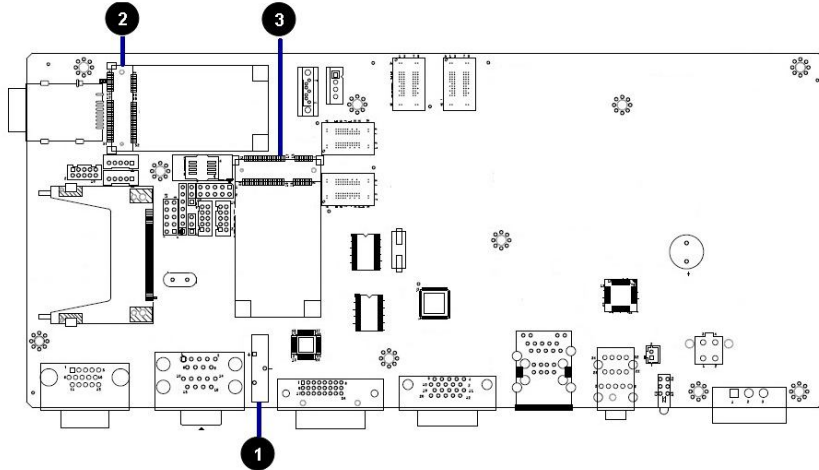
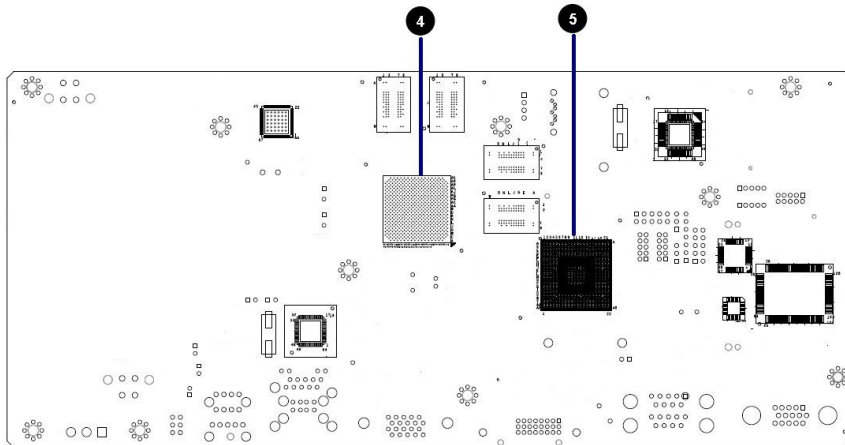


AR-B6005 Quick Manual

1. Mainboard illustration (Top Side)

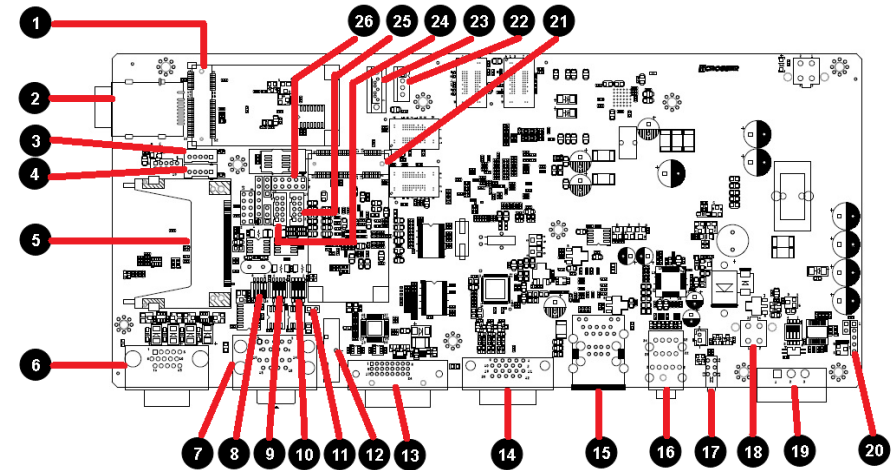


Mainboard illustration (Bottom Side)



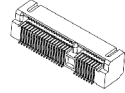
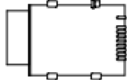
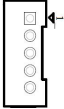
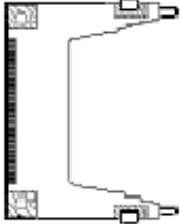
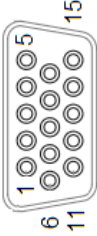
1	BH1 System RTC battery socket	5	Intel Platform Control Hub(PCH) EG20T
2	MINIPCI1 MINI PCI-E socket 1		
3	MINIPCI2 MINI PCI-E socket 2		
4	Intel Atom E640 CPU		

2. IO port locations & Jumper settings definition

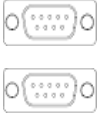


1 MINIPCI1 Mini-PCI Express Card connector	14 COMBO1 Combo connector		
2 SIM1 SIM card Holder	15 CN4 RJ45 & USB ports (USB1)Connector		
3 BT1 Bluetooth module connector.	16 AUDIO1 Line Out & Mic in, Remote switch phone jack.		
4 GPS1 GPS module connector.	17 LED2 3-in-1 LED for Power, HDD, Status LED.		
5 CF1 CF CARD SOCKET	18 FUSE1 For Fuse connector		
6 GPIO1 D-SUB 15-pin for External GPIO connector.	19 PWR2 Power Input Terminal Block Connector		
7 COM1_COM3 D-SUB 9-pin for COM1, COM3 RS232 connector	20 PIC1 PIC Programming connector.		
8 SW1 For RS-422, RS-485 function select.	21 MINIPCI2 Mini-PCI Express Card connector		
9 SW2 For RS-422, RS-485 function select.	22 SATA_PWR1 For SATA power connector #1		
10 SW3 For RS-422, RS-485 function select.	23 SATA1 SATA device connector #1		
11 CCMOS1 CMOS memory clearing header	24 COM2_485 Pin header for COM2 use RS-422/485 function		
12 BH1 CR2032 Battery Hold connector	25 COM2 Pin header for COM2 use RS-232 function		
13 DVI1 DVI connector	26 SPI1 BIOS programming header		

2.1 Connectors and Jumper Settings


1, 21. MINIPCI1, MINIPCI2 (Mini-PCIe Connector)		2. SIM1 Connector																																																							
	Mini-PCIe x1 Connector		SIM Card Holder Connects to 3.5G Cell phone SIM Card																																																						
3,4. BT1, GPS1		5. CF1 (CF CARD SOCKET)																																																							
	For Bluetooth ,GPS module connector. <table border="1"> <thead> <tr> <th>PIN</th> <th>SIGNAL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>+5V</td> </tr> <tr> <td>2</td> <td>Data-</td> </tr> <tr> <td>3</td> <td>Data+</td> </tr> <tr> <td>4</td> <td>GND</td> </tr> <tr> <td>5</td> <td>+3.3V</td> </tr> </tbody> </table>	PIN	SIGNAL	1	+5V	2	Data-	3	Data+	4	GND	5	+3.3V																																												
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6. GPIO1 (For External GPIO control)																																																									
	GPIO Pin Define and GPIO cable color: <table border="1"> <thead> <tr> <th>PIN</th> <th>DEFINE</th> <th>Color</th> <th>PIN</th> <th>DEFINE</th> <th>Color</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>GPO0</td> <td>Brown</td> <td>2</td> <td>GPO1</td> <td>Orange</td> </tr> <tr> <td>3</td> <td>GPO2</td> <td>Green</td> <td>4</td> <td>GPO3</td> <td>Blue</td> </tr> <tr> <td>5</td> <td>GND</td> <td>Black</td> <td>6</td> <td>GND</td> <td>Black</td> </tr> <tr> <td>7</td> <td>CAN_H</td> <td>Red / White</td> <td>8</td> <td>CAN_L</td> <td>White</td> </tr> <tr> <td>9</td> <td>GND</td> <td>Black</td> <td>10</td> <td>i-Button</td> <td>Purple</td> </tr> <tr> <td>11</td> <td>GPI4</td> <td>Light Green</td> <td>12</td> <td>GPI5</td> <td>Light Blue</td> </tr> <tr> <td>13</td> <td>GPI6</td> <td>Pink</td> <td>14</td> <td>GPI7</td> <td>Brown / White</td> </tr> <tr> <td>15</td> <td>VCC12A</td> <td>Yellow</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			PIN	DEFINE	Color	PIN	DEFINE	Color	1	GPO0	Brown	2	GPO1	Orange	3	GPO2	Green	4	GPO3	Blue	5	GND	Black	6	GND	Black	7	CAN_H	Red / White	8	CAN_L	White	9	GND	Black	10	i-Button	Purple	11	GPI4	Light Green	12	GPI5	Light Blue	13	GPI6	Pink	14	GPI7	Brown / White	15	VCC12A	Yellow			
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7. COM1_COM3 (for COM1,COM3 use)



Pin	SIGNAL
1	DCD
2	SIN
3	SOUT
4	DTR
5	GND
6	DSR
7	RTS
8	CTS
9	RI

8. SW1 (RS-422,RS-485 function select)



SW1, DIP Switch
For RS-422, RS-485 function select
(Default: All OFF For RS-232)


RS-422 setting:

1	OFF
2	ON
3	OFF
4	ON

RS-485 setting:

1	ON
2	ON
3	OFF
4	ON


9. SW2 (RS-422/485 TX Terminator resistor selection)



SW2 DIP Switch
For RS-422/485 TX Terminator resistor selection
(Default: all OFF)

SW2				PULL-HI/LOW ohm resistor	Terminator Resistor
1	2	3	4		
OFF	OFF	OFF	OFF	8.87K ohm	NA
ON	OFF	OFF	OFF	Not Application	
OFF	ON	OFF	OFF		
ON	ON	OFF	OFF		
OFF	OFF	ON	OFF		
ON	ON	ON	OFF	8.87K ohm	120
ON	ON	ON	OFF	Not Application	
OFF	OFF	OFF	ON		
ON	OFF	OFF	ON	618 ohm	NA
OFF	ON	OFF	ON	Not Application	
ON	ON	OFF	ON		
OFF	OFF	ON	ON		
ON	OFF	ON	ON		
OFF	ON	ON	ON	618 ohm	120


10. SW3 (RS-422 RX Terminator resistor selection)



SW3 DIP Switch
For RS-422 RX Terminator resistor selection
(Default: all OFF)

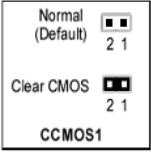
SW3				PULL-HI/LOW ohm resistor	Terminator Resistor
1	2	3	4		
OFF	OFF	OFF	OFF	NA	NA
ON	OFF	OFF	OFF	Not Application	
OFF	ON	OFF	OFF		
ON	ON	OFF	OFF		
OFF	OFF	ON	OFF		
ON	ON	ON	OFF	NA	120
OFF	OFF	OFF	ON	Not Application	
ON	OFF	OFF	ON		
OFF	ON	OFF	ON	665 ohm	NA
ON	ON	OFF	ON	Not Application	
ON	ON	ON	ON		
OFF	OFF	ON	ON		
ON	OFF	ON	ON		
OFF	ON	ON	ON	665 ohm	120

11. CCMOS1




Pins 1 and 2 opened (Default): Normal operation.

Pins 1 and 2 shorted: Clear CMOS memory.



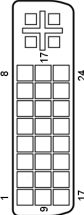
Normal (Default) 2 1
Clear CMOS 2 1
CCMOS1

12. BH1 (Battery Holder)



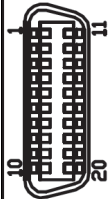
CMOS Backup Battery:
An onboard battery saves the CMOS memory to keep the BIOS information stays on even after disconnected your system with power source. Nevertheless, this backup battery exhausts after some years
Once the error message like "CMOS BATTERY HAS FAILED" or "CMOS checksum error" displays on monitor, this backup battery is no longer functional and has to be renewed

13. DVI1

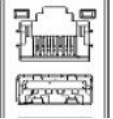

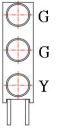
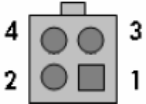

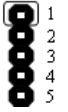





Pin 1	TMDS Data2-
Pin 2	TMDS Data2+
Pin 3	GND
Pin 4	TMDS Data4-
Pin 5	TMDS Data4+
Pin 6	DDC Clock
Pin 7	DDC Data
Pin 8	Analog VSYNC
Pin 9	TMDS Data1-
Pin 10	TMDS Data1+
Pin 11	GND
Pin 12	TMDS Data3-
Pin 13	TMDS Data3+
Pin 14	+5V
Pin 15	GND
Pin 16	Hot Plug Detect
Pin 17	TMDS Data0-
Pin 18	TMDS Data0+
Pin 19	GND
Pin 20	TMDS Data5-
Pin 21	TMDS Data5+
Pin 22	GND
Pin 23	TMDS Clock+
Pin 24	TMDS Clock-

14. COMBO1



Pin 1	USB_Data-
Pin 2	USB_Data+
Pin 3	GND
Pin 4	+5V
Pin 5	GND
Pin 6	RED
Pin 7	GREEN
Pin 8	BLUE
Pin 9	HSYNC
Pin 10	VSYNC
Pin 11	DDCCLK
Pin 12	+12V
Pin 13	GND
Pin 14	AUDIO R
Pin 15	GND
Pin 16	NC
Pin 17	AUDIO L
Pin 18	NC
Pin 19	NC
Pin 20	DDCDATA

15. CN4		16. AUDIO1															
	RJ45 Ethernet Connector with 1 port of External USB Connector		<table border="1"> <thead> <tr> <th>Color</th> <th>SIGNAL</th> </tr> </thead> <tbody> <tr> <td>Blue</td> <td>Remote Switch</td> </tr> <tr> <td>Green</td> <td>Line Out</td> </tr> <tr> <td>Pink</td> <td>Mic In</td> </tr> </tbody> </table>	Color	SIGNAL	Blue	Remote Switch	Green	Line Out	Pink	Mic In						
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Green	Line Out																
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17. LED2 (Power State)		18. FUSE1 (Fuse connector)															
	<table border="1"> <thead> <tr> <th>LED</th> <th>SIGNAL</th> </tr> </thead> <tbody> <tr> <td>G</td> <td>PIC LED</td> </tr> <tr> <td>G</td> <td>HDD LED</td> </tr> <tr> <td>Y</td> <td>Power LED</td> </tr> </tbody> </table>	LED	SIGNAL	G	PIC LED	G	HDD LED	Y	Power LED		<table border="1"> <thead> <tr> <th>PIN</th> <th>DEFINE</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	DEFINE	1,2	Fuse Out	3,4	Fuse In
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Y	Power LED																
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19. PWR2 (Power Input Terminal Block Connector)		20. PIC1 (PIC Programming connector)															
	<table border="1"> <thead> <tr> <th>PIN</th> <th>DEFINE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>12V / 24V</td> </tr> <tr> <td>2</td> <td>IGN</td> </tr> <tr> <td>3</td> <td>GND</td> </tr> </tbody> </table>	PIN	DEFINE	1	12V / 24V	2	IGN	3	GND		PIC programming connector						
PIN	DEFINE																
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2	IGN																
3	GND																

22. SATA_PWR1		23. SATA1 (SATA device connector #1)																																																										
	<p>SATA_PWR1 SATA Device Power Connector</p> <table border="1"> <thead> <tr> <th>PIN</th> <th>SIGNAL</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>+3.3V</td> </tr> <tr> <td>4</td> <td>+5V</td> </tr> </tbody> </table>	PIN	SIGNAL	1	+12V	2	GND	3	+3.3V	4	+5V		<p>To connect SATA device:</p> <ol style="list-style-type: none"> Attach either end of the signal cable to the SATA connector on motherboard Attach the other end to the SATA device. Attach the SATA power cable to the SATA device and connect the other end from the power supply 																																															
PIN	SIGNAL																																																											
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24, 25. COM2, COM2_485 (For COM2 Function select)		26. SPI1 (BIOS Programmable HEADER)																																																										
<p>COM2: For RS-232 Function COM2_485: For RS-422, RS-485 Function</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>COM2 RS-232 SIGNAL</th> <th>COM2_485 RS-422_485</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>DSR</td> <td>NC</td> </tr> <tr> <td>2</td> <td>DCD</td> <td>485_422_TX+</td> </tr> <tr> <td>3</td> <td>RTS</td> <td>NC</td> </tr> <tr> <td>4</td> <td>SIN</td> <td>485_422_TX-</td> </tr> <tr> <td>5</td> <td>CTS</td> <td>422_RX2-</td> </tr> <tr> <td>6</td> <td>SOUT</td> <td>NC</td> </tr> <tr> <td>7</td> <td>RI</td> <td>422_RX2+</td> </tr> <tr> <td>8</td> <td>DTR</td> <td>NC</td> </tr> <tr> <td>9</td> <td>NC</td> <td>NC</td> </tr> <tr> <td>10</td> <td>GND</td> <td>GND</td> </tr> </tbody> </table>		Pin	COM2 RS-232 SIGNAL	COM2_485 RS-422_485	1	DSR	NC	2	DCD	485_422_TX+	3	RTS	NC	4	SIN	485_422_TX-	5	CTS	422_RX2-	6	SOUT	NC	7	RI	422_RX2+	8	DTR	NC	9	NC	NC	10	GND	GND		<table border="1"> <thead> <tr> <th>PIN</th> <th>DEFINE</th> <th>PIN</th> <th>DEFINE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CS0</td> <td>2</td> <td>+3.3V</td> </tr> <tr> <td>3</td> <td>MISO</td> <td>4</td> <td>HOLD</td> </tr> <tr> <td>5</td> <td>WP</td> <td>6</td> <td>CLK</td> </tr> <tr> <td>7</td> <td>GND</td> <td>8</td> <td>MOSI</td> </tr> <tr> <td>9</td> <td>N.C</td> <td>10</td> <td>N.C</td> </tr> </tbody> </table>	PIN	DEFINE	PIN	DEFINE	1	CS0	2	+3.3V	3	MISO	4	HOLD	5	WP	6	CLK	7	GND	8	MOSI	9	N.C	10	N.C
Pin	COM2 RS-232 SIGNAL	COM2_485 RS-422_485																																																										
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5	CTS	422_RX2-																																																										
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7	RI	422_RX2+																																																										
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