

**Micro ATX Motherboard supports 22nm LGA1150 Intel® Core™
i7/i5/i3/Pentium® and Celeron® CPU per Intel® H81, DDR3,
VGA, Dual Intel® PCIe GbE, USB 2.0, PCI, COM, LPT,
SATA 6Gb/s, HD Audio, iRIS-2400 and RoHS**

IMB-H810-i2

Quick Installation Guide

Version 1.0

Jan 03, 2014.

Package List

IMB-H810-i2 package includes the following items:

- 1 x IMB-H810-i2 single board computer
- 1 x I/O shielding (P/N: 45014-0041C0-00-RS)
- 2 x SATA cable (P/N: 32000-062800-RS)
- 1 x Utility CD
- 1 x QIG (Quick Installation Guide)



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Specifications

- CPU:
LGA1150 Intel® 4th generation Core™ i7/i5/i3/Pentium®/Celeron® processor supported
- System Chipset: Intel® H81
- Memory:
Two 240-pin 1333/1066MHz dual-channel DDR3 SDRAM unbuffered DIMMs supported (system max. 16GB)
- BIOS: UEFI BIOS
- Graphic Engine:
Intel® HD Graphics Gen 7.5 support for DX11.1 and OpenCL 1.2, OpenGL 3.2 Full MPEG2, VC1, AVC Decode
- Display Output:
VGA1 (Up to 1920x1200 @ 60 Hz)
VGA2 (Up to 1920x1200 @ 60 Hz)
iDP interface for HDMI, LVDS, VGA, DVI, DP (Up to 3840x2160 @60 Hz)
- Ethernet:
LAN1: Intel® I210 PCIe controller
LAN2: Intel® I211 PCIe controller
- Super IO: Fintek F81866
- PCIE-PCI Bridge: ITE IT8892E
- EC: iWDD
- Audio:
Realtek ALC662 HD Audio codec
Line-in, Line-out, Mic
- Audio Jack:
Line-in, Line-out (with 3.5W +3.5W audio amplifier), Mic
- I/O Interface:
2 x RS-232 (Rear IO)
8 x RS-232 (3-6 ports, 7-10 ports)
1 X RS-422/485 by s/w selection (Colay COM10)

- 1 x LPT
- 1 x PS/2 KB/MS
- 4 x USB 2.0 (4 by pin header)
- 2 x USB 3.0 (Rear IO)
- 6 x USB 2.0 (2 by Rear IO, 4 by pin header)
- 4 x SATA 6Gb/s
- Watchdog Timer:
 - Software programmable support 1~255 sec. system reset
- FAN:
 - 1 x 4-pin CPU fan connector
 - 1 x 4-pin NB/system fan connector
- Front Panel:
 - 1 x Front Panel (Power LED, HDD LED, Speaker (Buzzer), Power Button, Reset Button)
- TPM: 1 x 20-pin (2x10) header
- SMBus: 1 x 4-pin (1x4) wafer
- I2C: 1 x 4-pin (1x4) wafer
- IPMI: 1 x DDR3 SO-DIMM slot supports iRIS-2400
- Expansion:
 - 1 x PCIe x16 slot
 - 1 x PCIe x1 slot
 - 2 x PCI slots
- Power supply: ATX/AT power supply
- Operation Temperature: -10°C ~ 60°C
- Operation Humidity: 5% ~ 95%, non-condensing
- Dimensions: 244mm x 244mm
- Weight GW/NW: 1200g / 680g

Ordering Information

- **IMB-H810-i2-R10:**
Micro ATX motherboard supports 22nm LGA1150 Intel® Core™ i7/i5/i3/Pentium® and Celeron® CPU per Intel® H81, DDR3, VGA, Dual Intel® PCIe GbE, USB 2.0, PCI, COM, SATA 6Gb/s, LPT, HD Audio, iRIS-2400 and RoHS
- **32205-001203-100-RS:** RS-232 cable, 40 pin to 4 x D-SUB 9 pin
- **19800-003100-200-RS:** Dual ports USB cable with bracket
- **19800-010500-100-RS:** USB 3.0 cable with bracket
- **32205-003800-100-RS:** RS-232 cable, 230mm (P=2.54)
- **32102-000100-200-RS:**
SATA power cable, MOLEX 5264-4P to SATA15P
- **19800-000075-RS:** PS/2 KB/MS Y-cable with bracket, 220mm
- **19800-000049-RS:** LPT cable
- **CF-1156A-RS-R11:**
High performance LGA1155/LGA1156 cooler kit, 1U chassis compatible, 73W
- **CF-1156E-R11:**
High performance LGA1155/LGA1156 cooler kit, 95W
- **DP-LVDS-R10:**
DisplayPort to 24 bit dual channel LVDS converter board
(For iEi IDP connector)
- **DP-HDMI-R10:**
DisplayPort to HDMI converter board (For iEi IDP connector)
- **DP-DVI-R10:**
DisplayPort to DVI-D converter board (For iEi IDP connector)
- **DP-VGA-R10:**
DisplayPort to VGA converter board (For iEi IDP connector)
- **DP-DP-R10:**
DisplayPort to DisplayPort converter board (For iEi IDP connector)
- **TPM-IN01-R11:** 20-Pin Infineon TPM module, software management tool, firmware V3.17

Jumpers setting and connectors

LABEL	FUNCTION
J_ATX_AT1	AT/ATX mode select switch
J_CMOS1	Clear CMOS button
JP3	COM10 RS232/RS422 or RS485 type selection
USB SW1, USB SW2	USB power setting
CPU_FAN1	CPU fan connector
CPU12V1	+12V power source connector
ATX1	24-pin ATX power source connector
ATXPWR1	PCI-E power connector
CHA_DIMM1, CHB_DIMM1	DDR3 DIMM slots
DP1	Display port connector
CN3	EC Debug Port Connector
JSPI1	Flash SPI ROM
JSPI2	Flash EC ROM
F_PANEL1	PWR & RST buttons and indicators
LPT1	Parallel port connector
IPMI1	Collocation IPMI module(iRIS-2400)
CN5	I2C connector
COM3-6, COM7-10	Internal RS-232 serial port connectors
CN10	Internal RS-422/485 serial port connector
SATA1, SATA2 SATA3, SATA4	Serial ATA 3.0 connectors
CN1	SMBUS connector
SYS_FAN1, SYS_FAN2	System fan connector
TPM1	TPM connector
USB3 ~ 6	Internal USB 2.0 connectors
AUDIO_CV1	HD audio connector
COM1, COM2	External RS-232 serial port connector
LAN1_USB1	RJ45 LAN and USB 3.0 connectors
LAN2_USB2	RJ45 LAN and USB 2.0 connectors
KBMS1	PS/2 Keyboard and mouse connector
VGA1, VGA2	VGA connectors

J_ATX_AT1: AT/ATX mode select switch	
PIN NO.	DESCRIPTION
Short 1 - 2	ATX Mode (default)
Short 2 - 3	AT Mode

J_CMOS1: Clear CMOS button	
PIN NO.	DESCRIPTION
NC (default)	Keep CMOS Setup (Normal Operation)
Press button	Clear CMOS Setup

JP3: COM10 RS232/RS422 or RS485 type selection	
PIN NO.	DESCRIPTION
Short 1 - 2	RS232 (default)
Short 2 - 3	RS422 or RS485

USB SW1, USB SW2: USB power setting	
USB SW1	DESCRIPTION
+5V DUAL	+5V DUAL(default)
+5V	+5V

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Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.
  Chipset
Auto Power Button Status          [Disabled(ATX)]
Restore AC Power Loss              [Last State]
> PCI Express Configuration
> PCI Azalia Configuration
Power Saving Function(ERP)        [Disabled]
PCIEX16 Power                      [1 x16 PCIE]
USB SW1                            [+5V DUAL]
USB SW2                            [+5V DUAL]
Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

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CPU_FAN1: CPU fan connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	+12V
3	FANIO	4	PWM

CPU12V1: +12V power source connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	GND
3	+12V	4	+12V

ATX1: 24-pin ATX power source connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power good	20	-5V
9	5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND

ATXPWR1: PCI-E power connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5V	2	GND
3	GND	4	+12V

DP1: Display port connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+5V	2	LANE1N
3	LANE1P	4	GND
5	LANE3N	6	LANE3P
7	GND	8	AUX_CTRL_DET_D
9	GND	10	HPD
11	AUXP	12	AUXN
13	GND	14	LANE2P
15	LANE2N	16	GND
17	LANE0P	18	LANE0N
19	+3.3V	20	NC

CN3: EC debug connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	EC_EPP_STB#	2	EC_EPP_AFD#
3	EC_EPP_PD0	4	NC
5	EC_EPP_PD1	6	EC_EPP_INIT#
7	EC_EPP_PD2	8	EC_EPP_SLIN#
9	EC_EPP_PD3	10	GND
11	EC_EPP_PD4	12	NC
13	EC_EPP_PD5	14	EC_EPP_BUSY
15	EC_EPP_PD6	16	EC_EPP_KSI5
17	EC_EPP_PD7	18	EC_EPP_KSI4

JSP11: Flash SPI ROM connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+3.3V	2	SPI_CS#
3	SPI_SO	4	NC
5	GND	6	SPI_CLK
7	SPI_SI	8	NC

JSPI2: Flash EC ROM connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	+3.3V	2	SPI_CS#
3	SPI_SO	4	NC
5	GND	6	SPI_CLK
7	SPI_SI	8	NC

F_PANEL1: PWR & RST buttons and indicators					
	PIN	DESCRIPTION	PIN	DESCRIPTION	
PWR LED	1	+5V	2	BEEP_PWR	SPKR
	3	NC	4	NC	
	5	GND	6	NC	
PWR BTN	7	PWRBTN_SW#	8	PC_BEEP	
	9	GND	10	NC	
HDD LED	11	+5V	12	EXTRST-	RESET
	13	SATA_LED#	14	GND	

LPT1: Parallel Port Connector			
PIN	DESCRIPTION	PIN	DESCRIPTION
1	STROBE#	2	DATA 0
3	DATA 1	4	DATA 2
5	DATA 3	6	DATA 4
7	DATA 5	8	DATA 6
9	DATA 7	10	ACKNOWLEDGE
11	BUSY	12	PAPER EMPTY
13	PRINTER SELECT	14	AUTO FORM FEED #
15	ERROR#	16	INITIALIZE
17	PRINTER SELECT LN#	18	GROUND
19	GROUND	20	GROUND
21	GROUND	22	GROUND
23	GROUND	24	GROUND
25	GROUND	26	NC

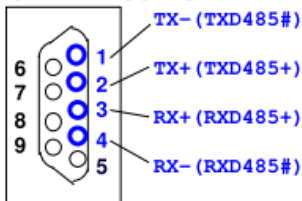
CN5: I2C connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	PCH_GP38
3	PCH_GP39	4	+5V

COM3-6: Internal RS-232 serial port connectors				
Function	PIN	DESCRIPTION	PIN	DESCRIPTION
COM3	1	DCD	2	DSR
	3	RXD	4	RST
	5	TXD	6	CTS
	7	DTR	8	RI
	9	GND	10	GND
COM4	11	DCD	12	DSR
	13	RXD	14	RST
	15	TXD	16	CTS
	17	DTR	18	RI
	19	GND	20	GND
COM5	21	DCD	22	DSR
	23	RXD	24	RST
	25	TXD	26	CTS
	27	DTR	28	RI
	29	GND	30	GND
COM6	31	DCD	32	DSR
	33	RXD	34	RST
	35	TXD	36	CTS
	37	DTR	38	RI
	39	GND	40	GND

COM7-10: Internal RS-232 serial port connectors				
Function	PIN	DESCRIPTION	PIN	DESCRIPTION
COM7	1	DCD	2	DSR
	3	RXD	4	RST
	5	TXD	6	CTS
	7	DTR	8	RI
	9	GND	10	GND
COM8	11	DCD	12	DSR
	13	RXD	14	RST
	15	TXD	16	CTS
	17	DTR	18	RI
	19	GND	20	GND
COM9	21	DCD	22	DSR
	23	RXD	24	RST
	25	TXD	26	CTS
	27	DTR	28	RI
	29	GND	30	GND
COM10	31	DCD	32	DSR
	33	RXD	34	RST
	35	TXD	36	CTS
	37	DTR	38	RI
	39	GND	40	GND

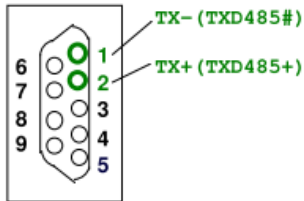
CN10: RS-422/485 serial port connector (COM10)			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RXD485#	2	RXD485+
3	TXD485+	4	TXD485#

RS422 Pin define



D-SUB 9PIN MALE

RS485 Pin define



D-SUB 9PIN MALE

SATA1, SATA2, SATA3, SATA4: Serial ATA 3.0 connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	SATA_TX+
3	SATA_TX-	4	GND
5	SATA_RX-	6	SATA_RX+
7	GND		

CN1: SMBUS connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	SMB_DATA
3	SMB_CLK	4	+5V

SYS_FAN1, SYS_FAN2: System fan connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	FANIO	2	+12V (PWM)
3	GND		

TPM1: TPM connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	LCLK	2	GND
3	LFRAME#	4	NC
5	LRERST#	6	+5V
7	LAD3	8	LAD2
9	+3.3V	10	LAD1
11	LAD0	12	GND
13	SCL	14	SDA
15	SB3V	16	SERIRQ
17	GND	18	GLKRUN#
19	LPCPD#	20	LDRQ#

USB3, USB4, USB5, USB6: Internal USB 2.0 connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	GND
3	USB_DATA-	4	USB_DATA+
5	USB_DATA+	6	USB_DATA-
7	GND	8	VCC

COM1: External RS-232 serial port connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD1	2	RXD1
3	TXD1	4	DTR1
5	GND1	6	DSR1
7	RTS1	8	CTS1
9	RI1		

COM2: External RS-232 serial port connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD2	2	RXD2
3	TXD2	4	DTR2
5	GND2	6	DSR2
7	RTS2	8	CTS2
9	RI2		

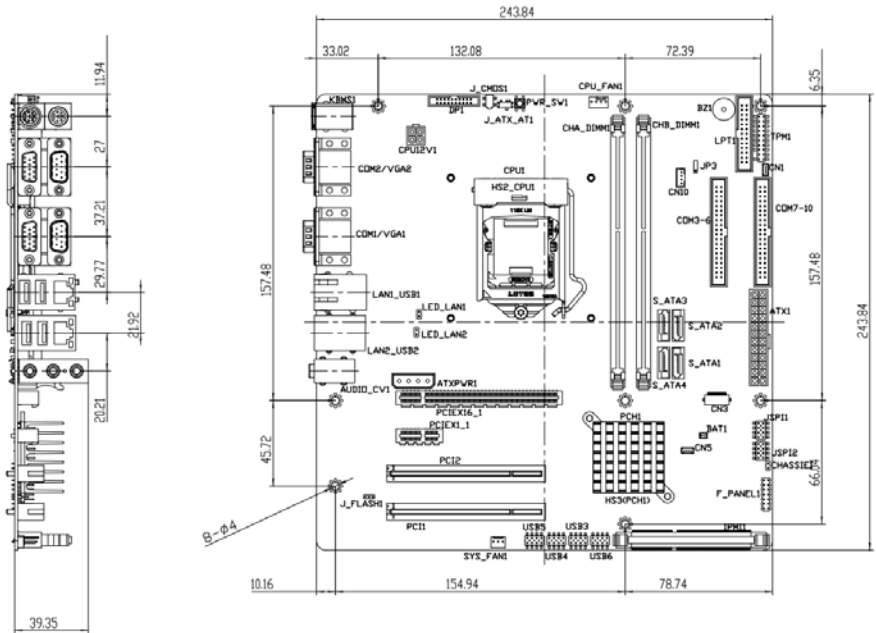
LAN1_USB1: Ethernet and USB 3.0 connectors			
USB1: External USB 3.0 connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	10	VCC
2	USB_DATA-	11	USB_DATA-
3	USB_DATA+	12	USB_DATA+
4	GND	13	GND
5	USB3_RX-	14	USB3_RX-
6	USB3_RX+	15	USB3_RX+
7	GND	16	GND
8	USB3_TX-	17	USB3_TX-
9	USB3_TX+	18	USB3_TX+
LAN1: RJ45 LAN connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
20	LAN1_MDI0P	24	LAN1_MDI2P
21	LAN1_MDI0N	25	LAN1_MDI2N
22	LAN1_MDI1P	26	LAN1_MDI3P
23	LAN1_MDI1N	27	LAN1_MDI3N

LAN2_USB2: Ethernet and USB 2.0 connectors			
USB2: External USB 2.0 connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	5	VCC
2	USB_DATA-	6	USB_DATA-
3	USB_DATA+	7	USB_DATA+
4	GND	8	GND
LAN2: RJ45 LAN connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
P2	TRD2P0	P6	TRD2P2
P3	TRD2N0	P7	TRD2N2
P4	TRD2P1	P8	TRD2P3
P5.	TRD2N1	P9	TRD2N3

KBMS1: PS/2 Keyboard and mouse connector			
KBMS1 (Purple): 6-pin Mini-DIN keyboard connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Keyboard Data	2	NC
3	GND	4	VCC
5	Keyboard Clock	6	NC
KBMS1 (Green): 6-pin Mini-DIN Mouse Connector			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Mouse Data	2	NC
3	GND	4	VCC
5	Mouse Clock	6	NC

VGA1, VGA2: VGA connectors			
PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	VCC	10	GND
11	NC	12	DDCDA
13	HSYNC	14	VSYNC
15	DDCCLK		

Board Layout: Jumper and Connector Locations



(Unit: mm)