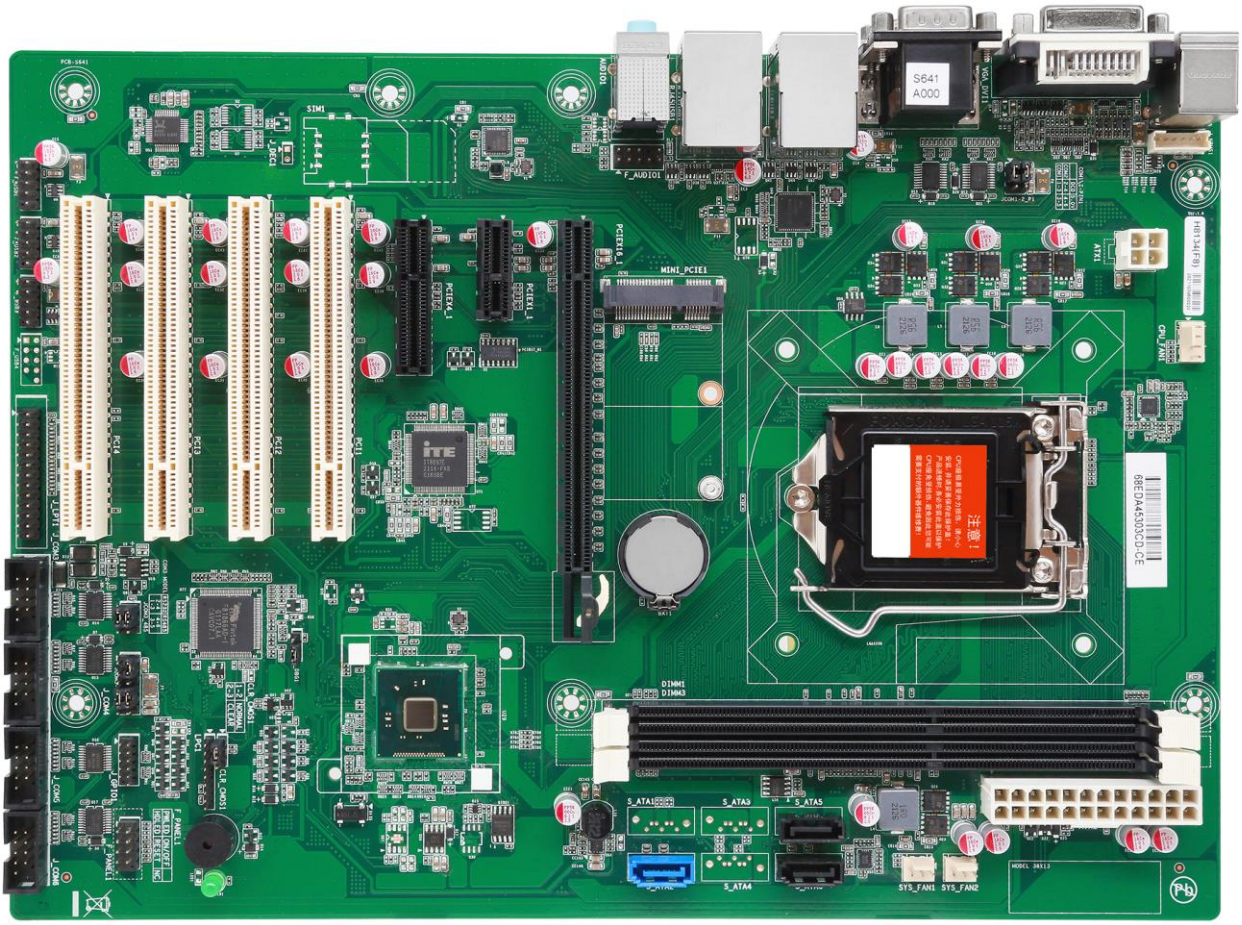
DMB-AH81Darveen Motherboard User Guide

Ver 1.0



DARVEEN

Contents

1. Models and Attentions

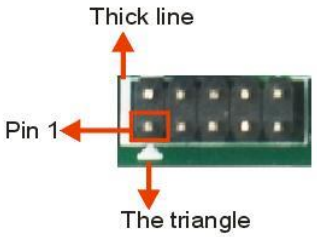
1.1 Models

This manual is applied to following models:

Model	Chip	SATA	USB	COM	PCI-E X1	PCI-E X4	PCI-E X16	PCI
DMB-AH81	H81	3	10	6	1	1	1	4

1.2 Attentions

1) Notes under a table or figure indicate the difference of models, or alternative definition of specific pin of the header (jumper/connector).
2) How to identify the first pin of a header or jumper
   - ☐ Usually, there is a thick line or a triangle near the header's or jumper's pin 1.



   - ☐ Square pad, which you can find on the back of the motherboard, is usually used for pin 1.

2. Specification

Model	DMB-AH81
CPU	Support Intel Pentium/ Celeron/ 4th Generation Core i3/5/7 CPU, LGA1150
Chipset	Intel® H81 [1], TDP 4.1 W
Display	1 * VGA 1 * DVI-I Port (only support DVI-D Signal)
Memory	Support DDR3 1333/1600 MHz, 2 * DIMM Slot, Up to16GB [2]
Storage	1 * SATA 3.0 +2 * SATA 2.0
Ethernet	2 * Intel GbE LAN Chip (10/100/1000 Mbps)
Audio	Realtek ALC897 5.1 Channel HDA Codec, Support MIC/Line-out Ports
COM	5 * RS232 + 1 * RS232/RS485 [3]
Other Ports	1 * PCI-E X1 slot 1 * PCI-E X4 slot[4] 1 * PCI-E X16 slot 4 * PCI 10 * USB: 2 * Rear I/O(USB3.0) + 2 * Rear I/O(USB2.0) + 6* Header (USB2.0) Fan: 1 * CPU Fan + 2 * System Fan 8 * GPIO 1 * Audio Connector + 1 * Front Audio 1 * Mini PCI-E [5] 1 * LPT Header 1 * SIM Connector 1 * PS/2 Connector + 1 * PS/2 Pin Header [6] 2 * ATX Power Input Connector
Temperature	Storage: -20~75˚C Operating: 0~60˚C
BIOS	AMI UEFI BIOS
Factor	ATX (305mm * 220mm)

Notes:

[1]: Chipset can be customized into Intel® B85.

[2]: Due to the restriction of Windows 32bit OS, when applied more than 4G memory, 32bit OS may detect less than actual size.

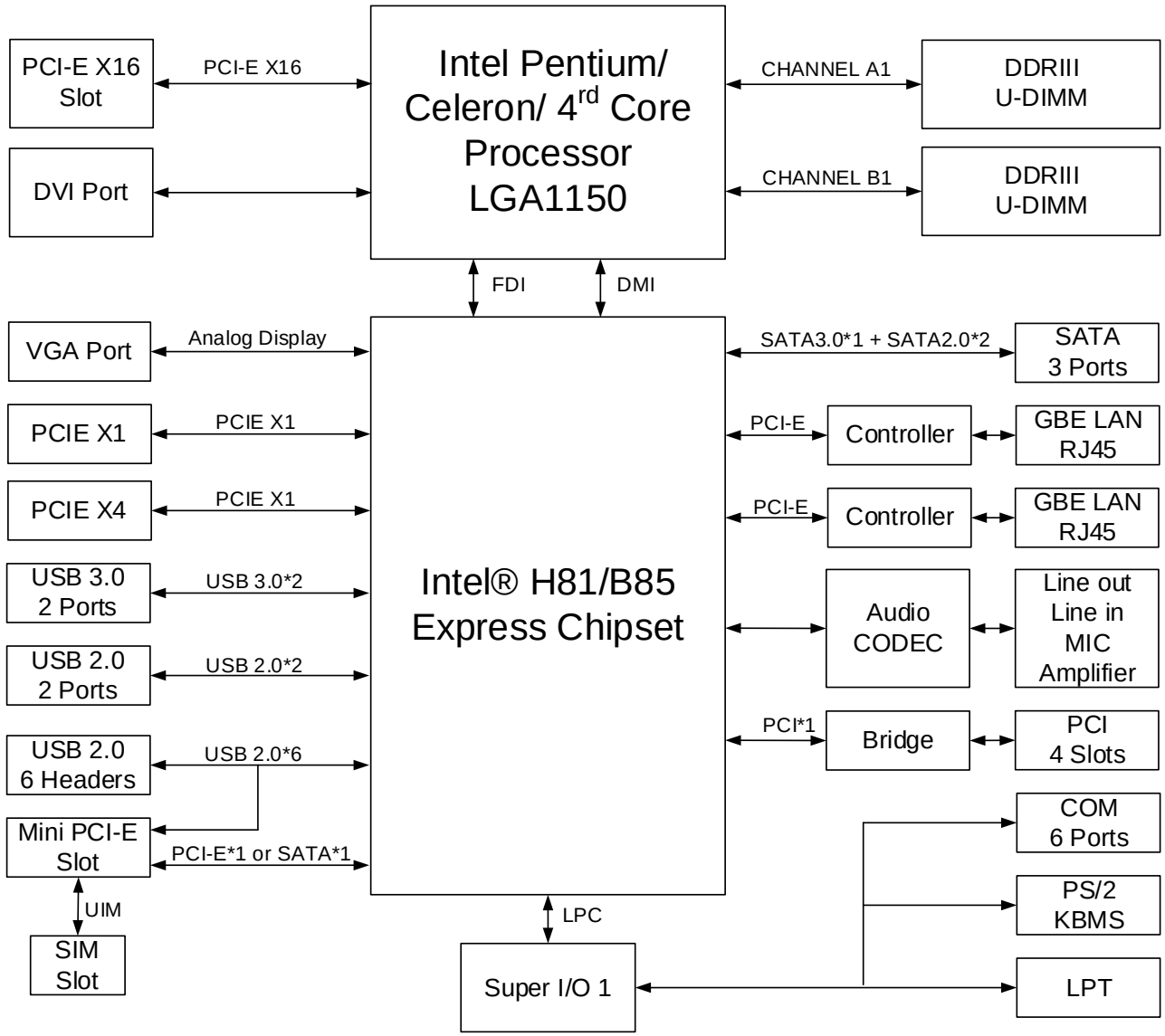
[3]: Signal of J_COM3 is RS232 by default. It also can be RS485 via Jumper JCOM3_485.

[4]: This PCI-E X4 slot can only support PCI-E X1 device for it just have PCI-E X1 signal.

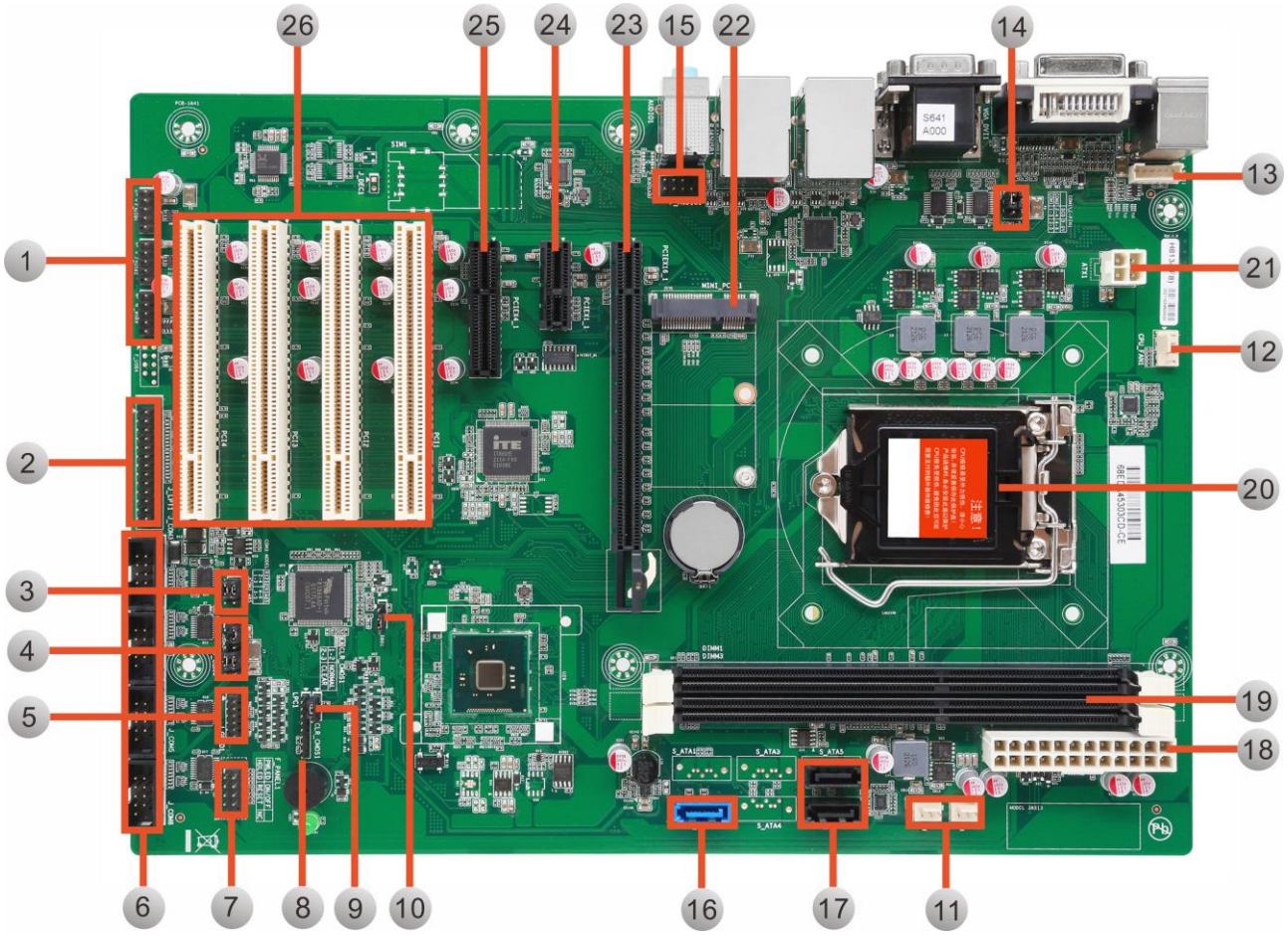
[5]: Mini PCI-E1 slot supports mSATA (SATA 3.0) by default at the cost of invalidating SATA1.It can also support 3G/WIFI if specialized. When it supports 3G, one of the USB ports of F_USB3 will be invalid.

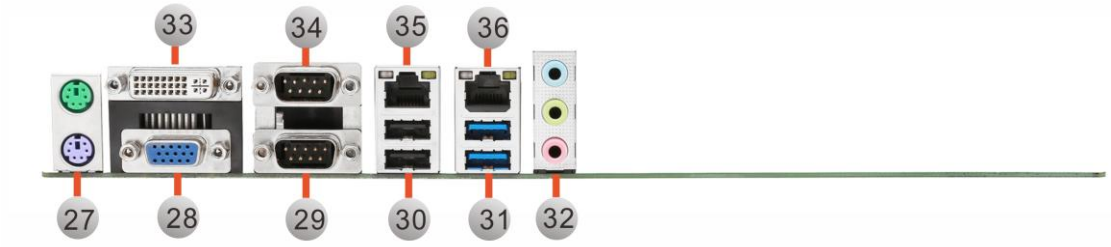
[6]: The PS/2 Connector and the PS/2 Pin Header share the same signal; they can't be accessed simultaneously.

3. Data Flow


PCI-E X16 Slot
PCI-E X16
DVI Port
Intel Pentium/ Celeron/ 4rd Core Processor LGA1150
CHANNEL A1
DDRIII U-DIMM
CHANNEL B1
DDRIII U-DIMM
FDI
DMI
VGA Port
Analog Display
PCIE X1
PCIE X1
PCIE X4
PCIE X1
USB 3.0 2 Ports
USB 3.0*2
USB 2.0 2 Ports
USB 2.0*2
USB 2.0 6 Headers
USB 2.0*6
Mini PCI-E Slot
PCI-E*1 or SATA*1
UIM
SIM Slot
Intel® H81/B85 Express Chipset
SATA3.0*1 + SATA2.0*2
SATA 3 Ports
PCI-E
Controller
GBE LAN RJ45
PCI-E
Controller
GBE LAN RJ45
Audio CODEC
Line out Line in MIC Amplifier
PCI*1
Bridge
PCI 4 Slots
COM 6 Ports
PS/2 KBMS
LPT
LPC
Super I/O 1

4. Jumpers / Headers and Connectors





Jumpers/Headers/Connectors				
1	Front USB Pin Headers	P_8	19	DIMM Slots
2	Parallel Pin Header	P_8	20	CPU Slot
3	RS485/RS232 Select Jumper	P_9	21	ATX1 Power Input Connector
4	COM3-6 Control Jumpers	P_9	22	Mini PCI-E Slot
5	GPIO Pin Header	P_{10}	23	PCI-E X16 Slot
6	COM3-6 Pin Headers	P_{10}	24	PCI-E X1 Slot
7	Front Panel Pin Header	P_{11}	25	PCI-E X4Slot
8	Debug Pin Header		26	PCI Slots
9	CMOS Clear Jumper	P_{11}	27	PS/2 Connector
10	Debug Jumper		28	VGA Connector
11	System Fan Connectors	P_{11}	29	COM2 Connector
12	CPU Fan Connector Front	P_{12}	30	USB 2.0 Connectors
13	Keyboard and Mouse Pin Header	P_{12}	31	USB 3.0 Connectors
14	COM1-2 Control Jumpers	P_{12}	32	Audio Connector
15	Audio Pin Header	P_{12}	33	DVI Connector
16	SATA3.0 Connector		34	COM1 Connector
17	SATA2.0 Connectors		35	LAN Connector
18	ATX2 Power Input Connector		36	LAN Connector

5. Definition of Jumpers/Headers and Connectors

[1] Front USB Pin Headers (5*2 Pin 2.54mm)

Location	Header	Pin	Definition	Pin	Definition
1	F_USB1	1	+ 5 V	2	+ 5 V
		3	USB1-	4	USB2-
		5	USB1+	6	USB2+
		7	GND	8	GND
				10	N/C
	F_USB2	1	+ 5 V	2	+ 5 V
		3	USB3-	4	USB4-
		5	USB3+	6	USB4+
		7	GND	8	GND
				10	N/C
	F_USB3	1	+ 5 V	2	+ 5 V
		3	USB5- [1]	4	USB6-
		5	USB5+ [1]	6	USB6+
		7	GND	8	GND
				10	N/C
	F_USB4	1	+ 5 V	2	+ 5 V
		3	USB7- [2]	4	USB8- [2]
		5	USB7+ [2]	6	USB8+ [2]
		7	GND	8	GND
				10	N/C

Notes:

[1]: When Mini-PCIE Slot supports 3G devices, one of the USB ports of F_USB3 will be invalid.

[2]: F_USB4 can be accessed when mounting B85 chipset.

[2] Parallel Pin Header (13*2 Pin 2.54mm)

Location	Header	Pin	Definition	Pin	Definition
2	LPT1	1	STROBE#	2	AUTOFEED#
		3	DATA0	4	ERROR#
		5	DATA1	6	INIT#
		7	DATA2	8	SLCTIN#

		9	DATA3	10	GND
		11	DATA4	12	GND
		13	DATA5	14	GND
		15	DATA6	16	GND
		17	DATA7	18	GND
		19	ACKNLG#	20	GND
		21	BUSY	22	GND
		23	PE	24	GND
		25	SLCT	26	N/C

[3] RS485/RS232 Select Jumper (3*2 Pin 2.54mm)

Location	Header	Setting	Function
3	JCOM3_485	1-3、2-4(Default)	RS232
		3-5、4-6	RS485

[4] COM3-6 Control Jumper (6*2 Pin 2.54mm)

Location	Jumper	COM	Setting	Function
4	JCOM3-6_P1	COM3	1-3[1]	Pin1: DCD
			3-5	Pin1: + 5V
		COM4	2-4(Default)	Pin1: DCD
			4-6	Pin1: + 5V
		COM5	7-9(Default)	Pin1: DCD
			9-11	Pin1: + 5V
		COM6	8-10(Default)	Pin1: DCD
			10-12	Pin1: + 5V

Note:

[1]: Jumper 1-3 isn't on by default.

[5] GPIO Header（6*2 Pin 2.00 mm）

Location	Header	Pin	Definition	Pin	Definition
5	J_GPIO1	1	PCH_GPO68 （0x1C48, bit 4）	2	PCH_GPI69 （0x1C48, bit 5）
		3	PCH_GPO70 （0x1C48, bit 6）	4	PCH_GPI71 （0x1C48, bit 7）
		5	GND	6	PCH_GPI1 （0x1C0C, bit 1）
		7	PCH_GPO6 （0x1C0C, bit 6）	8	PCH_GPI7 （0x1C0C, bit 7）
		9	PCH_GPO17 （0x1C0E,bit 1）	10	+ 5V [1]
				12	NC

Note: All GPIOs can be programmed to input or output.

[1]: GPIO output is 5V signaling by default, 3.3V is available if specified (resistor selectable).

[6] COM3-6 Pin Headers (5*2 Pin 2.54mm)

Location	Jumper	Pin	Definition	Pin	Definition
6	J_COM3	1	RS232: DCD3[1] RS485: DATA-	2	RS232: DSR3 RS485: N/C
		3	RS232: RXD3 RS485: DATA+	4	RS232: RTS3 RS485: N/C
		5	RS232: TXD3 RS485: N/C	6	RS232: CTS3 RS485: N/C
		7	RS232: DTR3 RS485: N/C	8	RS232: RI3 RS485: N/C
		9	GND		
	J_COM4	1	DCD4*	2	DSR4
		3	RXD4	4	RTS4
		5	TXD4	6	CTS4
		7	DTR4	8	RI4
		9	GND		
	J_COM5	1	DCD5*	2	DSR5
		3	RXD5	4	RTS5
		5	TXD5	6	CTS5
		7	DTR5	8	RI5

		9	GND		
	J_COM6	1	DCD6*	2	DSR6
		3	RXD6	4	RTS6
		5	TXD6	6	CTS6
		7	DTR6	8	RI6
		9	GND		

Note:

*** These signals are depending on relevant Jumpers (e.g. Pin1 of J_COM4 depends on JCOM3-6_P1 Jumper), to find more details, check the above table (Location 4).**

[1]: This signal is RS232 by default. It also can be other signal via JCOM3-6_P1 and JCOM3_485(Location 4 and Location 3).

[7] Front Panel Pin Header (5*2 Pin 2.54 mm)

Location	Header	Pin	Definition	Pin	Definition
7	F_PANEL1	1	HD LED+	2	Power LED+
		3	HD LED-	4	Power LED-
		5	RESET-	6	PWR+
		7	RESET+	8	PWR -
		9	N/C	10	

[9] CMOS Clear Jumper (3*1 Pin 2.54mm)

Location	Jumper	Setting	Function
9	CLR_CMOS1	1-2(Default)	Normal
		2-3	Clear CMOS

[11] System and Auxiliary Fan Connectors (4*1 Pin 2.54mm)

Location	Connector	Pin	Definition	Pin	Definition
11	SYS_FAN1	1	GND	2	+ 12V
		3	FAN Speed Detection		
	SYS_FAN2	1	GND	2	+ 12V
		3	FAN Speed Detection		

[12] CPU Fan Connector (4*1 Pin 2.54mm)

Location	Connector	Pin	Definition	Pin	Definition

12	CPU_FAN1	1	GND	2	+ 12V
		3	FAN Speed Detection	4	FAN Speed Control

[13] Keyboard and Mouse Pin Header (6*1 Pin 2.00mm)

Location	Header	Pin	Definition	Pin	Definition
13	J_KBMS1	1	KB_CLK	2	KB_DATA
		3	MS_CLK	4	GND
		5	+ 5V	6	MS_DATA

[14] COM1-2 Control Jumpers (3*2 Pin 2.00mm)

Location	Jumper	Setting	Function
14	JCOM1-2_P1	1-3、2-4(Default)	Pin1: DCD
		3-5、4-6	Pin1: + 5V

[15] Front Audio Pin Header (5*2 Pin 2.54mm)

Location	Header	Pin	Definition	Pin	Definition
15	F_AUDIO1	1	FP_MIC_L	2	GND
		3	FP_MIC_R	4	+ 3.3V
		5	FP_OUT_R	6	SENSE1_RETURN
		7	GND		
		9	FP_OUT_L	10	SENSE2_RETURN

6. BIOS setup

See “DMB-AH810S BIOS Quick Start Guide” or “DMB-AH810S BIOS Specification Summary Sheet” for detail information of BIOS setup.

【End】