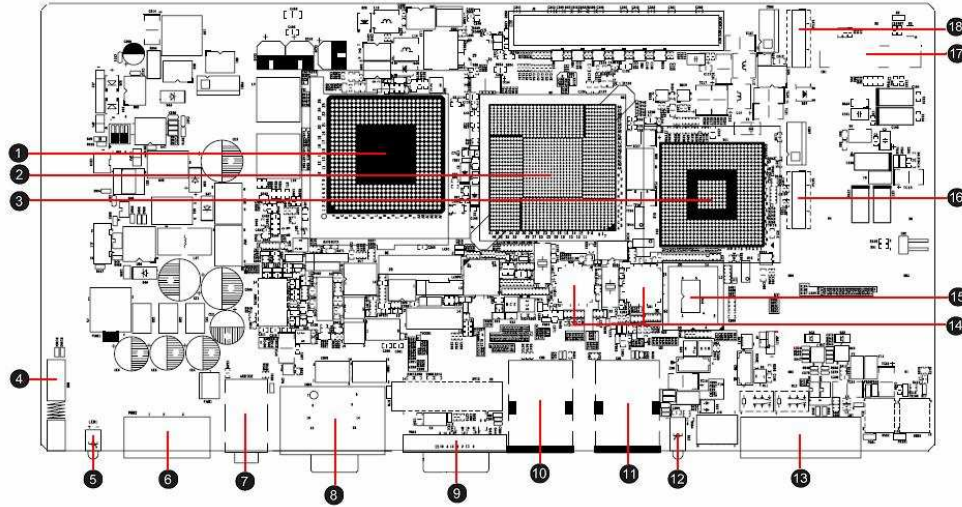


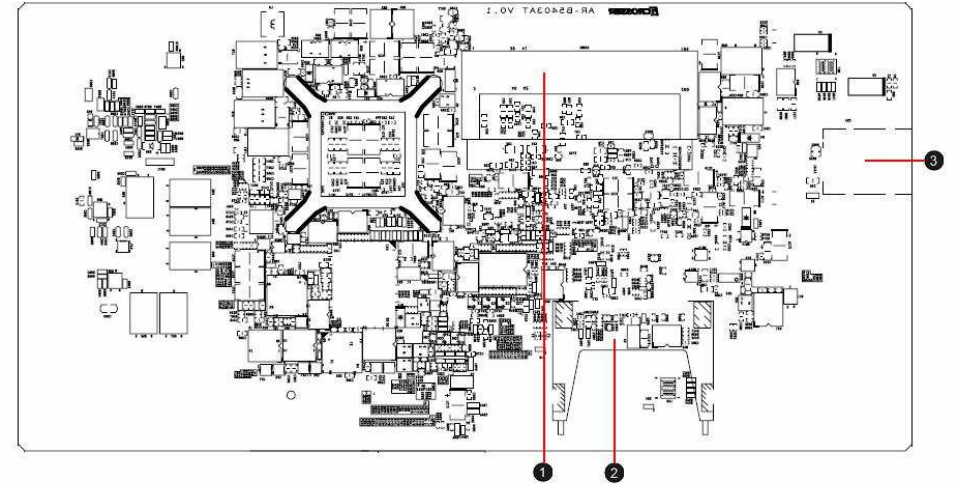
# AR-B5403AT Quick Manual

## 1. Mainboard illustration (Top Side)



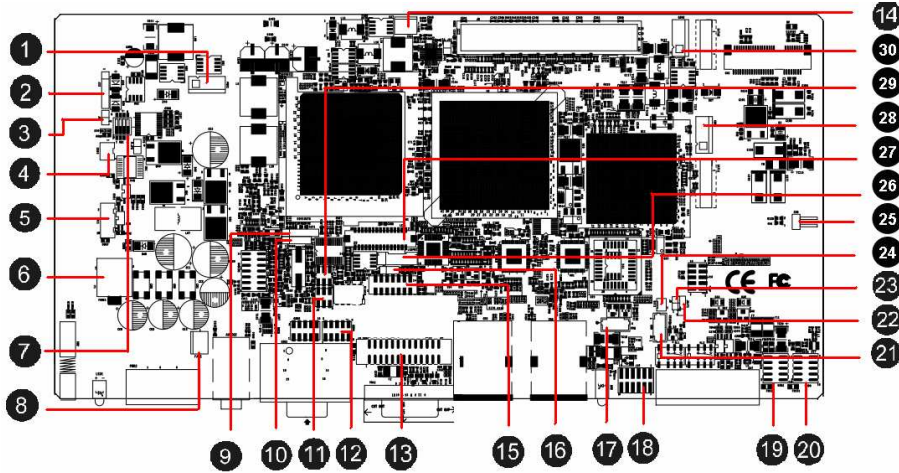
1 <b>CPU</b> CPU Socket	10 <b>USB Port and LAN</b> 2 USB and 1 RJ-45 for LAN
2 <b>GMCH</b> Graphic Memory Control Hub Intel 945GME	11 <b>USB Port and LAN</b> 2 USB and 1 RJ-45 for LAN
3 <b>ICH7M</b> Graphic Memory Control Hub Intel GM45	12 <b>Power LED and HDD LED</b> Power LED and HDD LED
4 <b>Local Switch</b> 12V Power Switch	13 <b>GPIO Port</b> User Defined GPIO Port
5 <b>Status LED</b> Machine Status LED	14 <b>LAN Chip</b> Broadcom BCM5787 Gigabit Ethernet
6 <b>Power Input Connector</b> Power Input Terminal Block Connector	15 <b>BIOS</b> BIOS IC
7 <b>Remote Switch and Audio</b> Remote Power Control and Audio I/O	16 <b>SATA1</b> SATA Data Connector
8 <b>COM Port</b> RS232 Serial Ports (COM1 & COM2)	17 <b>Mini-PCIE for 3G module</b> 3G Module slot with USB interface
9 <b>VGA</b> VGA Port	18 <b>SATA2</b> SATA Data Connector

## 2. Mainboard illustration (Bottom Side)




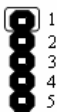







1 <b>SO-DIMM Socket</b> SO-DIMM Socket for DDR2	3 <b>SIMM Card Socket</b> SIMM Card Socket for 3G Module
2 <b>CF Slot</b> CF Slot for CF Card support IDE Mode	









### 3. Pin definition & Jumper setting (Top Side)


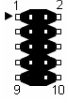







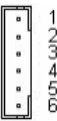
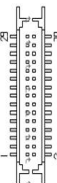



1 PWR1 12V, 5V Output	12 COM4 Pin Header for COM4 Port	23 J6 CF Card Master setting
2 J12 Connector for Programming PIC	13 DVI3 DVI Output Port	24 BAT1 Battery Input
3 JP4 Define KEY_SW, ENG_STS input type	14 FAN2 CPU FAN Connector	25 CN2 3.5G Carrier Board Status LED
4 CN10 Reserved	15 TVCON1 TV Output Port	26 LCDPW1 Backlight Power and Control signal
5 J11 Front Panel Connector	16 J1 LVDS Panel Power Select	27 LCD1 LCD Signal Output
6 Fuse1 Fuse Connector	17 CN8 +5V, +12V for External Module	28 CON7 SATA Device Power
7 SW1 DIP Switch for Power Mode Select	18 J10 Jumper Select for GPIO Configuration	29 JP1 COM2 Transfer Protocol setting
8 FAN1 System Fan Connector	19 USB2 Pin Header for USB Ports	30 CON2 SATA Device Power
9 IR1 IR Port	20 USB3 Pin Header for USB Ports	
10 J5 COM2 RS-422,RS-485 Output	21 CN9 +5V, +12V for External Module	
11 J9 Power SW, Reset, Buzzer Connector	22 JBAT1 Pin Header for CMOS Clear	

### 3.1 Connectors and Jumper Settings

<p>1. PWR1 (12V,5V Output)</p>  <table border="1"> <thead> <tr> <th>PIN</th> <th>DEFINE</th> </tr> </thead> <tbody> <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> </tbody> </table>	PIN	DEFINE	1	+12V	2	GND	3	GND	4	+5V	<p>2. J12 (Connector for PIC Programming)</p>  <table border="1"> <thead> <tr> <th>PIN</th> <th>DEFINE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>+5VSB</td> </tr> <tr> <td>2</td> <td>ISPDATA</td> </tr> <tr> <td>3</td> <td>ISPCLK</td> </tr> <tr> <td>4</td> <td>ISPVPP</td> </tr> <tr> <td>5</td> <td>GND</td> </tr> </tbody> </table>	PIN	DEFINE	1	+5VSB	2	ISPDATA	3	ISPCLK	4	ISPVPP	5	GND	<p>3. JP4 (Define Key_SW, ENG_STS Input Type)</p>  <table border="1"> <thead> <tr> <th>Status</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>Open</td> <td>Active High</td> </tr> <tr> <td>Short</td> <td>Active Low</td> </tr> </tbody> </table>	Status	Signal	Open	Active High	Short	Active Low																																					
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<p>4. CN10 (GPO reserve)</p>  <table border="1"> <thead> <tr> <th>PIN</th> <th>SIGNAL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GPO</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> </tbody> </table>	PIN	SIGNAL	1	GPO	2	GND	<p>5. J11(Front Panel Connector) (Note1)</p>  <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>PWRBTN_IN</td> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>LOC_SW</td> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>KEY_SW</td> <td>6</td> <td>GND</td> </tr> <tr> <td>7</td> <td>ENG_STS</td> <td>8</td> <td>GND</td> </tr> <tr> <td>9</td> <td>STS_LED</td> <td>10</td> <td>GND</td> </tr> </tbody> </table>	PIN	Signal	PIN	Signal	1	PWRBTN_IN	2	GND	3	LOC_SW	4	GND	5	KEY_SW	6	GND	7	ENG_STS	8	GND	9	STS_LED	10	GND	<p>6. FUSE1 (Connect to Fuse)</p>  <table border="1"> <thead> <tr> <th>PIN</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1,2</td> <td>Fuse Out</td> </tr> <tr> <td>3,4</td> <td>Fuse In</td> </tr> </tbody> </table>	PIN	Signal	1,2	Fuse Out	3,4	Fuse In																													
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<p>7. SW1 (DIP switch for power mode select)(Note2)</p>  <table border="1"> <thead> <tr> <th>Mode</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>ON</td> </tr> <tr> <td>1</td> <td>ON</td> <td>ON</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>2</td> <td>ON</td> <td>ON</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>3</td> <td>ON</td> <td>ON</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>4</td> <td>ON</td> <td>OFF</td> <td>ON</td> <td>ON</td> </tr> <tr> <td>5</td> <td>ON</td> <td>OFF</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>6</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>ON</td> </tr> <tr> <td>7</td> <td>ON</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> </tbody> </table>	Mode	1	2	3	4	0	ON	ON	ON	ON	1	ON	ON	ON	OFF	2	ON	ON	OFF	ON	3	ON	ON	OFF	OFF	4	ON	OFF	ON	ON	5	ON	OFF	ON	OFF	6	ON	OFF	OFF	ON	7	ON	OFF	OFF	OFF	<p>8. FAN1 (System FAN)</p>  <table border="1"> <thead> <tr> <th>PIN</th> <th>SIGNAL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GND</td> </tr> <tr> <td>2</td> <td>12V</td> </tr> <tr> <td>3</td> <td>FAN Speed Detect</td> </tr> </tbody> </table>	PIN	SIGNAL	1	GND	2	12V	3	FAN Speed Detect	<p>9. IR1 (IR Pin Header)</p>  <table border="1"> <thead> <tr> <th>PIN</th> <th>DEFINE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>+5V</td> </tr> <tr> <td>2</td> <td>NC</td> </tr> <tr> <td>3</td> <td>IR_RX</td> </tr> <tr> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>IR_TX</td> </tr> </tbody> </table>	PIN	DEFINE	1	+5V	2	NC	3	IR_RX	4	GND	5	IR_TX
Mode	1	2	3	4																																																															
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5	IR_TX																																																																		

<p>10. J5 (COM2 RS-422,RS-485 Output)</p>  <table border="1" data-bbox="190 311 336 526"> <thead> <tr> <th>PIN</th> <th>SIGNAL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>TX+</td> </tr> <tr> <td>2</td> <td>TX-</td> </tr> <tr> <td>3</td> <td>RX+</td> </tr> <tr> <td>4</td> <td>RX-</td> </tr> </tbody> </table>	PIN	SIGNAL	1	TX+	2	TX-	3	RX+	4	RX-	<p>11. J9 (Power Button &amp; Reset &amp; Buzzer)</p>  <table border="1" data-bbox="504 327 728 438"> <thead> <tr> <th>PIN</th> <th>SIGNAL</th> <th>PIN</th> <th>SIGNAL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>5V</td> <td>2</td> <td>PCBEEP</td> </tr> <tr> <td>3</td> <td>GND</td> <td>4</td> <td>RESET</td> </tr> <tr> <td>5</td> <td>GND</td> <td>6</td> <td>PWRBTN</td> </tr> </tbody> </table> <p>※PWRBTN for ATX mode only</p>	PIN	SIGNAL	PIN	SIGNAL	1	5V	2	PCBEEP	3	GND	4	RESET	5	GND	6	PWRBTN	<p>12. COM4 (Pin Header for COM4)</p>  <table border="1" data-bbox="828 327 1052 502"> <thead> <tr> <th>PIN</th> <th>SIGNAL</th> <th>PIN</th> <th>SIGNAL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>DCD</td> <td>2</td> <td>DSR</td> </tr> <tr> <td>3</td> <td>RX</td> <td>4</td> <td>RTS</td> </tr> <tr> <td>5</td> <td>TX</td> <td>6</td> <td>CTS</td> </tr> <tr> <td>7</td> <td>DTR</td> <td>8</td> <td>RI</td> </tr> <tr> <td>9</td> <td>GND</td> <td>10</td> <td>NC</td> </tr> </tbody> </table>	PIN	SIGNAL	PIN	SIGNAL	1	DCD	2	DSR	3	RX	4	RTS	5	TX	6	CTS	7	DTR	8	RI	9	GND	10	NC																																														
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<p>13. DVI3 (DVI Port)</p>  <table border="1" data-bbox="145 622 380 1005"> <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>TD0</td> </tr> <tr> <td>3</td> <td>TD0-</td> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>TD1</td> <td>6</td> <td>TD1-</td> </tr> <tr> <td>7</td> <td>GND</td> <td>8</td> <td>TD2</td> </tr> <tr> <td>9</td> <td>TD2-</td> <td>10</td> <td>GND</td> </tr> <tr> <td>11</td> <td>TCK</td> <td>12</td> <td>TCK-</td> </tr> <tr> <td>13</td> <td>HPD</td> <td>14</td> <td>DDCCLK</td> </tr> <tr> <td>15</td> <td>VCC</td> <td>16</td> <td>DDCDATA</td> </tr> <tr> <td>17</td> <td>RED</td> <td>18</td> <td>GND</td> </tr> <tr> <td>19</td> <td>GREEN</td> <td>20</td> <td>GND</td> </tr> <tr> <td>21</td> <td>BLUE</td> <td>22</td> <td>GND</td> </tr> <tr> <td>23</td> <td>VSYNC</td> <td>24</td> <td>CRT DDCCLK</td> </tr> <tr> <td>25</td> <td>HSYNC</td> <td>26</td> <td>CRT DDCDATA</td> </tr> </tbody> </table>	PIN	SIGNAL	PIN	SIGNAL	1	GND	2	TD0	3	TD0-	4	GND	5	TD1	6	TD1-	7	GND	8	TD2	9	TD2-	10	GND	11	TCK	12	TCK-	13	HPD	14	DDCCLK	15	VCC	16	DDCDATA	17	RED	18	GND	19	GREEN	20	GND	21	BLUE	22	GND	23	VSYNC	24	CRT DDCCLK	25	HSYNC	26	CRT DDCDATA	<p>14. FAN2 (CPU Fan connector)</p>  <table border="1" data-bbox="504 734 705 861"> <thead> <tr> <th>PIN</th> <th>SIGNAL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GND</td> </tr> <tr> <td>2</td> <td>12V</td> </tr> <tr> <td>3</td> <td>FAN Speed Detect</td> </tr> </tbody> </table>	PIN	SIGNAL	1	GND	2	12V	3	FAN Speed Detect	<p>15. TVCON1 (TV Output Port)</p>  <table border="1" data-bbox="828 694 1052 949"> <thead> <tr> <th>PIN</th> <th>Signal</th> <th>PIN</th> <th>Signal</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>S-Video Luminance</td> <td>2</td> <td>Reserve</td> </tr> <tr> <td>3</td> <td>GND</td> <td>4</td> <td>Reserve</td> </tr> <tr> <td>5</td> <td>CVBS</td> <td>6</td> <td>NC</td> </tr> <tr> <td>7</td> <td>GND</td> <td>8</td> <td>Reserve</td> </tr> <tr> <td>9</td> <td>S-Video Chrominance</td> <td>10</td> <td>GND</td> </tr> <tr> <td>11</td> <td>GND</td> <td>12</td> <td>NC</td> </tr> <tr> <td>13</td> <td>NC</td> <td>14</td> <td>NC</td> </tr> </tbody> </table>	PIN	Signal	PIN	Signal	1	S-Video Luminance	2	Reserve	3	GND	4	Reserve	5	CVBS	6	NC	7	GND	8	Reserve	9	S-Video Chrominance	10	GND	11	GND	12	NC	13	NC	14	NC
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7	GND	8	TD2																																																																																															
9	TD2-	10	GND																																																																																															
11	TCK	12	TCK-																																																																																															
13	HPD	14	DDCCLK																																																																																															
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<p>16. J1 (LCD Panel Power Select)</p>  <table border="1" data-bbox="168 1181 358 1300"> <thead> <tr> <th>STATUS</th> <th>SETTING</th> </tr> </thead> <tbody> <tr> <td>1-2 close</td> <td>+5V</td> </tr> <tr> <td>2-3 close</td> <td>+3.3V</td> </tr> </tbody> </table>	STATUS	SETTING	1-2 close	+5V	2-3 close	+3.3V	<p>17. CN8 (Power Connect for +12V and +5V)</p>  <table border="1" data-bbox="504 1149 728 1324"> <thead> <tr> <th>PIN</th> <th>DEFINE</th> </tr> </thead> <tbody> <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> </tbody> </table>	PIN	DEFINE	1	+12V	2	GND	3	GND	4	+5V	<p>18. J10 (Jumper Select for GPIO configuration)</p>  <table border="1" data-bbox="828 1117 1052 1356"> <thead> <tr> <th>PIN</th> <th>DEFINE</th> </tr> </thead> <tbody> <tr> <td>1-2</td> <td>NC(DEFAULT)</td> </tr> <tr> <td>3-4</td> <td>NO</td> </tr> <tr> <td>5-6</td> <td>GND(DEFAULT)</td> </tr> <tr> <td>7-8</td> <td>+5V</td> </tr> <tr> <td>9-10</td> <td>+12V</td> </tr> <tr> <td>11-12</td> <td>+EXT</td> </tr> </tbody> </table>	PIN	DEFINE	1-2	NC(DEFAULT)	3-4	NO	5-6	GND(DEFAULT)	7-8	+5V	9-10	+12V	11-12	+EXT																																																																		
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<p>19. USB2 (USB Output Port)</p>  <table border="1" data-bbox="1265 303 1489 470"> <thead> <tr> <th>PIN</th> <th>SIGNAL</th> <th>PIN</th> <th>SIGNAL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>+5V</td> <td>2</td> <td>+5V</td> </tr> <tr> <td>3</td> <td>DATA3-</td> <td>4</td> <td>DATA2-</td> </tr> <tr> <td>5</td> <td>DATA3+</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>10</td> <td>GND</td> </tr> </tbody> </table>	PIN	SIGNAL	PIN	SIGNAL	1	+5V	2	+5V	3	DATA3-	4	DATA2-	5	DATA3+	6	DATA2+	7	GND	8	GND	9	GND	10	GND	<p>20. USB3 (USB Output Port)</p>  <table border="1" data-bbox="1612 303 1836 470"> <thead> <tr> <th>PIN</th> <th>SIGNAL</th> <th>PIN</th> <th>SIGNAL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>+5V</td> <td>2</td> <td>NC</td> </tr> <tr> <td>3</td> <td>DATA7-</td> <td>4</td> <td>NC</td> </tr> <tr> <td>5</td> <td>DATA7+</td> <td>6</td> <td>NC</td> </tr> <tr> <td>7</td> <td>GND</td> <td>8</td> <td>NC</td> </tr> <tr> <td>9</td> <td>GND</td> <td>10</td> <td>NC</td> </tr> </tbody> </table>	PIN	SIGNAL	PIN	SIGNAL	1	+5V	2	NC	3	DATA7-	4	NC	5	DATA7+	6	NC	7	GND	8	NC	9	GND	10	NC	<p>21. CN9 (Power Connect for +12V and +5V)</p>  <table border="1" data-bbox="1948 287 2172 470"> <thead> <tr> <th>PIN</th> <th>DEFINE</th> </tr> </thead> <tbody> <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> </tbody> </table>	PIN	DEFINE	1	+12V	2	GND	3	GND	4	+5V
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<p>22. JBAT1 (Pin Header for CMOS Clear)</p>  <table border="1" data-bbox="1276 678 1478 790"> <thead> <tr> <th>STATUS</th> <th>SETTING</th> </tr> </thead> <tbody> <tr> <td>1-2</td> <td>Normal</td> </tr> <tr> <td>2-3</td> <td>Clear CMOS</td> </tr> </tbody> </table>	STATUS	SETTING	1-2	Normal	2-3	Clear CMOS	<p>23. J6 (CF Card status)</p>  <table border="1" data-bbox="1624 678 1825 790"> <thead> <tr> <th>STATUS</th> <th>SETTING</th> </tr> </thead> <tbody> <tr> <td>SHORT</td> <td>Master</td> </tr> <tr> <td>OPEN</td> <td>Slave</td> </tr> </tbody> </table>	STATUS	SETTING	SHORT	Master	OPEN	Slave	<p>24. BAT1 (Battery Connector)</p>  <table border="1" data-bbox="1982 678 2139 790"> <thead> <tr> <th>PIN</th> <th>SIGNAL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>VBAT</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> </tbody> </table>	PIN	SIGNAL	1	VBAT	2	GND																																								
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25. CN2 (3.5G Module Status)	26. LCDPW1 (Backlight Output)	27. LCD1 (LCD Signal Output)																																																																																				
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※ **NOTE1: (Detail functions please reference to User Manual.)**

- PWRBTN\_IN: Trigger power-up at Mode0, Mode5, Mode6, and Mode7.
- LOC\_SW: Main system on/off switch.
  1. Short: System off.
  2. Open: System on (default).
- KEY\_SW: Trigger power-up at Mode2, Mode3, and Mode4.
- ENG\_STS: Detect the status of main system.
- STS\_LED: Indicate power status.

※ **Note2: (Detail functions please reference to User Manual.)**

- Mode0: ATX function.
- Mode1: AT function.
- Mode2, Mode3, Mode4: Smart ATX (power-on by trigger KEY\_SW).
- Mode5, Mode6, Mode7: Smart ATX (power-on by trigger PWRBTN\_IN).