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ASB-L8762

EPIC,4” Industrial Motherboard

Socket G2, 3rd and 2nd Generation Intel Core i3/i5/i7 Processors

User’s Manual

Version：1.00

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1 Packing List

Thank you for purchasing an Aplex Product!
Open the motherboard package and check for the following items. If the motherboard or accessories are found damaged or missing, please contact your distributor immediately.

- ● 1 x ASB-L8762 4” Industrial Motherboard
- ○ 3 x Serial Cable (option)
- ○ 4 x SATA Cable (option)
- ○ 2 x SATA Power Cable (option)
- ○ 1 x Audio Cable (option)
- ○ 1 x Driver Utility CD (option)
- ○ 1 x TB-522 I/O Card (option)
- ○ 1 x TB-523 I/O Card (option)
- ○ 1 x TB-525E11 Riser Card for ASB-L8762 (option)
- ○ 1 x TB-525E12 Riser Card for ASB-L8762 (option)
- ○ 1 x TB-525P1 Riser Card for ASB-L8762 (option)

2 Disclaimer

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3 Trademarks

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Core i3/i5/i7 are trademarks owned by Intel Corporation.
Other trademarks mentioned in this manual are owned by their respective holders.

4 Safety Notices

4.1 Before using the product, please read this manual carefully.
4.2 Please handle the motherboard with necessary ESD protection measures. For example, when putting unused motherboard into the antistatic bag, please wear antistatic gloves before touching the motherboard.
4.3 Never bend the motherboard.
4.4 It is better to hold the motherboard by its edges.
4.5 Avoid turning on and off the PC frequently to prevent possible damages to the motherbo-

ard.

4.6 Be sure to unplug the system before installing or removing onboard devices.

5 Introduction

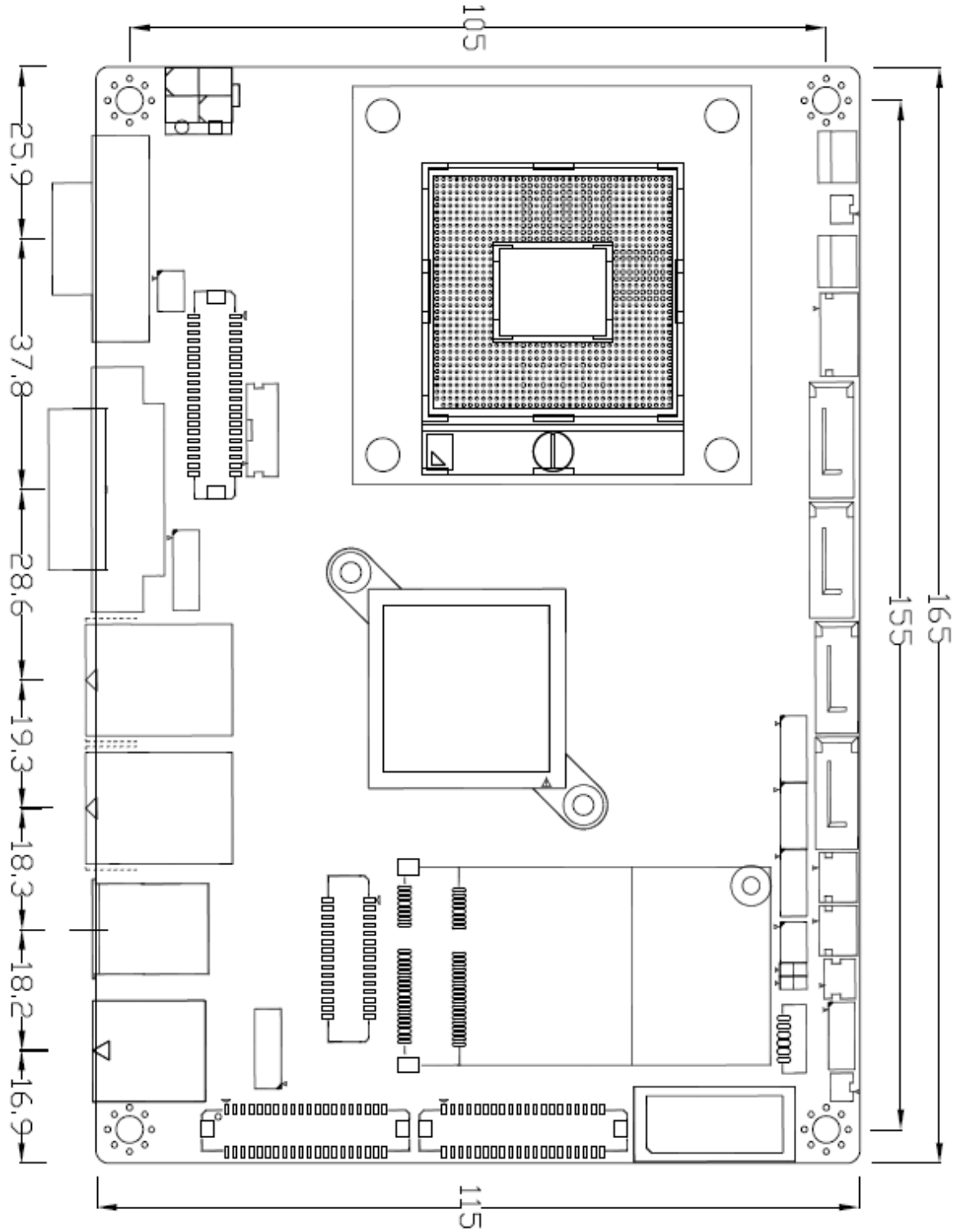
ASB-L8762 is a 4” industrial motherboard developed on the basis of Intel HM76,which provides abundant peripheral interfaces to meet the needs of different customers. Also, it features dual GbE ports, 6-COM ports and one Mini PCIE configuration. To satisfy the special needs of high-end customers, ADOtec designed 40Pin PCIe x1 expansion interface. The product is widely used in various sectors of industrial control.

5.1 Specifications

Specifications	
Board Size	165mm x 115mm
CPU Support	Support Socket G2,3rd and 2nd Gen Intel Core i3/i5/i7 Processors
Chipset	Intel HM76
Memory Support	1 x SO-DIMM (204pins),up to 8GB DDRIII 1066/1333/1600MHz FSB
Graphics	Intel HD Graphics 4000
Super I/O	Winbond W83627UHG
BIOS	AMIBIOS 16M
Display	1 x DVI-I Port 1 x 24 bit 2CH LVDS 1 x CRT 2x6 Pin Header 1 x DP Port by DF13-30P
Storage	2 x SATAII Connector 2 x SATAIII Connector
Ethernet	2 x PCIe Gbe LAN by Intel 82583V
USB	2 x USB 3.0 stack ports for external （USB3） 2 x USB 2.0 stack ports for external (USB45) 2 x USB 2.0 Pin header for MIO1 4 x USB 2.0 Pin header for MIO2 1 x USB 2.0 internal for mini PCIe 1 x USB 2.0 internal（M_SATA1）
Serial	1 x RS232 port, DB9 connector for external (COM1) pin 9 w/5V/12V/Ring select 2 x RS232 header for internal (COM2/COM5) 1 x 422/485 select header for internal MIO1 (COM3) 1 x RS232 header for internal MIO1 (COM4)

	1 x RS232 header for internal (COM6) pin 9 w/5V/12V/Ring select I/O Card TB-523 (option): 1 x 422/485 select header for internal MIO1 (COM3) 1 x RS232/422/485 select header for internal MIO1 (COM4)
Digital I/O	8-bit digital I/O by Pin header by MIO2 4-bit digital Input 4-bit digital Output
Battery	Support CR2477 Li battery by 2-pin header
Audio	Support Audio via Realtek ALC662 HD audio codec Support Line-in, Line-out, MIC by 2x6-pin header
Keyboard /Mouse	PS2 K/B and Mouse by MIO2 1 x PS/2 keyboard 1 x PS/2 mouse
Expansion Bus	2 x PCI-express x1 extend by 4x10 pin socket 1 x mini-PCIe slot 1 x mini-PCIe slot,Co-lay mini-SATA
Power Management	1 x 2-pin power input connector (DC+12V) 1 x 2x2Pin Power Input connector（DC+12V,option）
Switches and LED Indicators	Power on/off switch by TB-523 Reset switch by MIO2 Power LED status by MIO2 HDD LED status by MIO2
External I/O port	1 x COM Ports (COM1) 2 x USB 2.0 Ports (stack) 2 x USB 3.0 Ports (stack) 2 x RJ45 GbE LAN Ports 1 x DVI-I Port
Watchdog Timer	Software programmable 1 – 255 second by Super I/O
Temperature	Operating: -20℃ to 70℃ Storage: -40℃ to 85℃
Humidity	10% - 90%, non-condensing, operating
Power Consumption	12V/3.60A (Intel i5-2430M 2.4GHz Processor with 4GB DDR3)
EMI/EMS	Meet CE/FCC class A

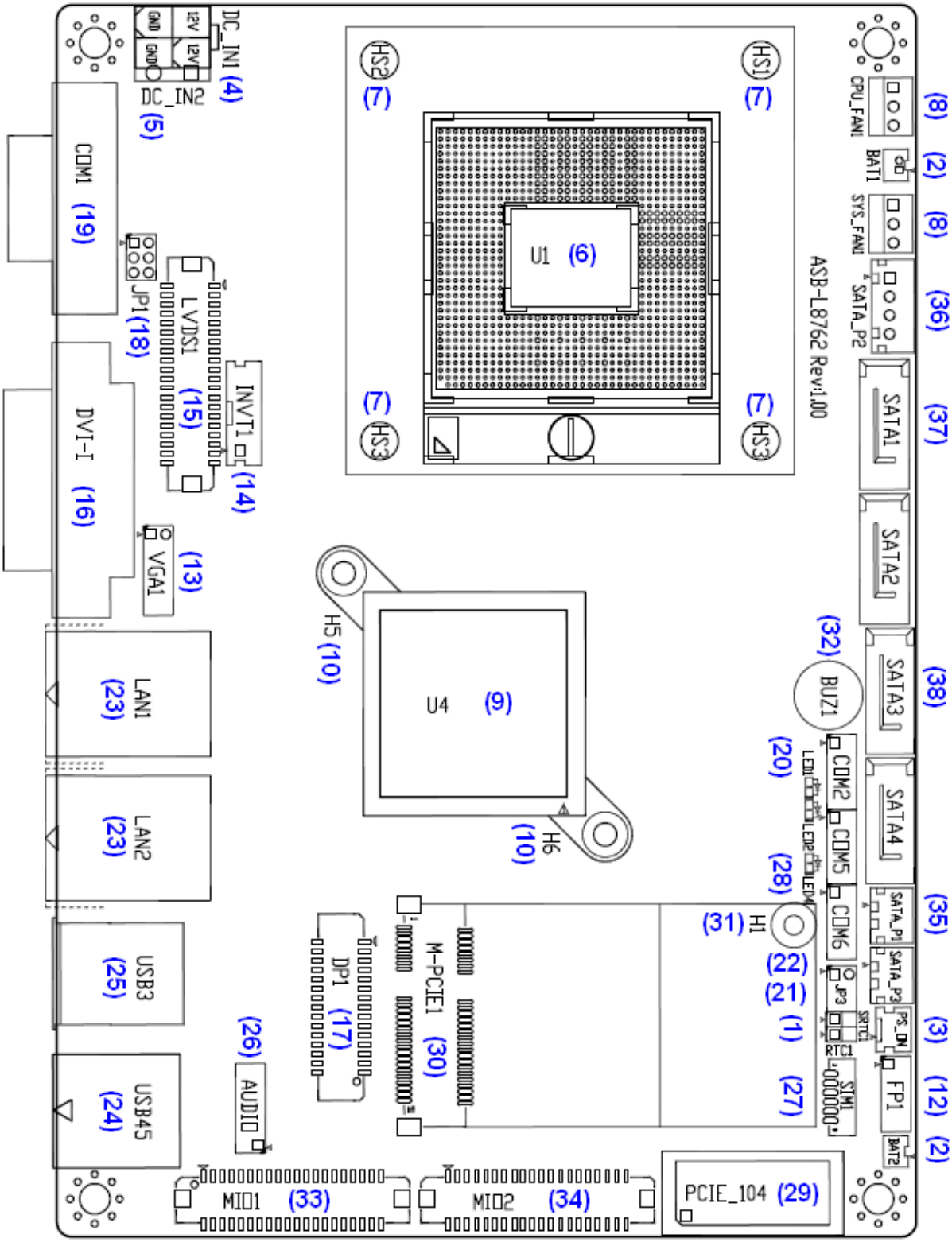
5.2 Board Dimensions



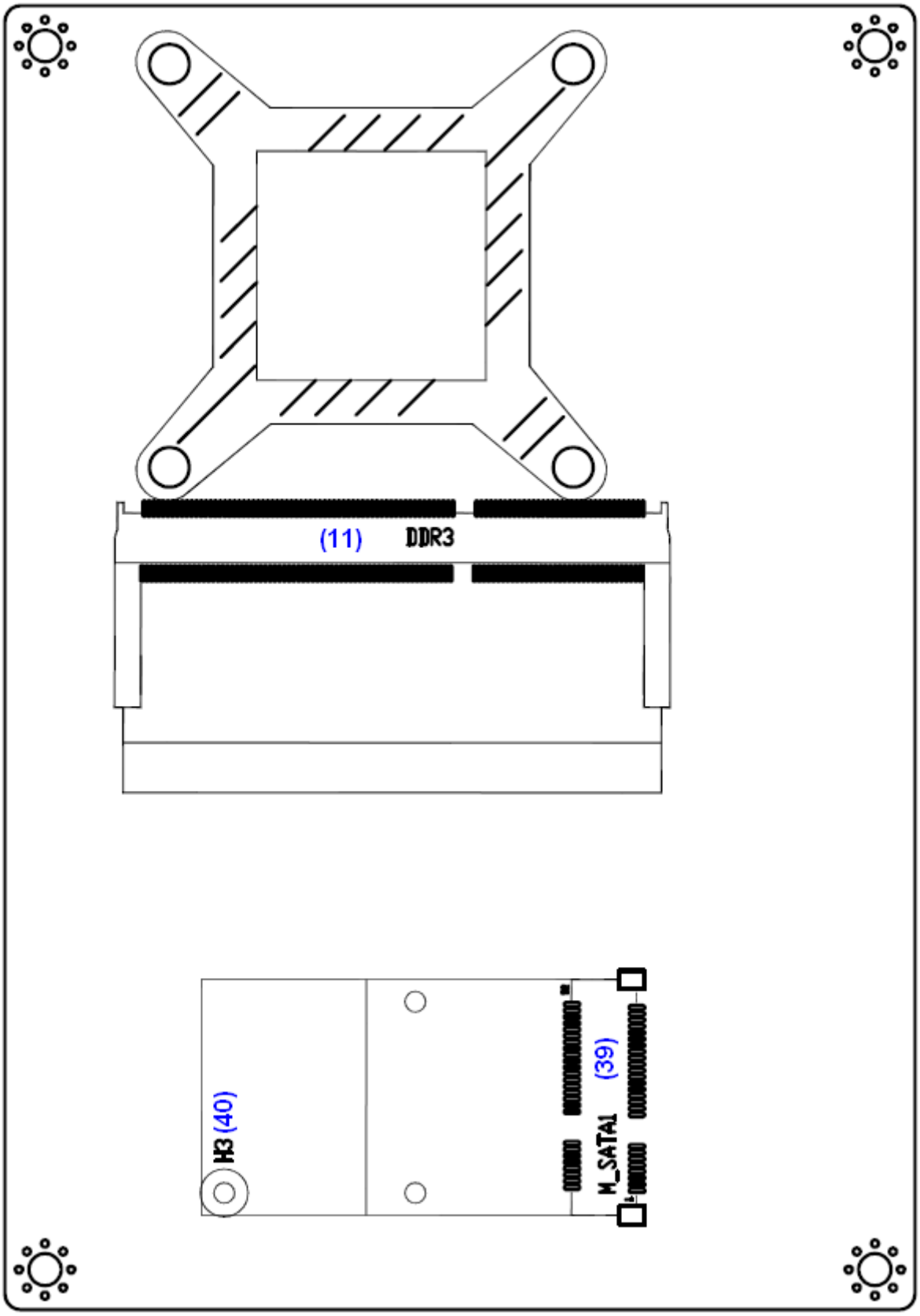
(units :mm)

5.3 Jumpers and Connectors Location

Board Top



Board Bottom



5.4 Jumpers Setting and Connectors

1. RTC1/SRTC1:

(2.0mm Pitch 1X2 Pin Header)CMOS clear jumper, CMOS clear operation will permanently reset old BIOS settings to factory defaults.

RTC1/SRTC1	CMOS
Open	NORMAL (Default)
Close 1-2	Clear CMOS

Procedures of CMOS clear:

a) Turn off the system and unplug the power cord from the power outlet.

b) To clear the CMOS settings, use the jumper cap to close pins1 and 2 for about 3 seconds then reinstall the jumper clip back to pins open.

c) Power on the system again.

d) When entering the POST screen, press the <DEL> key to enter CMOS Setup Utility to load optimal defaults.

e) After the above operations, save changes and exit BIOS Setup.

2. BAT1/BAT2 :

(1.25mm Pitch 1X2 box Pin Header) 3.0V Li battery is embedded to provide power for CMOS.

Pin#	Signal Name
Pin1	VBAT
Pin2	Ground

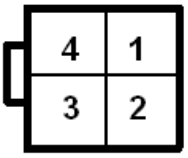
3. PS_ON:

(2.0mm Pitch 1X2 Pin Header),ATX Power and Auto Power on jumper setting.

PS_ON	Mode
Close 1-2	**Auto Power on (Default)**
Open	ATX Power

4. DC_IN1 (option):

(2x2 Pin Connector),DC12V System power **input** connector.



Pin#	Power input
Pin1	Ground
Pin2	Ground

Pin3	DC+12V
Pin4	DC+12V

5. DCIN:

(5.08mm Pitch 1x2 Pin Connector),DC12V System power input connector。

Pin#	Power Input
Pin1	DC+12V
Pin2	Ground

6. U1:

(Socket G2), installing the 3rd and 2nd GEN intel Core i3/i5/i7CPU Socket.

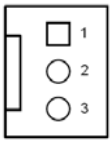
Support for 2nd and 3rd generation Intel® Core™ processors with Turbo Boost Technology 2.0,1 Intel® Pentium® processor, and Intel® Celeron® processor.Mobile Intel® 7 Series HM76 Express Chipset also enables overclocking features of unlocked 3rd generation Intel Core processors.

7. HS1/HS2/HS3/HS4(CPU SCREW HOLES):

CPU FAN SCREW HOLES, Four screw holes for fixed CPU Cooler assemble.

8. CPU_FAN1/SYS_FAN1:

(2.54mm Pitch 1x3 Pin Header),Fan connector, cooling fans can be connected directly for use. You may set the rotation condition of cooling fan in menu of BIOS CMOS Setup.



Pin#	Signal Name
1	Ground
2	VCC
3	Rotation detection

Note:

Output power of cooling fan must be limited under 5W.

9. U4：

Intel HM76 chipset.

10. H5/H6:

U4 SCREW HOLES.

11. DDR3:

(SO-DIMM 204Pin socket), DDRIII memory socket, the socket is located at the top of the board and supports 204Pin 1.5V DDRIII 1066/1333/1600MHz FSB SO-DIMM memory

module up to 8GB.

12. FP1:

(2.0mm Pitch 2x5 Pin Header), Front panel connector.

Signal Name	Pin#	Pin#	Signal Name
HDD LED+	1	2	POWER LED+
Ground	3	4	Ground
Ground	5	6	SW+
RESET+	7	8	Ground
BUZZER+	9	10	BUZZER-

Pin1-3: **HDD LED**, They are used to connect hard disk activity LED. The LED blinks when the hard disk is reading or writing data.

Pin2-4: **POWER LED**, They are used to connect power LED. When the system is powered on or under S0/S1 state, the LED is normally on; when the system is under S4/S5 state, the LED is off.

Pin5-6: **POWER on/off Button**, They are used to connect power switch button. The two pins are disconnected under normal condition. You may short them temporarily to realize system startup & shutdown or awaken the system from sleep state.

Pin7-8: **RESET Button**, They are used to connect reset button. The two pins are disconnected under normal condition. You may short them temporarily to realize system reset.

Pin9-10: **BUZZER**, They are used to connect an external buzzer.

Note:

When connecting LEDs and buzzer, pay special attention to the signal polarity. Make sure that the connector pins have a one-to-one correspondence with chassis wiring, or it may cause boot up failure.

13. VGA1:

(CRT 2.0mm Pitch 2x6 Pin Header),Video Graphic Array Port, Provide 2x6Pin cable to VGA Port.

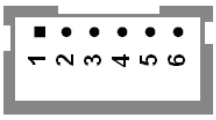
Signal Name	Pin#	Pin#	Signal Name
CRT_RED	1	2	Ground
CRT_GREEN	3	4	Ground
CRT_BLUE	5	6	VGA_EN
CRT_H_SYNC	7	8	CRT_DDCDATA
CRT_V_SYNC	9	10	CRT_DDCCLK
Ground	11	12	Ground

VGA hot plug setting for Windows XP：	
VGA1（Pin Header）	Function

Pin4-Pin6（Close）	VGA Simulation Disabled
Pin4-Pin6（Open）	VGA Simulation Enabled
use the 2.0mm jumper cap to close pin4 and pin6	

14. INVT1:

(2.0mm Pitch 1x6 wafer Connector),Backlight control connector for LVDS1.



Pin#	Signal Name
1	+DC12V
2	+DC12V
3	Ground
4	Ground
5	BKLT_EN
6	BKLT_CTRL

Note:

Pin6 is backlight control signal, support DC or PWM mode, mode select at BIOS CMOS menu.

15. LVDS1:

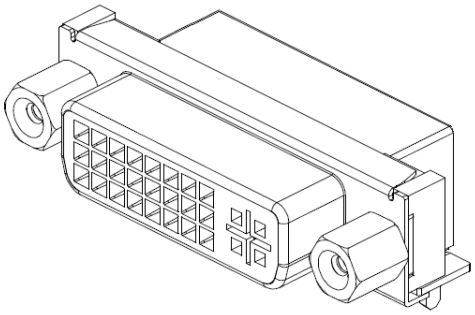
(1.25mm Pitch 2x20 Connector,DF13-40P), For 18/24-bit LVDS output connector, Fully supported by Intel HM76 chipset, the interface features dual channel 18/24-bit output.

Signal Name	Pin#	Pin#	Signal Name
VDD5	2	1	VDD5
Ground	4	3	Ground
VDD33	6	5	VDD33
LB_D0_N	8	7	LA_D0_N
LB_D0_P	10	9	LA_D0_P
Ground	12	11	Ground
LB_D1_N	14	13	LA_D1_N
LA_D1_P	16	15	LA_D1_P
Ground	18	17	Ground
LB_D2_N	20	19	LA_D2_N
LB_D2_P	22	21	LA_D2_P
Ground	24	23	Ground
LB_CLK_N	26	25	LA_CLK_N
LB_CLK_P	28	27	LA_CLK_P
Ground	30	29	Ground
LVDS_DDC_DATA	32	31	LVDS_DDC_CLK

Ground	34	33	Ground
LB_D3_N	36	35	LA_D3_N
LB_D3_P	38	37	LA_D3_P
NC	40	39	NC

16. DVI-I:

(DVI-I Connector), Digital Visual Interface-Integrated connector.



17. DP1:

(1.25mm Pitch 2x15 Connector,DF13-30P),For Display Port output expansion connector.

Signal Name	Pin#	Pin#	Signal Name
NC	2	1	NC
5V_S5	4	3	5V_S5
DDP_D_HPD	6	5	PS_ON_ALL-
Ground	8	7	Ground
DDP_D_CTL_DAT	10	9	DDP_D_CTL_CLK
DDP_D_AUX+	12	11	DDP_D_AUX-
DDP_D_D0+	14	13	DDP_D_D0-
DDP_D_D1+	16	15	DDP_D_D1-
DDP_D_D2+	18	17	DDP_D_D2-
DDP_D_D3+	20	19	DDP_D_D3-
Ground	22	21	Ground
3P3V_S0	24	23	3P3V_S0
Ground	26	25	Ground
12V_S0	28	27	12V_S0
12V_S0	30	29	12V_S0

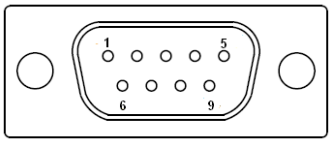
18. JP1:

(2.0mm Pitch 2x3 Pin Header),COM1 jumper setting, pin 1~6 are used to select signal out of pin 9 of COM1 port.

JP1 Pin#	Function
Close 1-2	**COM1 RI (Ring Indicator) (default)**
Close 3-4	COM1 Pin9=+5V (option)
Close 5-6	COM1 Pin9=+12V (option)

19. COM1:

(Type DB9),Rear serial port, standard DB9 Male serial port is provided to make a direct connection to serial devices.



Pin#	Signal Name
1	DCD# (Data Carrier Detect)
2	RXD (Received Data)
3	TXD (Transmit Data)
4	DTR (Data Terminal Ready)
5	Ground
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	**JP1 select Setting (RI/5V/12V)**

20. COM2/COM5:

(2.0mm Pitch 2X5 Pin Header),COM2 and COM5 Port, standard RS232 ports are provided. They can be used directly via COM cable connection.

Signal Name	Pin#	Pin#	Signal Name
DCD	1	2	RXD
TXD	3	4	DTR
Ground	5	6	DSR
RTS	7	8	CTS
RI	9	10	NC

21. JP3:

(2.0mm Pitch 2x3 Pin Header) COM6 setting jumper, pin 1~6 are used to select signal out of pin 9 of COM6 port.

JP3 Pin#	Function
Close 1-2	**COM6 RI (Ring Indicator) (default)**
Close 3-4	COM6 Pin9=+5V (option)
Close 5-6	COM6 Pin9=+12V (option)

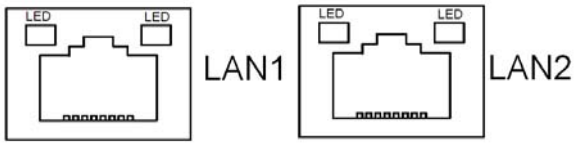
22. COM6:

(2.0mm Pitch 2x5 Pin Header), COM6 Port, standard RS232 ports are provided.They can be used directly via COM cable connection. COM6 port is controlled by pins No.1~6 of JP3,select output Signal 5V or 12V, For details, please refer to description of **JP3**.

Signal Name	Pin#	Pin#	Signal Name
DCD	1	2	RXD
TXD	3	4	DTR
Ground	5	6	DSR
RTS	7	8	CTS
JP3 select Setting (RI/5V/12V)	9	10	NC

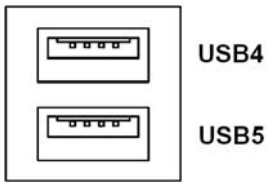
23. LAN1/LAN2:

(RJ45 Connector), Rear LAN port, Two standard 10/100/1000M RJ-45 Ethernet ports are provided. Used Intel 82583V chipset, LINK LED (green) and ACTIVE LED (yellow) respectively located at the left-hand and right-hand side of the Ethernet port indicate the activity and transmission state of LAN.



24. USB45:

USB4/USB5：(Double stack USB type A), Rear USB connector, it provides up to two USB2.0 ports, speed up to 480Mbps.

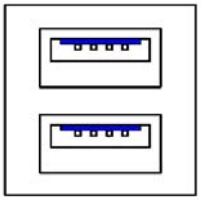


Each USB Type A Receptacle (2 Ports) Current limited value is 1.5A.
If the external USB device current exceeds 1.5A, please separate connectors into different Receptacle.

25. USB3:

USB0/USB1：(Double stack USB type A),Rear USB connector,it provides up to two USB2.0 and USB3.0 ports.USB2.0 speed up to 480Mbps.

Integrated USB 3.0 support,provides greater enhancement in performance with a design data rate of up to 5 gigabits per second (Gbps) with up to 2 USB 3.0 ports.



Each USB Type A Receptacle (2 Ports) Current limited value is 1.5A.
If the external USB device current exceeds 1.5A, please separate connectors into different Receptacle.

26. AUDIO:

(2.0mm Pitch 2X6 Pin Header), Front Audio, An onboard Realtek ALC662 codec is used to provide high-quality audio I/O ports. Line Out can be connected to a headphone or amplifier. Line In is used for the connection of external audio source via a Line in cable. MIC is the port for microphone input audio.

Signal Name	Pin#	Pin#	Signal Name
5V	1	2	Ground_AUD
LINE_OUT_L	3	4	LINE-OUT-R
FRONT_JD	5	6	LINE1_JD
LINE-IN-L	7	8	LINE-IN-R
MIC-IN-L	9	10	MIC-IN-R
Ground_AUD	11	12	MIC1_JD

27. SIM1 (option):

(2.0mm Pitch 1x6 wafer Connector), Support SIM Card devices.

Pin#	Signal Name
1	SIM_VCC
2	Ground
3	SIM_RST
4	NC
5	SIM_CLK
6	SIM_IO

28. LED1/LED2/LED3:

LED1：LED STATUS. Green LED for Motherboard Power status,
LED2：LED STATUS. Green LED for Motherboard Standby Power Good status.
LED3：LED STATUS. Green LED for Motherboard Standby Power Good status.

29. PCIE_104(option):

(4x10 Pin socket),Riser Card expansion connector.Can expand support two PCIe [1X] Signal.

30. M-PCIE1:

(Socket 52Pin),mini PCIe socket, it is located at the top, it supports mini PCIe devices with USB2.0,SIM and SMBUS signal. MPCIe card size is 30x50.95mm.

31. H1:

MPCIE1 SCREW HOLES,H1 for mini PCIE card (30mmx50.95mm) assemble.

32. BUZ1:

Onboard buzzer.

33. MIO1:

(DF13-40P Connector),For expand output connector, It provides two RS232 ports or one

RS485 port, three USB ports, one power led, one power button, via a dedicated cable connected **to TB-522 MIO1or TB-523 MIO1.**

Function	Signal Name	Pin#	Pin#	Signal Name	Function
COM3 RS422 or RS485	485+ / 422TX+	2	1	422RX+	COM3
	485- / 422TX-	4	3	422RX-	
	3P3V_S0	6	5	Ground	
	WAN_LED	8	7	WLAN_EN	
	5V_S5	10	9	5V_S5	
COM4	RXD4	12	11	DCD4-	COM4
	DTR4-	14	13	TXD4	
	DSR4-	16	15	Ground	
	CTS4-	18	17	RTS4-	
	5V_S5	20	19	RI4-	
USB12	5V_USB_1213	22	21	5V_S5	USB3
	USB12_N	24	23	USB3_N	
	USB12_P	26	25	USB3_P	
	Ground	28	27	Ground	
	Ground	30	29	Ground	
Power LED	3P3V_S0	32	31	5V_USB_1213	USB13
	Ground	34	33	USB13_N	
Power Button	MIO_PSON	36	35	USB13_P	
	Ground	38	37	Ground	
	AUTO_PSON-	40	39	NC	

34. MIO2:

(DF13-40P Connector),Front panel connector.

Function	Signal Name	Pin#		Signal Name	Function
P_LED+	PWR-LED	2	1	HDD_LED	H_LED+
P_LED-	Ground	4	3	USB01_OC-	
PSON+	MIO_PSON-	6	5	USB67_OC-	
PSON-	Ground	8	7	RESET	RESET+
BUZZER-	BUZZER-	10	9	BUZZER+	BUZZER+
GPIO_OUT1	PCH_GPIO68	12	11	PCH_GPIO27	GPIO_IN1
GPIO_OUT2	PCH_GPIO69	14	13	PCH_GPIO57	GPIO_IN2
GPIO_OUT3	PCH_GPIO70	16	15	PCH_GPIO58	GPIO_IN3
GPIO_OUT4	PCH_GPIO71	18	17	PCH_GPIO75	GPIO_IN4
PS2_Mouse	5V_S5_USB	20	19	Ground	PS2_K/B
	PS2_MSDATA	22	21	PS2_KBDATA	
	PS2_MSCLK	24	23	PS2_KBCLK	
USB7 (USB2.0)	5V_S5_USB	26	25	5V_S5_USB	USB6 (USB2.0)
	USB7_N	28	27	USB6_N	
	USB7_P	30	29	USB6_P	

	Ground	32	31	Ground	
USB9 (USB2.0)	5V_S5_USB	34	33	5V_S5_USB	USB8 (USB2.0)
	USB9_N	36	35	USB8_N	
	USB9_P	38	37	USB8_P	
	Ground	40	39	Ground	

Pin1- Ground: **HDD LED**, They are used to connect hard disk activity LED. The LED blinks when the hard disk is reading or writing data.

Pin2- Pin4: **POWER LED**, They are used to connect power LED. When the system is powered on or under S0/S1 state, the LED is normally on, when the system is under S4/S5 state, the LED is off.

Pin3: **USB01 OC-**, "USB01_OC-" Signal.

Pin5: **USB67 OC-**,"USB67_OC-" Signal.

Pin7- Ground: **RESET Button**, They are used to connect reset button. The two pins are disconnected under normal condition. You may short them temporarily to realize system reset.

Pin6- Pin8: **POWER on/off Button**, They are used to connect power switch button. The two pins are disconnected under normal condition. You may short them temporarily to realize system startup & shutdown or awaken the system from sleep state.

Pin9- Pin10: **BUZZER**, They are used to connect an external buzzer.

Pin11~Pin18: **GPIO IN/GPIO OUT,** General-purpose input/output port, it provides a group of self-programming interfaces to customers for flexible use.

Pin19~Pin24: **PS2 KB/MS,** PS/2 keyboard and mouse port, the port can be connected to PS/2 keyboard and mouse via a dedicated cable for direct used.

Pin25~40: **USB6/USB7/USB8/USB9**, Front USB connector, it provides 4 USB2.0 ports via a dedicated USB cable, speed up to 480Mbps.

Note:

When connecting LEDs and buzzer and GPIO and USB, pay special attention to the signal polarity. Make sure that the connector pins have a one-to-one correspondence with chassis wiring, or it may cause boot up failure.

35. SATA_P1/SATA_P3:

(2.5mm Pitch 1x2 Pin wafer Connector), Two onboard 5V output connectors are reserved to provide power for SATA devices.

Pin#	Signal Name
1	+DC5V（output）
2	Ground

Note:

Output current of the connector must not be above 1A.

36. SATA_P2:

(2.5mm Pitch 1x4 Pin wafer Connector), One onboard 5V and 12V output connectors are reserved to provide power for SATA devices.

Pin#	Signal Name
1	+DC5V（output）
2	Ground
3	Ground
4	+DC12V（output）

Note:

Output current of the connector must not be above 1A.

37. SATA1/SATA2:

(SATA 7P),SATA Connectors,Two SATA connectors are provided.Next-generation high-speed storage interface supporting up to 6 Gb/s transfer rates for optimal data access with up to 2 SATA 6Gb/s ports.

38. SATA3/SATA4:

(SATA 7P),SATA Connectors,Two SATA connectors are provided,High-speed storage interface supporting up to 2 SATA 3Gb/s ports.

Position	Function	Color
SATA1	SATAIII	Blue
SATA2	SATAIII	Blue
SATA3	SATAII	black
SATA4	SATAII	black

39. M_SATA1:

(50.95mmx30mm Socket 52Pin),mini PCIe socket, it is located at the bottom, it supports mini PCIe devices with USB2.0,LPC,SMBUS and B2 mSATA bus for flash disk signal.

M_SATA1	Function
Default	Mini PCIe/ LPC/ USB2.0/ SMBUS
Option	mSATA/ LPC/ USB2.0/ SMBUS

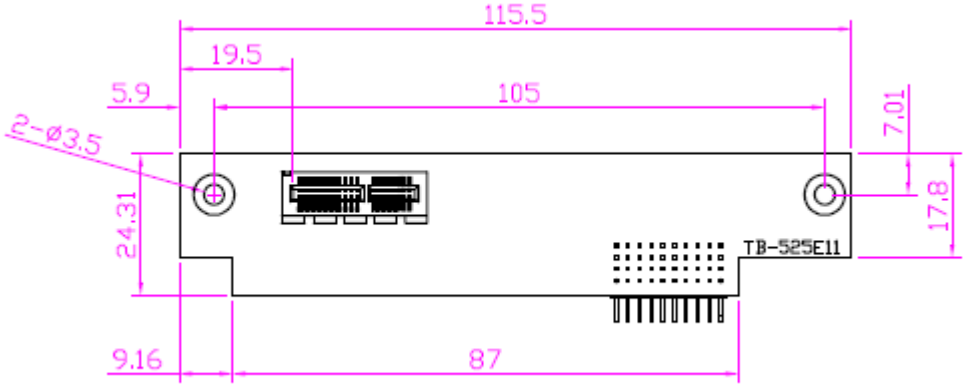
40. H3:

M_SATA1 SCREW HOLES.

H3 for mini MSATA card (50.95mmx30mm Socket 52 Pin) assemble.

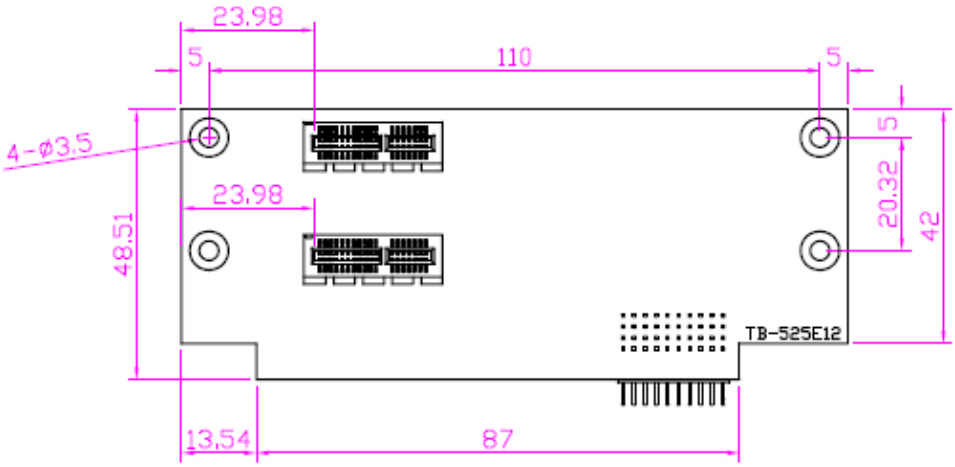
41. TB-525E11:

TB-525E11 connect to ASB-L8762 PCIE_104 connector, PCIE_104 is located at the top,It provides one PCIE X1 slot.



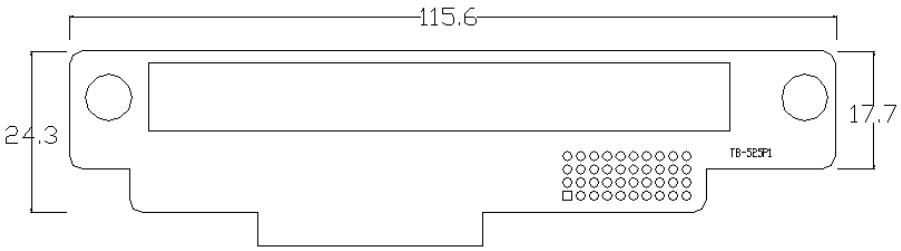
42. TB-525E12:

TB-525E12 connect to ASB-L8762 PCIE_104 connector, PCIE_104 is located at the top,It provides two PCIE X1 slot.



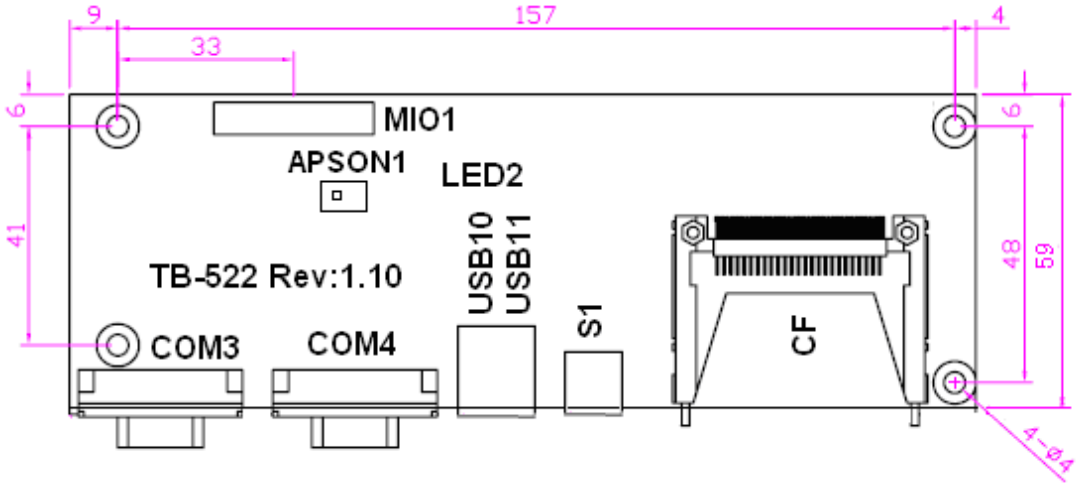
43. TB-525P1:

TB-525P1 connect to ASB-L8762 PCIE_104 connector, PCIE_104 is located at the top,It provides one PCI slot.



44. TB-522(option):

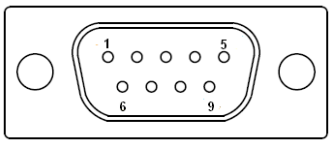
ASB-L8762 I/O Card, via a dedicated cable connected to ASB-L8762 MIO1.



LED2:
CF Card LED status.

S1:
PWR BT: POWER on/off Button, They are used to connect power switch button. The two pins are disconnected under normal condition. You may short them temporarily to realize system startup & shutdown or awaken the system from sleep state.
PWR LED: POWER LED status.

COM3:
(Type DB9),I/O serial port, it provides selectable RS422/RS485 serial signal output.



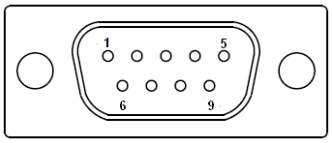
RS422 Type (option)		RS485 Type (option)	
Signal Name	Pin#	Pin#	Signal Name
422_RX+	1	1	NC
422_RX-	2	2	NC
422_TX-	3	3	485-
422_TX+	4	4	485+
Ground	5	5	Ground
NC	6	6	NC
NC	7	7	NC
NC	8	8	NC
NC	9	9	NC

Note:
Use COM3 RS422 or RS485 Function, please enter BIOS CMOS Setup. Path:
BIOS Setup Utility \ Advanced /Super IO Configuration \ Serial Port3 Type:

[RS-485]
[RS-422]

COM4:

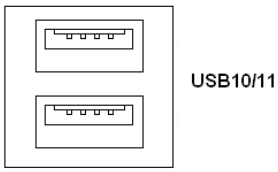
(Type DB9),Rear serial port, standard DB9 Male serial port is provided to make a direct connection to serial devices.



Pin#	Signal Name
1	DCD# (Data Carrier Detect)
2	RXD (Received Data)
3	TXD (Transmit Data)
4	DTR (Data Terminal Ready)
5	Ground
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	RI **(**Ring Indicator**)**

USB10,USB11:

(Double stack USB type A), I/O USB connector, it provides up to 2 USB2.0 ports, speed up to 480Mb/s.



Each USB Type A Receptacle (2 Ports) Current limited value is 1.5A.
If the external USB device current exceeds 1.5A, please separate connectors into different Receptacle.

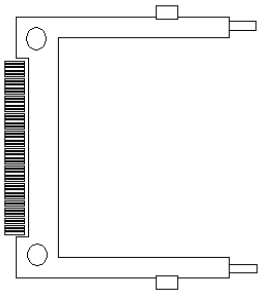
APSON1 (option)**:**

(2.0mm Pitch 1X2 Pin Header),ATX Power and Auto Power on jumper setting**.**

APSON1	Mode
Close 1-2	**Auto Power on (NC)**
Open 1-2	ATX Power (NC)

CF:

(CF Card socket), it is located at TB-522 and serves as an insert interface for Type I and Type II Compact Flash card. The operating voltage of CF card can be set as 3.3V or 5V. **The default setting of the product is 5V.**



MIO1:

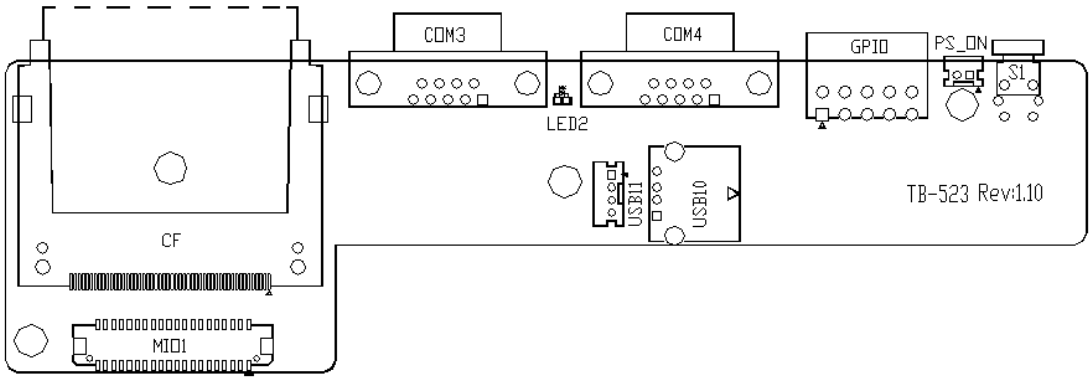
(DF13-40P) TB-522 MIO1 via a dedicated cable connected to ASB-M801 MIO1.

Signal Name	Pin#		Signal Name
422_RX+	1	2	485+_422TX+
422_RX-	3	4	485-_422TX-
Ground	5	6	NC
NC	7	8	NC
NC	9	10	5V_S5
DCD4-	11	12	RXD4
TXD4	13	14	DTR4-
Ground	15	16	DSR4-
RTS4-	17	18	CTS4-
RI4-	19	20	5V_S5
5V_S5	21	22	5V_USB1213
USB3_N	23	24	USB12_N
USB3_P	25	26	USB12_P
Ground	27	28	Ground
Ground	29	30	Ground
5V_USB1213	31	32	PWR_LED+
USB13_N	33	34	PWR_LED-
USB13_P	35	36	MIO_PS_ON-
Ground	37	38	Ground
NC	39	40	AUTO_PSON-

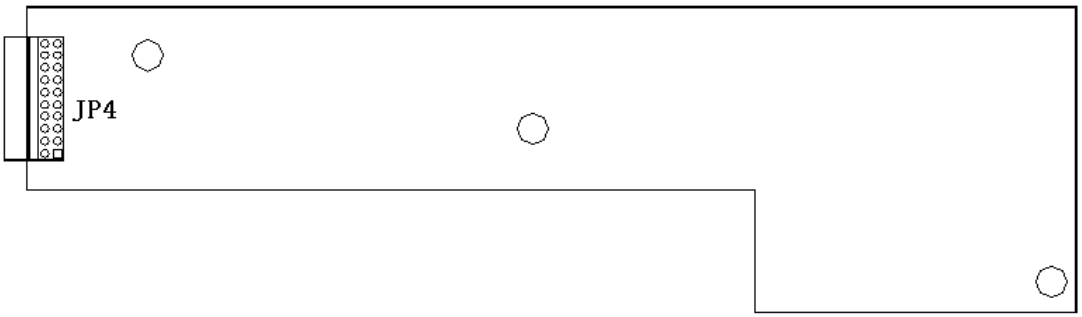
45. TB-523(option):

ASB-L8762 I/O Card, via a dedicated cable connected to ASB-L8762 MIO1 and MIO2.

TB-523 Top：



TB-523 Bottom：



LED2:

CF Card LED status.

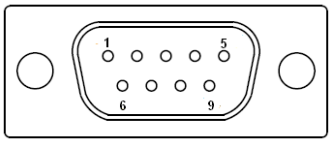
S1:

PWR BT: POWER on/off Button, They are used to connect power switch button. The two pins are disconnected under normal condition. You may short them temporarily to realize system startup & shutdown or awaken the system from sleep state.

PWR LED: POWER LED status.

COM3:

(Type DB9),I/O serial port, it provides selectable RS422/RS485 serial signal output.



RS422 Type (option)		RS485 Type (option)	
Signal Name	Pin#	Pin#	Signal Name
422_RX+	1	1	NC
422_RX-	2	2	NC
422_TX-	3	3	485-
422_TX+	4	4	485+

Ground	5	5	Ground
NC	6	6	NC
NC	7	7	NC
NC	8	8	NC
NC	9	9	NC

Note:

Use COM3 RS422 or RS485 Function, please enter BIOS CMOS Setup. Path:
BIOS Setup Utility \ Advanced /Super IO Configuration \ Serial Port3 Type:

[RS-485]

[RS-422]

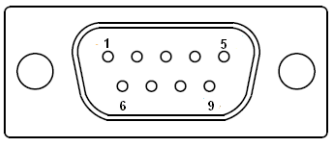
JP4:

(2.0mm Pitch 2x10 Pin Header) COM4 function setting jumper.

Function	JP4 Pin#
RS232	**Close: 3-5,4-6,10-12,11-13 (Default)**
RS422	Close: 1-3,2-4,5-7,8-10,9-11,12-14,18-20 (option)
RS485	Close: 5-7,8-10,9-11,12-14,16-18 (option)

COM4:

(Type DB9), I/O serial port, it provides selectable RS232/RS422/RS485 serial signal output.



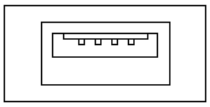
COM4 RS232 Type (Default)：	
Pin#	Signal Name
1	DCD# (Data Carrier Detect)
2	RXD (Received Data)
3	TXD (Transmit Data)
4	DTR (Data Terminal Ready)
5	Ground
6	DSR (Data Set Ready)
7	RTS (Request To Send)
8	CTS (Clear To Send)
9	RI (Ring Indicator)

COM4 RS422 Type (option)		**COM4 RS485 Type** (option)	
Signal Name	Pin#	Pin#	Signal Name
422_RX+	1	1	NC

422_RX-	2	2	NC
422_TX-	3	3	485-
422_TX+	4	4	485+
Ground	5	5	Ground
NC	6	6	NC
NC	7	7	NC
NC	8	8	NC
NC	9	9	NC

USB10:

(Single stack USB type A), I/O USB connector, it provides one USB2.0 port, speed up to 480Mb/s.



USB11:

(2.0mm Pitch 1x4 box Pin Header), I/O USB connector, it provides one USB2.0 port, speed up to 480Mb/s.

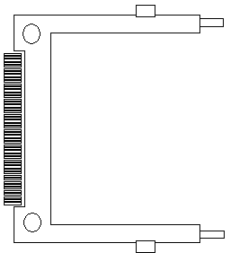
Pin#	Signal Name
1	5V_USB1213
2	USB13_N
3	USB13_P
4	Ground

USB10 and USB11 current limited value is 1.5A.

If the external USB device current exceeds 1.5A, please separate connectors into different Receptacle.

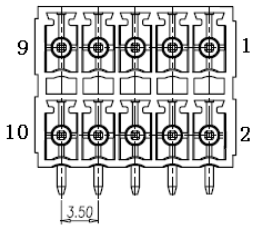
CF:

(CF Card socket), it is located at TB-523 and serves as an insert interface for Type I and Type II Compact Flash card. The operating voltage of CF card can be set as 3.3V or 5V. **The default setting of the product is 5V.**



GPIO:

(3.5mm Pitch 2x5 Pin Connector),General-purpose input/output port, it provides a group of self-programming interfaces to customers for flexible use.



Function	Pin#		Function
+5V	1	2	Ground
GPIO_IN1	3	4	GPIO_IN2
GPIO_IN3	5	6	GPIO_IN4
GPIO_OUT1	7	8	GPIO_OUT2
GPIO_OUT3	9	10	GPIO_OUT4

PS_ON (option):

(2.0mm Pitch 1X2 box Pin Header),ATX Power and Auto Power on jumper setting.

PS_ON	Mode
Close 1-2	Auto Power on (NC)
Open 1-2	ATX Power (NC)

MIO1:

(DF13-40P) TB-523 MIO1 via a dedicated Y cable connected to ASB-L8671 MIO1 and MIO2.

Signal Name	Pin#		Signal Name
422_RX+	1	2	485+_422TX+
422_RX-	3	4	485-_422TX-
Ground	5	6	GPIO_IN1
GPIO_IN2	7	8	GPIO_IN3
GPIO_IN4	9	10	5V_S5
DCD4-	11	12	RXD4
TXD4	13	14	DTR4-
Ground	15	16	DSR4-
RTS4-	17	18	CTS4-
RI4-	19	20	5V_S5
5V_USB1213	21	22	5V_USB1213
USB3_N	23	24	USB12_N
USB3_P	25	26	USB12_P
Ground	27	28	Ground

GPIO_OUT1	29	30	GPIO_OUT2
5V_USB1213	31	32	SO_POWER_SENSE
USB13_N	33	34	PWR_LED-
USB13_P	35	36	PS_ON-
Ground	37	38	Ground
GPIO_OUT3	39	40	GPIO_OUT4

6 BIOS Setup Description

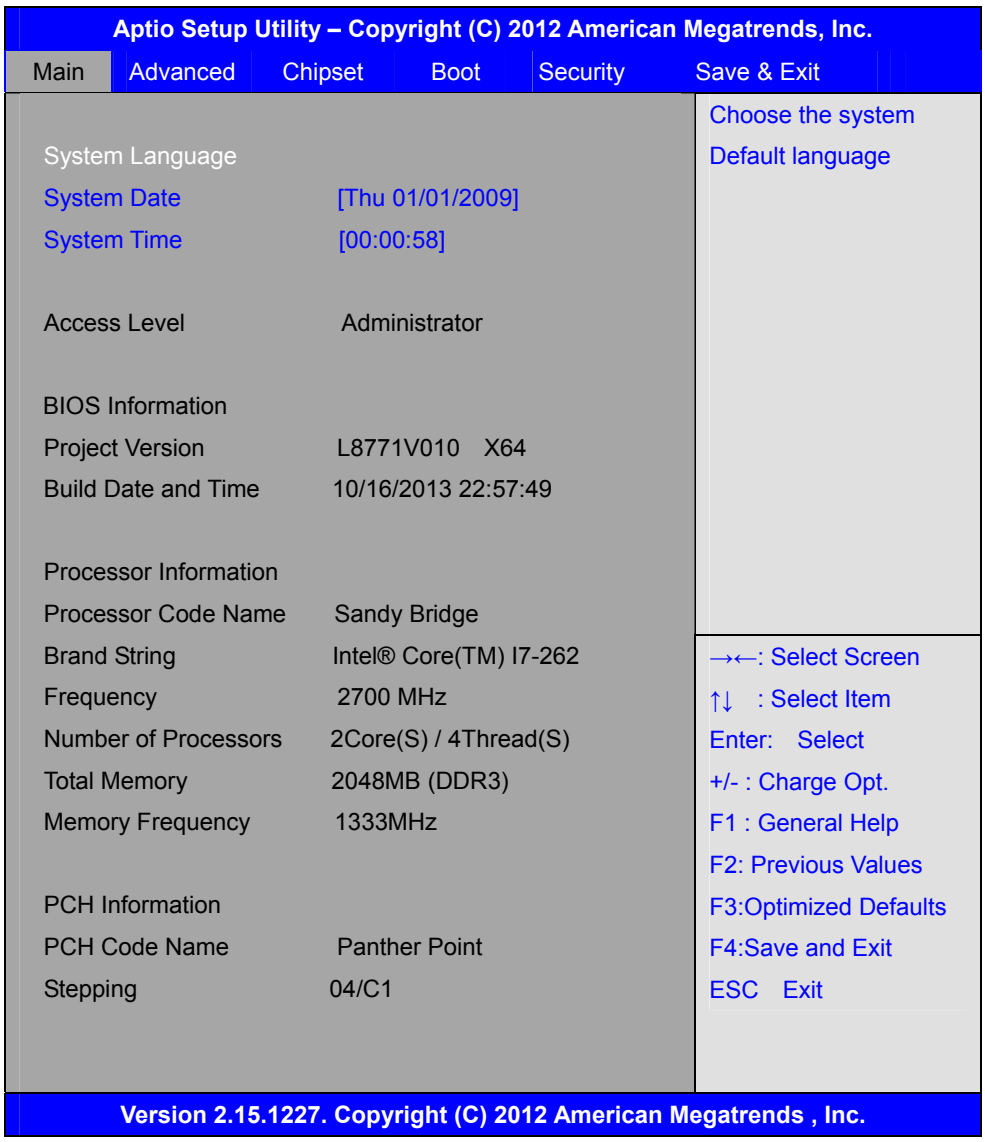
6.1 Operations after POST Screen

After CMOS discharge or BIOS flashing operation,.Press [Delete] key to enter CMOS Setup.

After optimizing and exiting CMOS Setup, the POST screen displayed for the first time is as follows and includes basic information on BIOS, CPU, memory, and storage devices.

6.2 BIOS SETUP UTILITY

Press [Delete] key to enter BIOS Setup utility during POST, and then a main menu containing system summary information will appear.



6.3 Main Settings

System Time:

Set the system time, the time format is:

Hour : 0 to 23
Minute : 0 to 59
Second : 0 to 59

System Date:

Set the system date, the date format is:

Day: Note that the 'Day' automatically changes when you set the date.
Month: 01 to 12
Date: 01 to 31
Year: 1998 to 2099

6.4 Advanced Settings

Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.	
Main Advanced Chipset Boot Security Save & Exit	
►PCI Subsystem Settings	PCI,PCI-X and PCI Express Settings.
►ACPI Settings	
►CPU Configuration	
►SATA Configuration	
►Thermal Configuration	
►Intel(R) Rapid Start Technology	
►PCH-FW Configuration	
►Intel(R) Anti-Theft Technology Configuration	
►AMT Configuration	→←: Select Screen
►USB Configuration	↑↓ : Select Item
►Super IO Configuration	Enter: Select
►Hardware Monitor	+/- : Charge Opt.
►Platform Misc Configuration	F1 : General Help
►Intel(R) Smart Console Technology	F2: Previous Values
►Serial Port Console Redirection	F3:Optimized Defaults
►Intel RC Drivers Version Detail	F4:Save and Exit
►CPU PPM Configuration	ESC Exit
Version 2.15.1227. Copyright (C) 2012 American Megatrends , Inc.	

6.4.1 PCI Subsystem Settings

PCI Bus Driver Versio V2.05.02

PCI 64bit Resources Handling

Above 4G Decoding: **[Disabled]**

[Enabled]

PCI Common Settings:

PCI Latency Timer:

[32 PCI Bus Clocks]

[64 PCI Bus Clocks]

[96 PCI Bus Clocks]

[128 PCI Bus Clocks]

[160 PCI Bus Clocks]

[192 PCI Bus Clocks]

[224 PCI Bus Clocks]

[248 PCI Bus Clocks]

VGA Palette snoop:

[Disabled]

[Enabled]

PERR# Generation:

[Disabled]

[Enabled]

SERR# Generation:

[Disabled]

[Enabled]

PCI Express Device Settings:

Relaxed Ordering:

[Disabled]

[Enabled]

Extended Tag:

[Disabled]

[Enabled]

No Snoop:

[Enabled]

[Disabled]

Maximum Payload:

[Auto]

[128 Bytes]

[256 Bytes]

[512 Bytes]

[1024 Bytes]

[2048 Bytes]

[4096 Bytes]

Maximum Read Request:

[Auto]

[128 Bytes]

[256 Bytes]

[512 Bytes]

[1024 Bytes]

[2048 Bytes]

[4096 Bytes]

PCI Express Link Settings:

ASPM Support:

[Disabled]

[Enabled]

WARNING:Ebabling ASPM may cause some PCI-E devices to fail

Extended Synch:

[Disabled]

[Enabled]

Link Training Retry [5]

Link Training Timeout(us) 100

Unpopulated Links [Keep Link ON]

6.4.2 ACPI Settings

Enable ACPI Auto Configuration:

[Disabled]
[Enabled]

Enable Hibernation:

[Enabled]
[Disabled]

ACPI Sleep State:

[Both S1 and S3 available for OS to choose from]
[Suspend Disabled]
[S1 only(CPU Stop Clock)]
[S3 only(CPU Stop RAM)]

Lock Legacy Resources:

[Disabled]
[Enabled]

S3 Video Repost:

[Disabled]
[Enabled]

6.4.3 CPU Configuration

Socket 0 CPU Information:

Intel(R) Core(TM) i7-2620M CPU @2.70GHz

CPU Signature	206a7
Microcode Patch	28
Max CPU Speed	2700 MHz
Min CPU Speed	800 Mhz
Processor Cores	2
Intel HT Technology	Supported
Intel VT-x Technology	Supported
Intel SMX Technology	Supported
64-bit	Supported

Hype-threading

[Enabled]
[Disabled]

Active Processor Cores

[All]
[1]

Limit CPUID Maximum:

[Disabled]

[Enabled]

Execute Disable Bit:

[Enabled]
[Disabled]

Intel Virtualization Technology

[Enabled]
[Disabled]

Hardware Prefetcher

[Enabled]
[Disabled]

Adjacent Cache Line Prefetch

[Enabled]
[Disabled]

6.4.4 SATA Configuration

SATA Controller(S):

[Enabled]
[Disabled]

SATA Mode Selection:

[IDE]
[AHCI]

SATA Test Mode:

[Disabled]
[Enabled]

IDE Legacy / Native Mode Selection

[Native]
[Lrgacy]

Serial ATA Port 0 Empty
Software Preserve Unknown

Serial ATA Port 1 Empty
Software Preserve Unknown

Serial ATA Port 2 Empty
Software Preserve Unknown

Serial ATA Port 3 Empty
Software Preserve Unknown

Serial ATA Port 4 Empty

Software Preserve Unknown

Serial ATA Port 5 Empty
Software Preserve Unknown

6.4.5 Thermal Configuration

Platform Thermal Configuration

6.4.6 Intel(R) Rapid Start Technology

Intel(R) Rapid Start Technology

[Disabled]

6.4.7 PCH-FW Configuration

ME FW Version 8.0.13.1502
ME Firmware Mode Normal Mode
ME Firmware Type Full Sku Firmware
ME Firmware SKU 1.5MB
MEBx Type [None]
MDES BIOS Status Code [Disabled]
Firmware Update Configuration
ME FW Image Re-Flash

[Disabled]
[Enabled]

6.4.8 Intel(R) Anti-Theft Technology Configuration

Intel(R) Anti-Theft Technology

[Disabled]
[Enabled]

Intel(R) Anti-Theft Technology Rec 3
Enter Intel(R) AT Suspend Mode

[Disabled]
[Enabled]

6.4.9 AMT Configuration

Intel AMT

[Enabled]
[Disabled]

BIOS Hotkey Pressed

[Disabled]
[Enabled]

MEBx Selection Screen

[Disabled]
[Enabled]

Hide Un-Configure ME Confirmation

[Disabled]

[Enabled]

MEBx Debug Message Output

[Disabled]

[Enabled]

Un-Configure ME

[Disabled]

[Enabled]

Amt Wait Timer 0

Disable ME

[Disabled]

[Enabled]

ASF

[Enabled]

[Disabled]

Activate Remote Assistance Process

[Disabled]

[Enabled]

USB Configure

[Enabled]

[Disabled]

PET Progure

[Enabled]

[Disabled]

AMT CIRA Timeout

WatchDog

[Disabled]

[Enabled]

OS Timer 0

BIOS Timer 0

6.4.10 USB Configuration

USB Configuration

USB Devices:

1 keyboard, 2 Hubs

Legacy USB Support:

[Enabled]

[Disabled]

USB3.0 Support:

[Enabled]

[Disabled]

XHCI Hand-off:

[Disabled]

[Enabled]

EHCI Hand-off:

[Disabled]
[Enabled]

Port 60/64 Emulation

[Enabled]
[Disabled]

USB hardware delays and time-outs:

USB transfer time-out:

[20 sec]
[10 sec]
[5 sec]
[1 sec]

Device reset time-out:

[20 sec]
[10 sec]
[30 sec]
[40 sec]

Device power-up delay

[Auto]
[Manual]

6.4.11 Super IO Configuration

Super IO Configuration

Serial Port 1 Configuration
Serial Port 2 Configuration
Serial Port 3 Configuration
Serial Port 4 Configuration
Serial Port 5 Configuration
Serial Port 6 Configuration

6.4.12 Hardware Monitor

PC Health Status

System temperature	:	+36 C
CPU temperature	:	+59
CPU Fan Speed	:	6250 RPM
VCORE	:	+1.008V
+12V	:	+11.392 V
+3.3V	:	+3.424 V
+1.5V	:	+1.520 V
AVCC	:	+5.158 V

6.4.13 Platform Misc Configuration

Native PCIE Enable

[Disabled]

[Enabled]

6.4.14 Intel(R) Smart Console Technology

ISCT Configuration

[Disabled]
[Enabled]

6.4.15 Serial Port Console Redirection

6.4.16 Intel RC Drivers Version Detail

6.4.17 CPU PPM Configuration

CPU PPM Configuration

EIST

[Enabled]
[Disabled]

Turbo Mode

[Enabled]
[Disabled]

CPU C3 Report

[Enabled]
[Disabled]

CPU C6 report

[Enabled]
[Disabled]

CPU C7 report

[Enabled]
[Disabled]

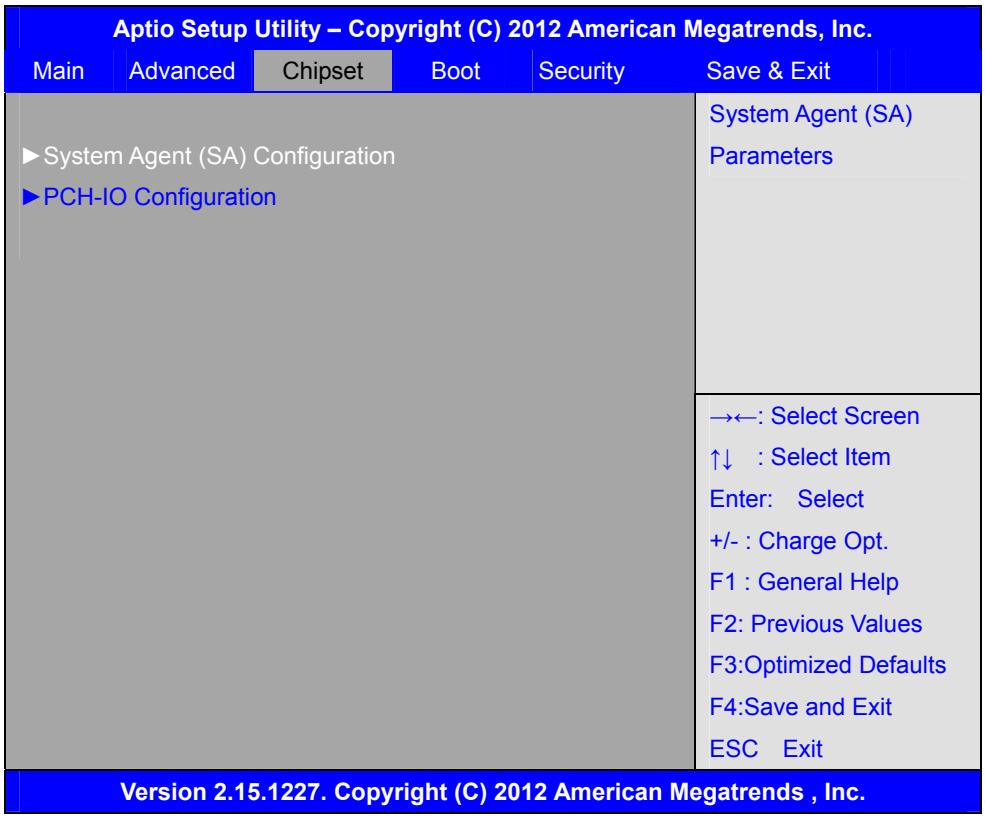
Config TDP LOCK

[Disabled]
[Enabled]

Long duration power limit	0
Long duration maintained	0
Short duration power limit	0

ACPI T State [Disabled]

6.5 Chipset Settings



6.5.1 ► System Agent (SA) Configuration
►PCH-IO Configuration

System Agent (SA) Bridge Name	**Sandybridge**
System Agent RC Version	1.6.0.0
VT-d Capability	Supported
VT-d	
	[Enabled]
	[Disabled]
CHAP Device (B0:D7:F0)	
	[Disabled]
	[Enabled]
Thermal Device (BO:D4:F0)	
	[Disabled]
	[Enabled]
Enable NB CRID	
	[Disabled]
	[Enabled]
BDAT ACPI Table Support	

►Graphics Configuration

IGFX VBIOS Version	2158
IGFX Frequency	650 MHz
Primary Display	
	[Auto]
	[IGFX]
	[PEG]
	[PCI]
Internal Graphics	
	[Auto]
	[Disabled]
	[Enabled]
GTT Size	
	[2MB]
	[1MB]
Aperture Size	
	[256MB]
	[128MB]
	[512MB]
DVMT Pre-allocated	
	[64M]
	[32M]
	[96M]
	[128M]
	[160M]
	[192M]
	[224M]
	[256M]
	[288M]
	[320M]
	[352M]
	[384M]
	[416M]
	[448M]
	[480M]
	[512M]
	[1024M]
Dvmt Total Gfx Mem	
	[256MB]
	[128MB]
	[MAX]
GFX Low Power Mode	
	[Enabled]
	[Disabled]

LCD Control:

Primary IGFX Boot Display

[VBIOS Default]
[VGA]
[DVI]
[LVDS]

LCD Panel Type

[1280 X 1024 24bit 2ch]
[640 X 480 18bit 1ch]
[800 X 480 18bit 1ch]
[800 X 600 18bit 1ch]
[800 X 600 24bit 1ch]
[1024 X 768 18bit 1ch]
[1024 X 768 24bit 1ch]
[1280 X 800 18bit 1ch]
[1280 X 1024 18bit 1ch]
[1280 X 1024 24bit 2ch]
[1366 X 768 18bit 1ch]
[1440 X 900 24bit 2ch]
[1600 X 900 24bit 2ch]
[1600 X 1200 24bit 2ch]
[1680 X 1050 24bit 2ch]
[1680 X 1050 24bit 2ch]
[1920 X 1080 24bit 2ch]
[2048 X 1536 24bit 2ch]

Panel Scaling

[Auto]
[Off]
[Force Scaling]

Backlight Control

[DC]
[PWM]

Backlight Logic

[Positive]
[Negaive]

Backlight Control Control Level

[Level 8]
[Level 0]
[Level 1]
[Level 2]
[Level 3]
[Level 4]
[Level 5]
[Level 6]
[Level 7]
[Level 9]

[Level 10]
[Level 11]
[Level 12]
[Level 13]
[Level 14]
[Level 15]

Active LFP

[Int-LVDS]
[No LVDS]
[SDVO LVDS]
[eDP Port-A]
[eDP Port-D]

Panel Color Depth

[24 Bit]
[18 Bit]

►DMI Configuration

►NB PCIe Configuration

PEG0 [Not Present]

PEG0 – Gen X [Auto]
[Gen1]
[Gen2]
[Gen3]

PEG0 – ASPM [Auto]
[Disabled]
[ASPM Los]
[ASPM L1]
[ASPM LosL1]

Enable PEG [Auto]

Detect Non-Compliance Device [Disabled]

De-emphasis Control

[-3.5 dB]
[-6 dB]

PEG Sampler Calibrate [Auto]

Swing Control [Full]

Gen3 Equalization [Enabled]

Gen3 Eq Phase 2 [Auto]

PEG Gen3 Root Port Preset Value for each Lane

PEG Gen3 Endpoint Preset Value for each Lane

PEG Gen3 Endpoint Hint Value for each Lane

Gen3 Eq Preset Search [Disabled]

PEG Link Disabled [Disabled]

Fast PEG Init [Enabled]

RxCEM Loop back [Disabled]

PCIe Gen3 RxCTLEp Setting

►Memory Configuration

Memory RC Version	1.2.2.0
Memory Frequency	1333 Mhz
Total Memory	2048 MB (DDR3)
DIMM#0	2048 MB (DDR3)
DIMM#2	Not Present
CAS Latency (tCL)	9
Minimum delay time	
CAS to RAS (tRPmin)	9
Row Precharge (tRPmin)	9
Active to Precharge (tRPmin)	24

►GT-Power Management Control

GT Info	GT2 (0X126)
RC6 (Render Standby)	
	[Enabled]
	[Disabled]
RC6 +(Deep RC6)	
	[Enabled]
	[Disabled]
GT Overclocking Support	
	[Disabled]
	[Enabled]

►PCH-IO Configuration

Intel PCH RC Version	1.6.0.0
Intel PCH SKU Name	HM76
Intel PCH Rev ID	04/C1

►PCI Express Configuration

PCI Express Clock Gating	
	[Enabled]
	[Disabled]
DMI Link ASPM Control	
	[Enabled]
	[Disabled]
DMI Link Extended Synch Control	
	[Disabled]
	[Enabled]
PCIe-USB Glitch W/A	
	[Disabled]
	[Enabled]
Subtractive Decode	
	[Disabled]
	[Enabled]

►PCI Express Root Port 1

►PCI Express Root Port 2

►PCI Express Root Port 3
►PCI Express Root Port 4
►PCI Express Root Port 5
►PCI Express Root Port 6
►PCI Express Root Port 7
►PCI Express Root Port 8

►USB Configuration

XEHCI1 Pre-Boot Driver

[Enabled]
[Disabled]

XEHCI Mode [Smart Auto]

HS Port #1 Switchable

[Enabled]
[Disabled]

HS Port #2 Switchable

[Enabled]
[Disabled]

HS Port #3 Switchable

[Enabled]
[Disabled]

HS Port #4 Switchable

[Enabled]
[Disabled]

Xhci Streams

EHCT1

[Enabled]
[Disabled]

EHCT2

[Enabled]
[Disabled]

USB Ports Per-Port Disable Control

[Disabled]
[Enabled]

►PCH Azalia Configuration

Azalia [Ato]

[Disabled]
[Enabled]

Azalia Docking Support

[Disabled]
[Enabled]

Azalia PME

[Disabled]
[Enabled]

Azalia Internal HDMI Codec

[Disabled]
[Enabled]

►BIOS Security Configuration

SMI Lock

[Disabled]
[Enabled]

BIOS Lock

[Disabled]
[Enabled]

GPIO Lock

[Disabled]
[Enabled]

BIOS Interface Lock

[Enabled]
[Disabled]

RTC RAM Lock

[Enabled]
[Disabled]

PCH LAN Controller

[Disabled]
[Enabled]

Board Capability

[SUS_PWR_DN_ACK]
[Deepsx]

Display Logic

[Enabled]
[Disabled]

CLKRUN# Logic

[Enabled]
[Disabled]

SB CRID

[Disabled]
[Enabled]

High Precision Event Timer Configuration

High Precision Timer

[Enabled]
[Disabled]

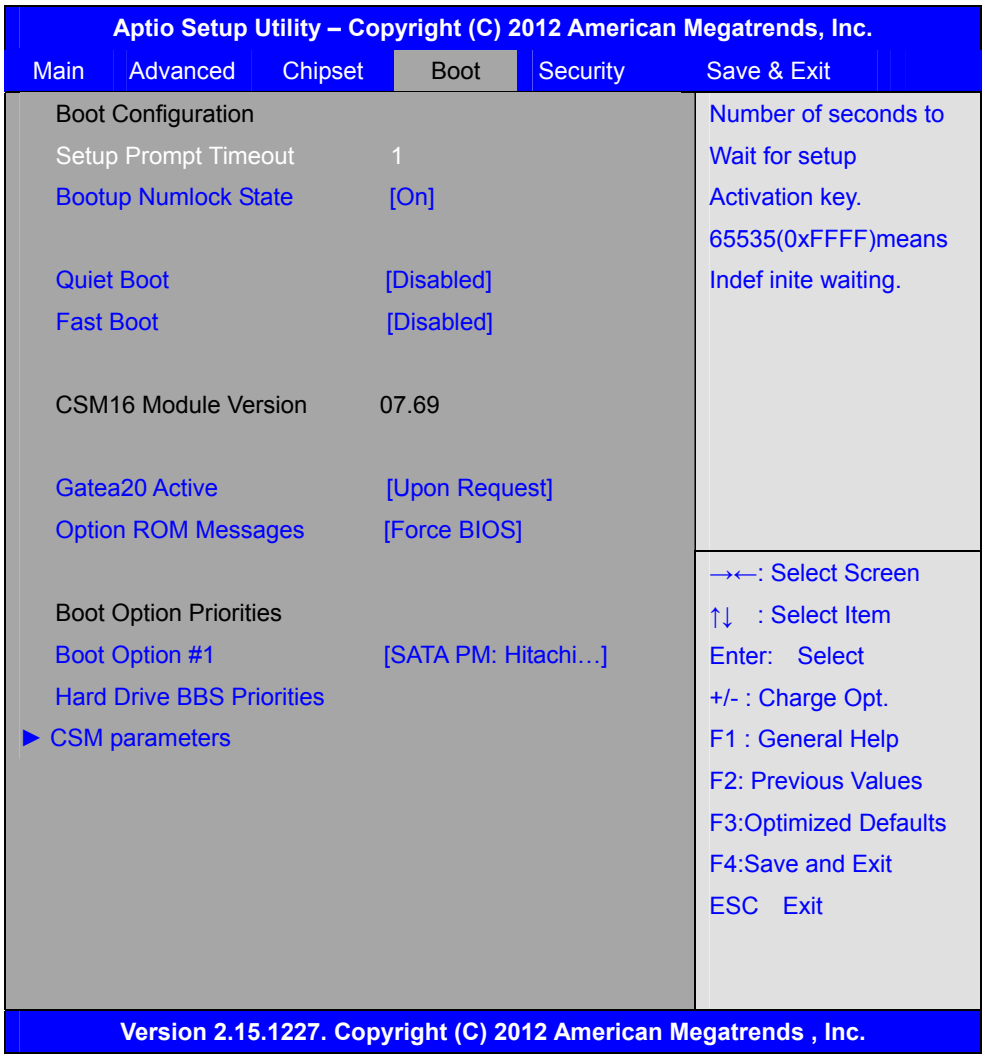
SLP_S4 Assertion Width

[4-5 Seconds]
[1-2 Seconds]
[2-3 Seconds]
[3-4 Seconds]
[Disabled]

Restore AC Power Loss

[Power off]
[Power on]
[Last State]

6.6 Boot Settings



Setup Prompt Timeout [1]

Bootup Numlock State

[On]
[off]

Quiet Boot

[Disabled]
[Enabled]

Fast Boot

[Disabled]

[Enabled]

CSM16 Module Verison 07.69

Gatea20 Active

[Upon Request]
[Always]

Option ROM Messages

[Force BIOS]
[Keep Current]

IN19 Trap Response

[Immediate]
[Postponed]

Boot Option Priorities

► **CSM parameters**

Launch CSM

[Enabled]
[Disabled]

Boot option Filter

[UEFI and Legacy]
[Legacy only]
[UEFI only]

Launch PXE OpROM policy

[Do not launch]
[UEFI only]
[Legacy only]

Launch Storage OpROM policy

[Legacy only]
[UEFI only]
[Do not launch]

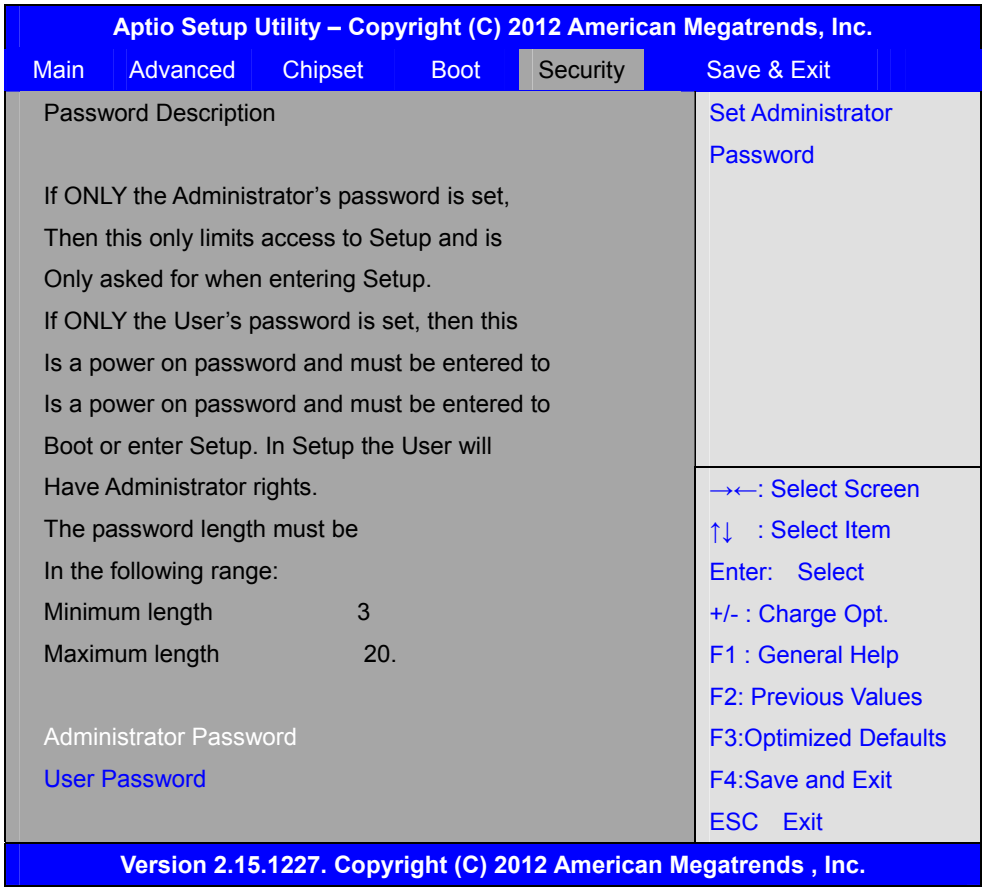
Launch Video OpROM policy

[Legacy only]
[UEFI only]
[Do not launch]

Other PCI device ROM priority

[UEFI only]
[Do not launch]
[Legacy only]

6.7 Security Settings



6.7.1 Administrator Password

6.7.2 User Password

Type the password with up to 20 characters and then press ⮜Enter⮞ key. This will clear all previously typed CMOS passwords. You will be requested to confirm the password. Type the password again and press ⮜Enter⮞ key. You may press ⮜Esc⮞ key to abandon password entry operation.

To clear the password, just press ⮜Enter⮞ key when password input window pops up. A confirmation message will be shown on the screen as to whether the password will be disabled. You will have direct access to BIOS setup without typing any password after system reboot once the password is disabled.

Once the password feature is used, you will be requested to type the password each time you enter BIOS setup. This will prevent unauthorized persons from changing your system configurations.

Also, the feature is capable of requesting users to enter the password prior to system boot to control unauthorized access to your computer. Users may enable the feature in

Security Option of Advanced BIOS Features. If Security Option is set to System, you will be requested to enter the password before system boot and when entering BIOS setup; if Security Option is set to Setup, you will be requested for password for entering BIOS setup.

6.8 Save & Exit Settings

Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.	
Main Advanced Chipset Boot Security Save & Exit	
Save Changes and Exit	Exit system setup after
Discard Changes and Exit	Saving the changes.
Save Changes and Reset	
Discard Changes and Reset	
Save Options	
Save Changes	
Discard Changes	
Restore Defaults	→←: Select Screen
Save user Defaults	↑↓ : Select Item
Restore user Defaults	Enter: Select
	+/- : Charge Opt.
Boot Override	F1 : General Help
	F2: Previous Values
Launch EFI Shell from filesystem device	F3:Optimized Defaults
	F4:Save and Exit
	ESC Exit
Version 2.15.1227. Copyright (C) 2012 American Megatrends , Inc.	

Save Changes and Exit

Save & Exit Setup save Configuration and exit ?

[Yes]

[No]

Discard Changes and Ext

Exit Without Saving Quit without saving?

[Yes]

[No]

Save Changes and Reset

Save & reset Save Configuration and reset?

[Yes]

[No]

Discard Changes and Reset

Reset Without Saving Reset without saving?

[Yes]

[No]

Save Changes

Save Setup Values Save configuration?

[Yes]

[No]

Discard Changes

Load Previous Values Load Previous Values?

[Yes]

[No]

Restore Defaults

Load Optimized Defaults Load optimized Defaults?

[Yes]

[No]

Save user Defaults

Save Values as User Defaults Save configuration?

[Yes]

[No]

Restore user Defaults

Restore User Defaults Restore User Defaults?

[Yes]

[No]

Launch EFI Shell from filesystem device

WARNING Not Found

[ok]