10</td><td>DCD8</td></tr><tr><td>11</td><td>RXD8</td><td>12</td><td>TXD8</td></tr><tr><td>13</td><td>DTR8</td><td>14</td><td>GND</td></tr><tr><td>15</td><td>DSR8</td><td>16</td><td>RTS8</td></tr><tr><td>17</td><td>CTS8</td><td>18</td><td>RI8</td></tr><tr><td>19</td><td>DCD9</td><td>20</td><td>RXD9</td></tr><tr><td>21</td><td>TXD9</td><td>22</td><td>DTR9</td></tr><tr><td>23</td><td>GND</td><td>24</td><td>DSR9</td></tr><tr><td>25</td><td>RTS9</td><td>26</td><td>CTS9</td></tr><tr><td>27</td><td>RI9</td><td>28</td><td>DCD10</td></tr><tr><td>29</td><td>RXD10</td><td>30</td><td>TXD10</td></tr><tr><td>31</td><td>DTR10</td><td>32</td><td>GND</td></tr><tr><td>33</td><td>DSR10</td><td>34</td><td>RTS10</td></tr><tr><td>35</td><td>CTS10</td><td>36</td><td>RI10</td></tr></table>		1	DCD7	2	RXD7	3	TXD7	4	DTR7	5	GND	6	DSR7	7	RTS7	8	CTS7	9	RI7	10	DCD8	11	RXD8	12	TXD8	13	DTR8	14	GND	15	DSR8	16	RTS8	17	CTS8	18	RI8	19	DCD9	20	RXD9	21	TXD9	22	DTR9	23	GND	24	DSR9	25	RTS9	26	CTS9	27	RI9	28	DCD10	29	RXD10	30	TXD10	31	DTR10	32	GND	33	DSR10	34	RTS10	35	CTS10	36	RI10
	1	DCD7	2	RXD7																																																																								
	3	TXD7	4	DTR7																																																																								
	5	GND	6	DSR7																																																																								
	7	RTS7	8	CTS7																																																																								
	9	RI7	10	DCD8																																																																								
	11	RXD8	12	TXD8																																																																								
	13	DTR8	14	GND																																																																								
	15	DSR8	16	RTS8																																																																								
	17	CTS8	18	RI8																																																																								
19	DCD9	20	RXD9																																																																									
21	TXD9	22	DTR9																																																																									
23	GND	24	DSR9																																																																									
25	RTS9	26	CTS9																																																																									
27	RI9	28	DCD10																																																																									
29	RXD10	30	TXD10																																																																									
31	DTR10	32	GND																																																																									
33	DSR10	34	RTS10																																																																									
35	CTS10	36	RI10																																																																									
Type	2x18 DuPont Header, PH=2.0mm																																																																											

	JCMOS									
PIN Define	 <table><tr><td>Pin</td><td>1-2</td><td>2-3</td></tr><tr><td>Define</td><td>Normal</td><td>Clear</td></tr><tr><td>Default</td><td colspan="2">1-2</td></tr></table>	Pin	1-2	2-3	Define	Normal	Clear	Default	1-2	
Pin	1-2	2-3								
Define	Normal	Clear								
Default	1-2									
Type	1x3 DuPont Header PH=2.0mm									
Memo	Short 2-3 Clear CMOS									

	JME									
PIN Define	 <table><tr><th>Pin</th><th>1-2</th><th>2-3</th></tr><tr><td>Define</td><td>Normal</td><td>OVERWRITE</td></tr><tr><td>Default</td><td colspan="2">1-2</td></tr></table>	Pin	1-2	2-3	Define	Normal	OVERWRITE	Default	1-2	
Pin	1-2	2-3								
Define	Normal	OVERWRITE								
Default	1-2									
Type	1x3 DuPont Header PH=2.0mm									
Memo	Short 2-3 Take ME Flash									

	PWR_SW
PIN Define	
Type	1x2 DuPont Header PH=2.0mm
Memo	Short 1-2, Power on