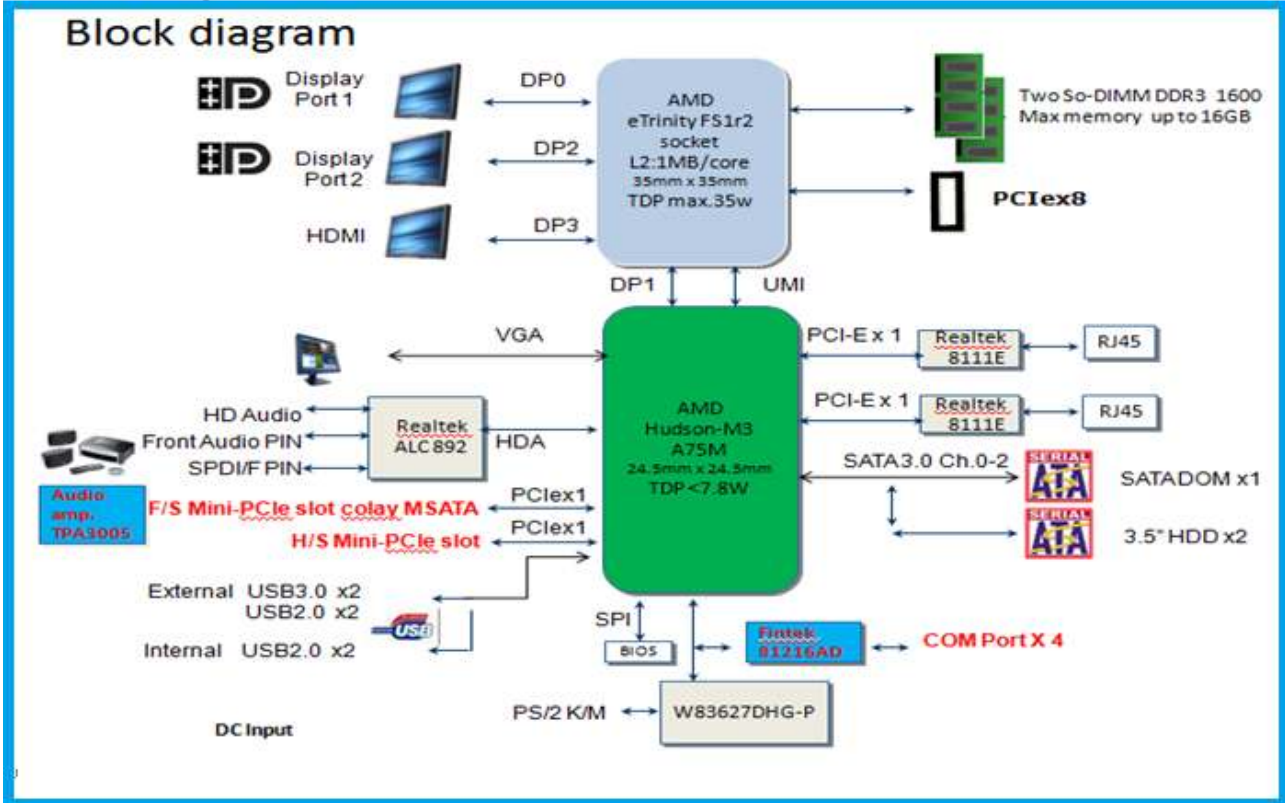


EBC-EA01 Rev.A101_2

Block Diagram



Graphics & Video

Graphics & Video		
Item	Description	Remarks
VGA Connector	One 15-pin slim DB15 VGA female connector on back panel Hot plugging while the system is running is supported Over-Current protected Analog displays up to 1920x1600 at a refresh rate of 60 Hz.	
HDMI Connector	One 19-pin HDMI Type A receptacle connector on back panel Support HDMI 1.3a Resolution up to 4096x2160 Hot plugging while the system is running is supported	
Display Port Connector	One 20-pin DisplayPort connector on back panel Support DP1.2 with 4096x2160@60Hz (16:9) or 4096x2400@60Hz (16:10) on DP0,DP2 Hot plugging while the system is running is supported	
Video Configuration Mode	Extended Display Identification Data (EDID) protocol for monitors attached to the VGA port	

Network

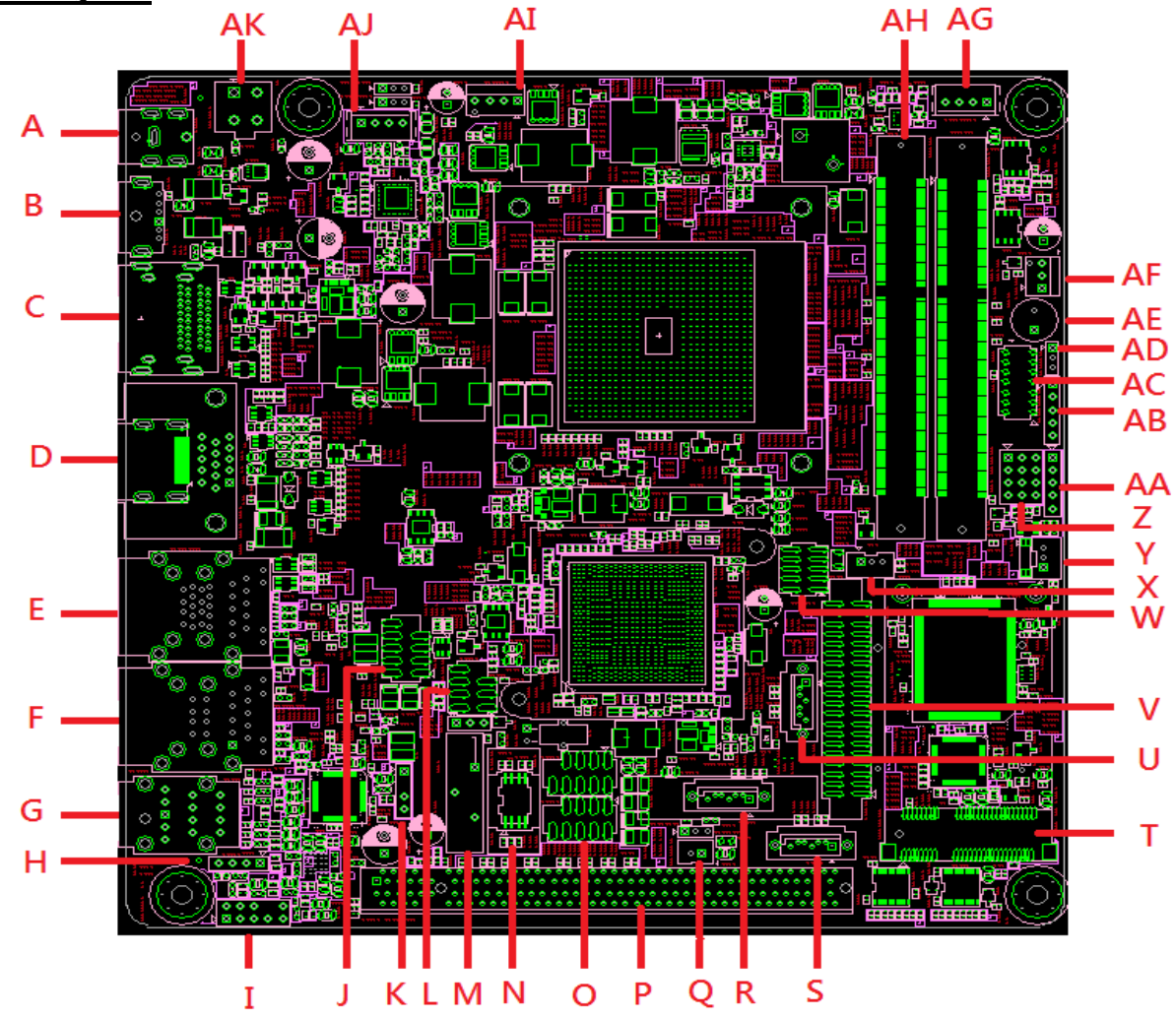
Network 1		
Item	Description	Remarks
Controller	<ul style="list-style-type: none"> • AMD A70M/A75M FCH • RTL8111E Gigabit Ethernet Controller 	
Features	<ul style="list-style-type: none"> • Supports LAN wake capabilities • Supports PXE function • Supports disable LAN feature 	
Connector	<ul style="list-style-type: none"> • One Stacked USB+RJ45 receptacle connector with FE Transformer & LED (Yellow, Green/ Orange) on back panel • Hot plugging while the system is running is supported 	

Network 2		
Item	Description	Remarks
Controller	<ul style="list-style-type: none"> • AMD A70M/A75M FCH • RTL8111E Gigabit Ethernet Controller 	
Features	<ul style="list-style-type: none"> • Supports LAN wake capabilities • Supports PXE function • Supports disable LAN feature 	
Connector	<ul style="list-style-type: none"> • One Stacked USB+RJ45 receptacle connector with FE Transformer & LED (Yellow, Green/ Orange) on back panel • Hot plugging while the system is running is supported 	

LED Indication of RJ45 Connector (CRB Standard)				
LED	Position	Color	LED State	NIC State
Link/ Activity	To the left of the connector	Green	On	Active Connection
			Blinking	Transmit/ Receive Activity
			Off	LAN link is not established
Link Speed	To the right of the connector	Green/ Orange	Green	1000 Mbps
			Orange	100 Mbps
			Off	10 Mbps

Major Components

Board Layout



Major Components and P/N

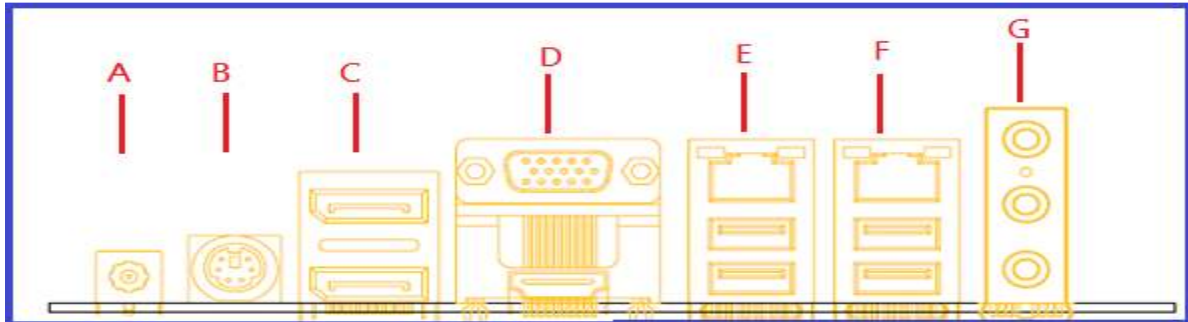
Onboard Major Chip			
Item	Description	P/N	Remark
	• CPU Socket AMD FS1 722P SMD PZ72221-294S-01F	1651002183	XU1
	• IC 218-0755097 AMD FCH A70M SMD FCBGA 656P	1410022554-01	SU1
	• IC RTL8111E-VL-CG SMD QFN 48P 6.0x6.0x1.0mm	1410021647	LU1 LU2
	• IC ALC892-GR Audio Codec SMD LQFP 48P	1410020328	AU1
	• IC W83627DHG-P SMD QFP 128P	1410019212	U16
	• IC F81216AD URAT SMD LQFP 48P	1410018571	U7
	•		
	•		
Back Panel Connector			
A	• DC POWER JACK 2.5mm 90D(M) DIP 2DC-G213B200	1652005624	DCIN1
B	• MINI DIN 6P 1.8mm 90D(F) DIP 2MJ-1594U1D0	1654010665-01	KBMS1
C	• Displayport conn 40P 1.4mm 90D(F) DIP 3VD11203-H	1654010788-01	DUAL_DP1
D	• D-SUB Conn 15P 2.286mm 90D(F) DIP DV11251-H5W9-4	1654010443	VGA1
	• HDMI Conn. 19P 0.5mm 90D(M) SMD QJ51193-FFB4-4F	1654009225-01	HDMI1
E	• PhoneJack RJ45+USB3.0*2 32P 90D(F) DIP 05-A00919	1652005680-11	LAN1USB01
F	• Phone jack RJ45+USB*2 22P 90D(F) DIP RU1-191F9W1	1652005579	LAN2USB23
G	• AUDIO JACK 13P 2.5mm 90D(F) DIP JA3333L-DA18-4F	1652005384	AUDIO1

Internal Connector/ Header			
	•		
H	• Amplifier Pin header (Optional)	1653004100	JAMP1
I	• Audio Pin Header	1653004617	FPAUDIO1
J	• USB Pin Header	1653000310	USB89
K	• SPDIF Out Pin header	1653002625	SPDIF_OUT1
L	• SPI Pin header	1653001065	SPI_CN1
M	• BATTERY Holder	1760000451	BAT1
N	• SPI Socket	1651000682	SPI1
O	• USB Pin Header	1653000310	USB45 USB67
P	• PCIE x16 Slot	1654000097	PCIEX16_1
Q	• SATA1 PWR header • SATA DOM PWR select	1655302020 1653003101-03	SATA_PWR1 DOM_PWR1
R	• SATA DOM Connector	1654009613	SATA1
S	• SATA Connector	1654009613	SATA2
T	• Mini PCIE Connector	1654006715	MINI_PCIE1
U	• SATA Connector	1654009613	SATA3
V	• COM Port Box header	1653220260-01	COM1-4
W	• DIO Pin header	1653005261-01	DIO_CN1
X	• 5VSB INPUT CON	1655303020	ATX5V1
Y	• AT/ATX MODE Select	1655303020-01	PSO1
Z	• Front Panel	1653004300	JFP1+JFP2
AA	• PWR Led & KEYLOCK header	1653005100	JFP3
AB	• WDT & Err Beep header	1653005100	JWDT1+JOB S1
AC	• LPC DEBUG PORT	1653007270	LPC1
AD	• DDR PWR Select	1653003101-03	DDR_PWR1
AE	• Speaker	1750002860	SPKR1
AF	• System Fan Connector	1655004463-01	SYSFAN1
AG	• SATA Power Connector	1655001154	SATA_PWR3
AH	• SO-DIMM Slot	1651001816	DIMM_A1 DIMM_B1
AI	• CPU Fan Connector	1655004463-01	CPUFAN1
AJ	• SATA Power Connector	1655001154	SATA_PWR2
AK	• ATX PWR Connector	1655004509-01	ATX12V1
	•		
EMI & Safety Related Component			
	Description		
	• FDS CR2032 Li Battery		
	• 10 years validity		
	• Fuse		
	• Poly-Switch		
	•		
Components for Debug			
Item	Description		
	•		

Connectors and Headers

Back Panel

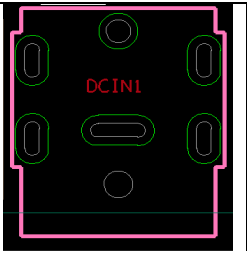
Back Panel Connectors



External IO Connector		
Item	Description	Remarks
A	• DCIN Power Jack	
B	• PS/2 Keyboard	
C	• Dual Display Port	
D	• VGA & HDMI Port	
E	• USB 3.0 Port 0 (lower) and 1 (upper) & GLAN1	
F	• USB 2.0 Port 2 (lower) and 3 (upper) & GLAN2	
G	• Line-In / Line-Out / MIC-In	

DC-in Connector (4 pin) (P/N:1652005624)

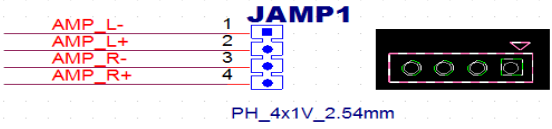
Pin	Signal



Internal Connectors & Headers (CRB Standard)

Amplifier Pin Header (Optional)

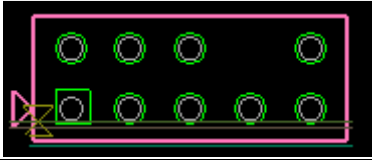
Pin	Signal
1	AMP_L-
2	AMP_L+
3	AMP_R-
4	AMP_R+



PH_4x1V_2.54mm

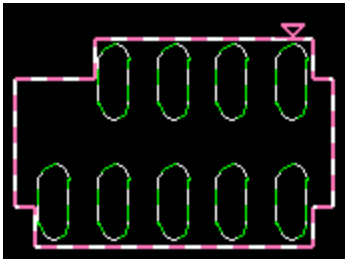
Audio Pin Header (P/N: 1653004617)

Pin	Signal Name	Pin	Signal Name
1	MIC2 Left channel	2	Ground
3	MIC2 Right channel	4	PRESENCE# (Dongle present)
5	LINE2 Right channel	6	MIC2 SENSE_RETURN
7	SENSE_SEND (Jack detection)	8	Key (no pin)
9	LINE2 Left channel	10	LINE2 SENSE_RETURN



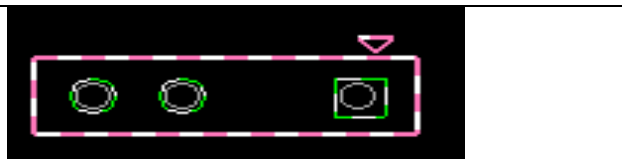
USB PIN Header (P/N: 1653000310)

Pin	Signal Name	Pin	Signal Name
1	+5 VDC	2	+5 VDC
3	D -	4	D -
5	D +	6	D +
7	Ground	8	Ground
9	KEY (no pin)	10	No Connect/ OC



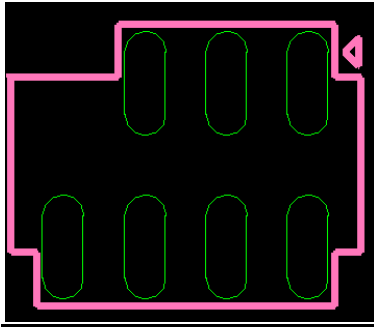
SPDIF Out Pin Header (P/N: 1653002625)

Pin	Signal Name
1	+5V
2	Key
3	SPDIF_OUT
4	GND



SPI Pin Header (P/N: 1653001065)

Pin	Signal Name	Pin	Signal Name
1	VCC3	2	GND
3	SPI_CS#	4	SPI_CLK
5	SPI_MISO	6	SPI_MOSI
7	HOLD#	8	Key



SATA1 PWR Header (P/N: 1655302020)

Pin	Signal Name	
1	+5V_SATA	
2	GND	

SATA DOM PWR Select (P/N: 165300101-03)

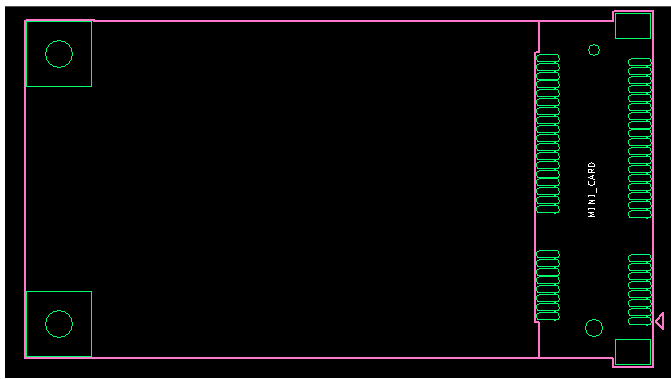
PIN	Signal Name	
1	GND	
2	SATA_Conn.	
3	+5V_SATA	

SATA Connector (P/N: 1654009613)

Pin	Signal Name	Description	
1	GND	Ground	
2	TXP	Transmit diff data - positive	
3	TXN	Transmit diff data - negative	
4	GND	Ground	
5	RXN	Receive diff data - negative	
6	RXP	Receive diff data - positive	
7	GND	Ground	

Mini PCIE Connector (P/N: 1654006715)

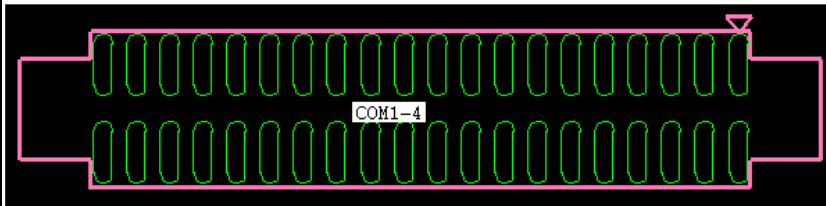
Pin	Signal Name	Pin	Signal Name
1	WAKE#	2	3.3Vaux
3	COEX1	4	GND
5	COEX2	6	1.5V
7	CLKREQ#	8	UIM_PWR
9	GND	10	UIM_DATA
11	REFCLK-	12	UIM_CLK
13	REFCLK+	14	UIM_RESET
15	GND	16	UIM_VPP
Mechanical Key			
17	Reserved (UIM_C8)	18	GND
19	Reserved (UIM_C4)	20	W_DISABLE#
21	GND	22	PERST#
23	PERn0	24	3.3Vaux
25	PERp0	26	GND
27	GND	28	1.5V
29	GND	30	SMB_CLK
31	PETn0	32	SMB_DATA
33	PETp0	34	GND
35	GND	36	USB_D-
37	GND	38	USB_D+
39	3.3VAUX	40	GND
41	3.3VAUX	42	LED_WWAN#
43	GND	44	LED_WLAN#
45	Reserved	46	LED_WPAN#
47	Reserved	48	1.5V
49	Reserved	50	GND
51	Reserved	52	3.3VAUX



COM Port BOX Header (P/N: 1653220260-01)

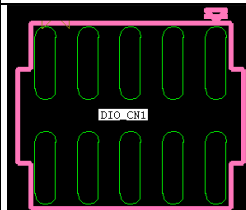
Serial Port is over-current protected

Pin	Signal Name	Description	Pin	Signal Name	Description
1	DCD1#	Data Carrier Detect	2	DSR1#	Data Set Ready
3	RXD1#	Receive Data	4	RTS1#	Request To Send
5	TXD1#	Transmit Data	6	CTS1#	Clear To Send
7	DTR1#	Data Terminal Ready	8	RI1#	Ring Indicator
9	Ground		10	Ground	
11	DCD2#	Data Carrier Detect	12	DSR2#	Data Set Ready
13	RXD2#	Receive Data	14	RTS2#	Request To Send
15	TXD2#	Transmit Data	16	CTS2#	Clear To Send
17	DTR2#	Data Terminal Ready	18	RI2#	Ring Indicator
19	Ground		20	Ground	
21	DCD3#	Data Carrier Detect	22	DSR3#	Data Set Ready
23	RXD3#	Receive Data	24	RTS3#	Request To Send
25	TXD3#	Transmit Data	26	CTS3#	Clear To Send
27	DTR3#	Data Terminal Ready	28	RI3#	Ring Indicator
29	Ground		30	Ground	
31	DCD4#	Data Carrier Detect	32	DSR4#	Data Set Ready
33	RXD4#	Receive Data	34	RTS4#	Request To Send
35	TXD4#	Transmit Data	36	CTS4#	Clear To Send
37	DTR4#	Data Terminal Ready	38	RI4#	Ring Indicator
39	Ground		40	Ground	



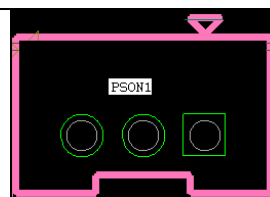
DIO Pin Header (P/N: 1653005261-01)

Pin	Signal Name	Pin	Signal Name
1	GPIO0	2	GPIO4
3	GPIO1	4	GPIO5
5	GPIO2	6	GPIO6
7	GPIO3	8	GPIO7
9	+5VSB	10	GND



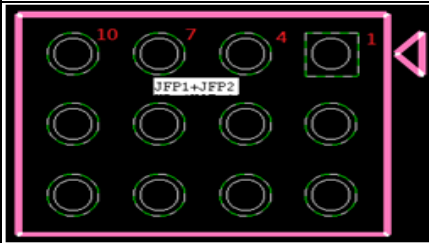
H/W AT&ATX mode Jumper (P/N: 1655303020-01)

Pin	Signal Name	Description
1	FRP_PANSWIN#_AT	AT mode signal
2	FRP_PANSWIN#	Power switch signal
3	NC	




Front panel (P/N:1653004300)

Pin	Signal Name	Pin	Signal Name	Pin	Signal Name
1	+5V	5	FRP_SATALED+	9	FRP_RST#
2	HDLED+	6	FRP_SATALED-	10	SPK_CN17P3
3	FRP_PANSWIN#	7	SPK_CN17P4	11	SCLK0
4	SPK_CN17P2	8	SDATA0	12	GND




PWR Led & KeyLock Header (P/N: 1653005100)

Pin	Signal Name	Pin	Signal Name
1	PWLED+	4	#KEYLOCK
2	NC	5	GND
3	GND		



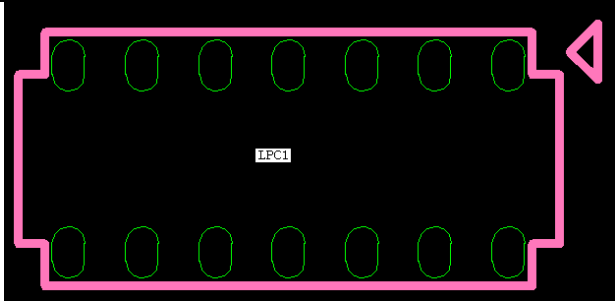
WDT & Err Beep header (P/N: 1653005100)

Pin	Signal Name	Pin	Signal Name
1	NC	4	SIO_BEEP
2	SIO_WG#	5	ERR_BEEP
3	FRP_RST#		




LPC Debug Port (P/N: 1653007270)

Pin	Signal Name	Pin	Signal Name
1	PCI_CLK2	2	LPC_AD1
3	A_RST#	4	LPC_AD0
5	LPC_FRAME#	6	+3.3V
7	LPC_AD3	8	GND
9	LPC_AD2	10	SCLK0
11	SERIRQ	12	SDATA0
14	+5VSB	14	+5V



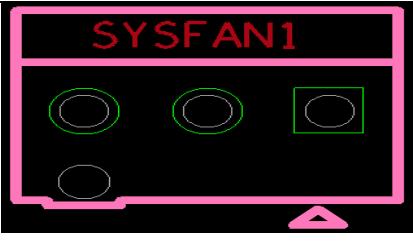
DDR PWR select header (P/N: 1653003101-03)

Pin	Signal Name	Description
1	+3VSB	DDR_Sel: H==> 1.51V
2	DDR_Sel	DDR_Sel: L==> 1.355V
3	GND	



Chassis FAN Header (3pin) (P/N: 1655004463-01)

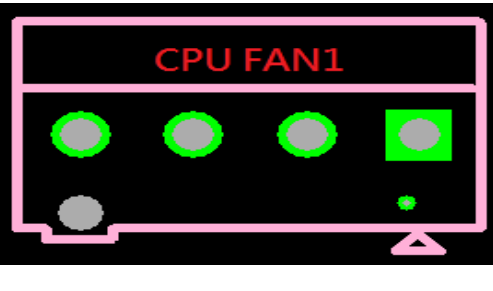
Pin	Signal Name	Description
1	GND	Ground
2	+12 V	PWM controlled pulses
3	Tach	FAN Tachometer



The fan header supports +12 V at 1 A maximum

CPU FAN Header (4pin) (P/N: 1655004468-01)

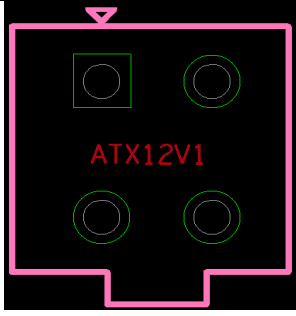
Pin	Signal Name	Description
1	GND	Ground
2	+12 V	PWM controlled pulses
3	Tach	FAN Tachometer
4	N/A	



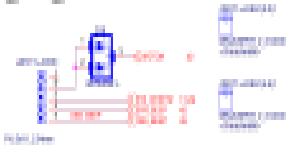
The fan header supports +12 V at 1 A maximum

ATX PWR Connector (P/N: 1655004463-01)

Pin	Signal Name
1	GND
2	GND
3	+12V
4	+12V



Jumper Blocks

Jumper Block (Pin 1 on each jumper block is denoted by an "▼")		
Item	Description	Remarks
Clear CMOS	<ul style="list-style-type: none"> One 1x3 2.54mm pin header with one blue, long-tail Jump CAP 1-2(default)=Normal, 2-3= Clear CMOS 	JCMOS
AT/ATX mode(HW)	<ul style="list-style-type: none"> One 1x3 2.0mm pin header with one blue, long-tail Jump CAP 1-2 (default)=AT Mode; 2-3=ATX mode 	PSON1 (ECOM-091061 change to AT mode)
DDR PWR Sel	<ul style="list-style-type: none"> One 1x3 2.0mm pin header with one blue, long-tail Jump CAP 1-2(default) = 1.51V ; 2-3= 1.355V 	DDR_PWR1
JWDT1+JOBS1	<ul style="list-style-type: none"> One 1x5 2.54mm pin header with one blue, long-tail Jump CAP 2-3:Enable watchdog (default) 4-5:Enable sound for system error(default) 	

Power Distribution

