

MH61 Motherboard

(PCB Rev:1.10)

Manual Version 1.10

2014.01.13



1 Introduction

MH61 mainboard is a 17*17cm mini-ITX industrial motherboard, Adopt Intel® H61 Express chipset, support LGA1155 interface Sandy/Ivy Bridge all series processor.

1.1 Main Feature

1.1.1 Adopt Intel® H61 Express chipset

1.1.2. support LGA1155 interface Sandy/Ivy Bridge all series processor

1.1.3. Support 2*dual channel DDR3 1600(Ivy)/1333/ 1066 MHz ram, SO-DIMM socket, maximum up to 16GB.

1.1.4. Onboard VGA, DVI, HDMI display port, Support double screen double display

1.1.5. Support 10*com port (9*RS232, 1*RS485)

1.1.6 Provide 1*LPT expansion header, support EPP/SPP/ECP/STD print mode.

1.1.6. Onboard 8*USB 2.0 port

1.1.7. Onboard 2*MINI- PCIE socket (MPCIE1 is SSD hard disk interface, MPCIE2 is WIFI interface)

1.1.8 Onboard 3*SATA2.0 interface

1.1.8. Onboard Realtek ALC662 high-fidelity 6 channel sound card.

1.1.9 . Onboard RTL8111EL Gigabit Ethernet LAN, support PXE boot and WAKE ON LAN

1.1.10 Provide 16*GPIO interface (optional)

1.1.11 Support 225 grade WatchDog, CMOS can be set up by the minutes or by seconds

1.2 Power Supply

Adopt ATX power supply, support “Automatic startup on electricity”、“ATX startup”(CMOS can be set).

1.3 Size

170 x 170 mm

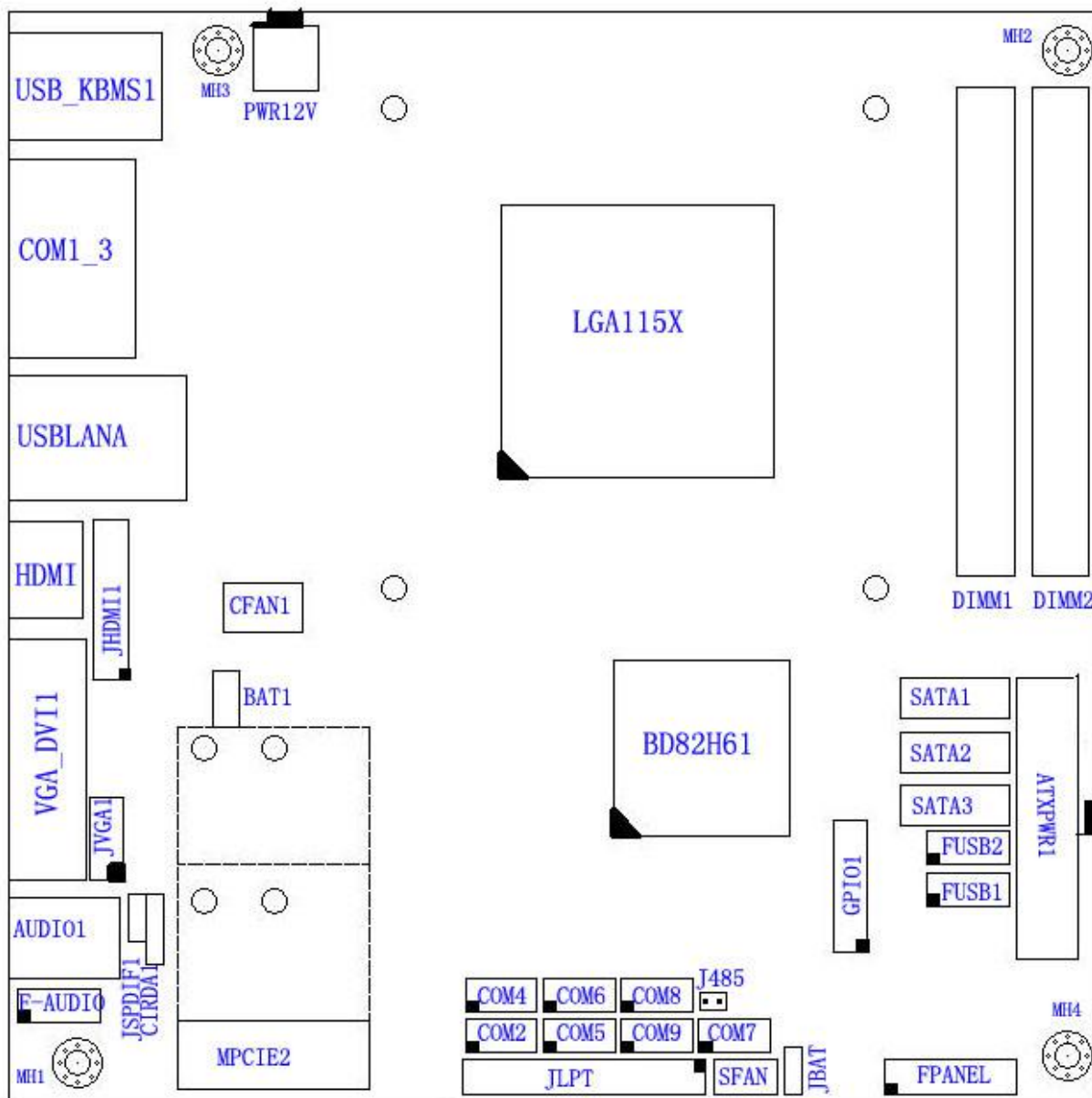
1.4 Working Environment

Working Temp: -20°C ~ +60°C

Storage Temp: -40°C ~ +85°C

2 MH61 Front side interfaces layout

TOP floor layout as below:



Remark: Interfaces in the above picture, **Pin 1** are in square shape or a triangle arrows.

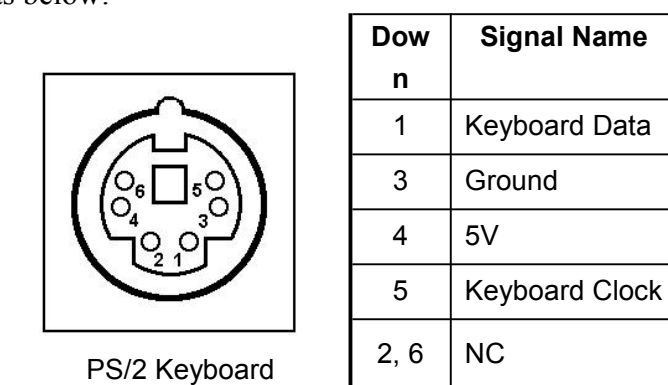
2.1 ATXPWR1、PWR

ATXPWR1 is a standard 20pin ATX power socket,PWR is 4pin power socket,When it will work,you need connect it in the same time.

Remark:When you assemble,test,use it,you need assemble the equipment and cable and power on.

2.2 USB_KBMS1

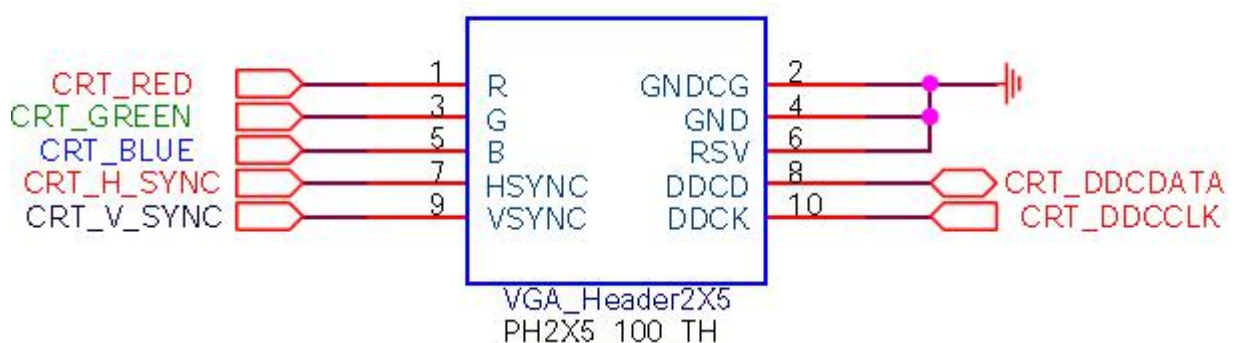
USB_KBMS1 is 2*USB Type-A port and 1*Keyboard port.Under layer is PS/2 Mouse interface,top layer is Keyboard interface,Keyboard support Keyboard wake up function.Definition as below:



2.3 VGA_DVI1 和 JVGA

VGA_DVI1top layer is standard DVI display output interface,Under layer is standard VGAdisplay output interface.

JVGA is 2x5、2.54mm pin interface,Definition as below:

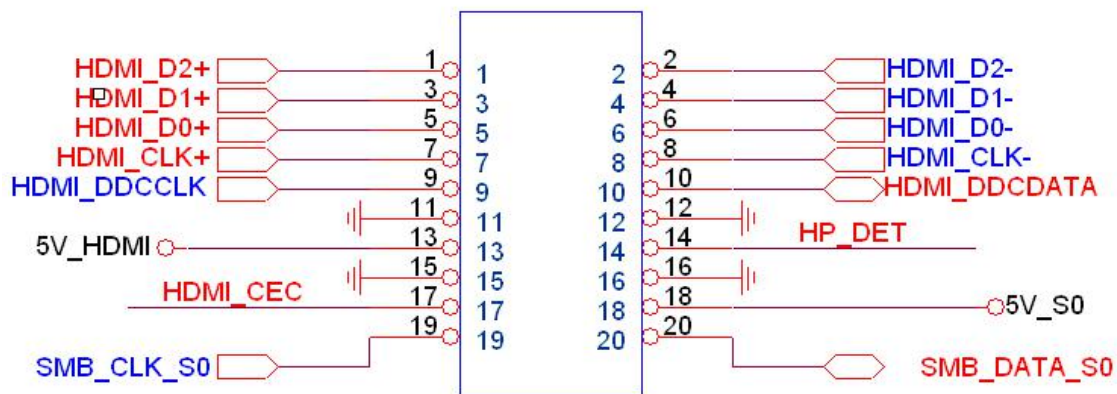


Remark:VGA and JVGA can't use in the same time.。

2.4 HDMI1 and JHDMI1

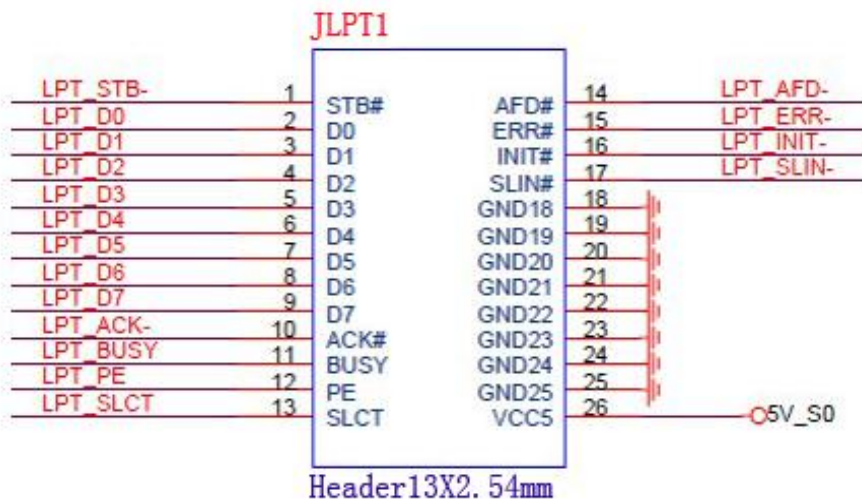
HDMI1 is a standard HDMI output interface.

HDMI2 is user-defined 2x10 2.54mm HDMI pin header,definition as below:



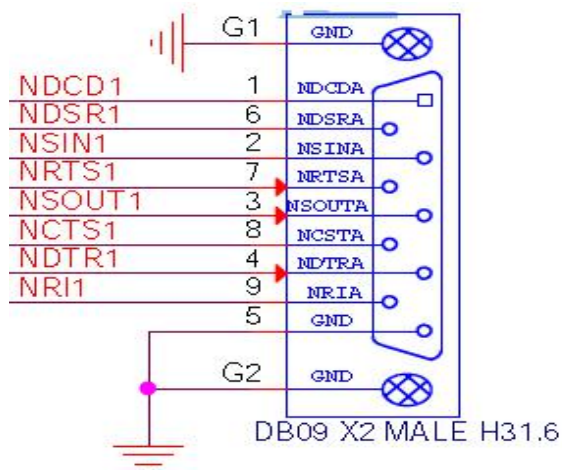
2.5 JLPT

JLPT is 2x13,2.54mm pin header,support EPP/SPP/ECP/STD mode.definition as below:



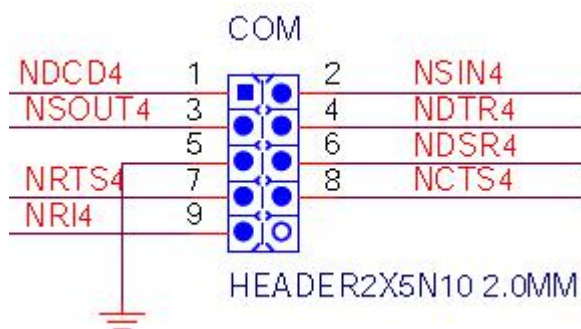
2.6 COM1_3

COM1 and COM3 is standard DB9M RS232 serial port.definition as below:



2.7 COM2、COM4、COM5、COM6、COM7、COM8、COM9

All are RSR232 pin header, adopt 2x5、2.0mm pin.definition as below:



2.8 J485

Is RS485 interface, adopt 1X2、2.00mm pin.definition as below:



2.9 USBLANA

2*USB Type-A port and 10/100/1000M adapt to LAN standard RJ45 composite interface, LAN main control chip is Realtek RTL8111E, support PXE boot and wake on lan .

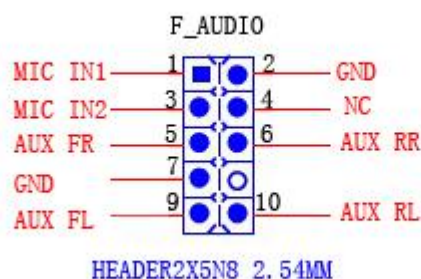
RJ45 below is 2* USB 2.0 A Type interface.

2.10 AUDIO1

Standard 3.5mm audio interface, support LINE-OUT & MIC-IN.

2.11 F_AUDIO

F_AUDIO is 2x5_2.54mm audio connect pin header. Pin1~2 Front panel MIC connector; Pin5、9 is the connector of headset and speaker in front panel. Definition as below:



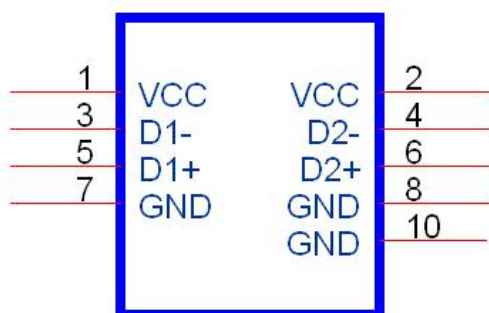
2.12 JSPDIF1

Optical fiber audio output interface, is optional.

2.13 FUSB1 和 FUSB2

Are USB Pin header and 2x5、2.54mm pin header, support USB 1.0/1.1/2.0 device.

Definition as below:



2.14 CPU_FAN1、SYS_FAN1

FAN interfaces, support maximum current 0.3A, definition as below:



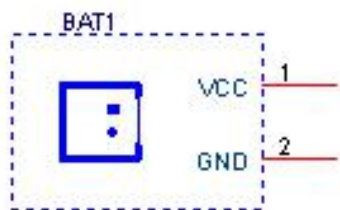
CPU_FAN1 Support smart fan control, support Slient/Standard/Performance three modes。
SYS_FAN1 doesn't support the fan speed control。

2.15 SATA1、SATA2、SATA3

Standard SATA device interface, support SATA2.0 and below. support IDE/AHCI/RAID three modes.

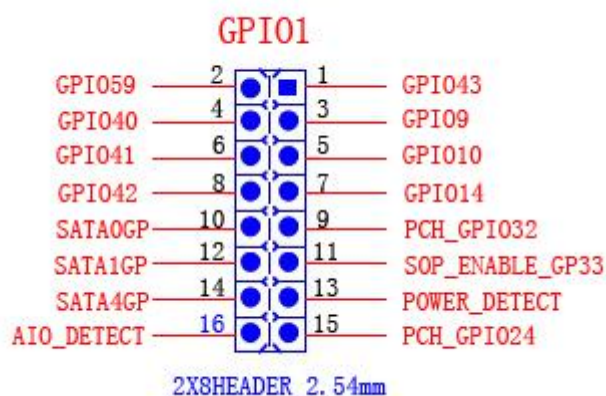
2.16 BAT1

BAT1 is battery interface.



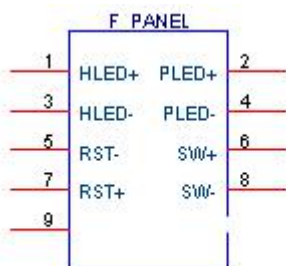
2.17 JGPIO1

Spare GPIO interface, adopt 2x8、2.54mm pin, definition as below:



2.18 FPANEL

The control panel's interface adopt 2x8、2.54mm pin, integrated HDD_LED、PWR_LED、on/off、reset switch、SPEAKER function. definition as below:



FP1	Pin Definition
1,3	Hard disk access lamp positive and negative signal pins.
2,4	Main power indicator light positive and negative signal pins.
5,7	Mainboard reset positive and negative signal pins.
6,8	Mainboard on/off positive and negative signal pins.

2.19 MPCIE2

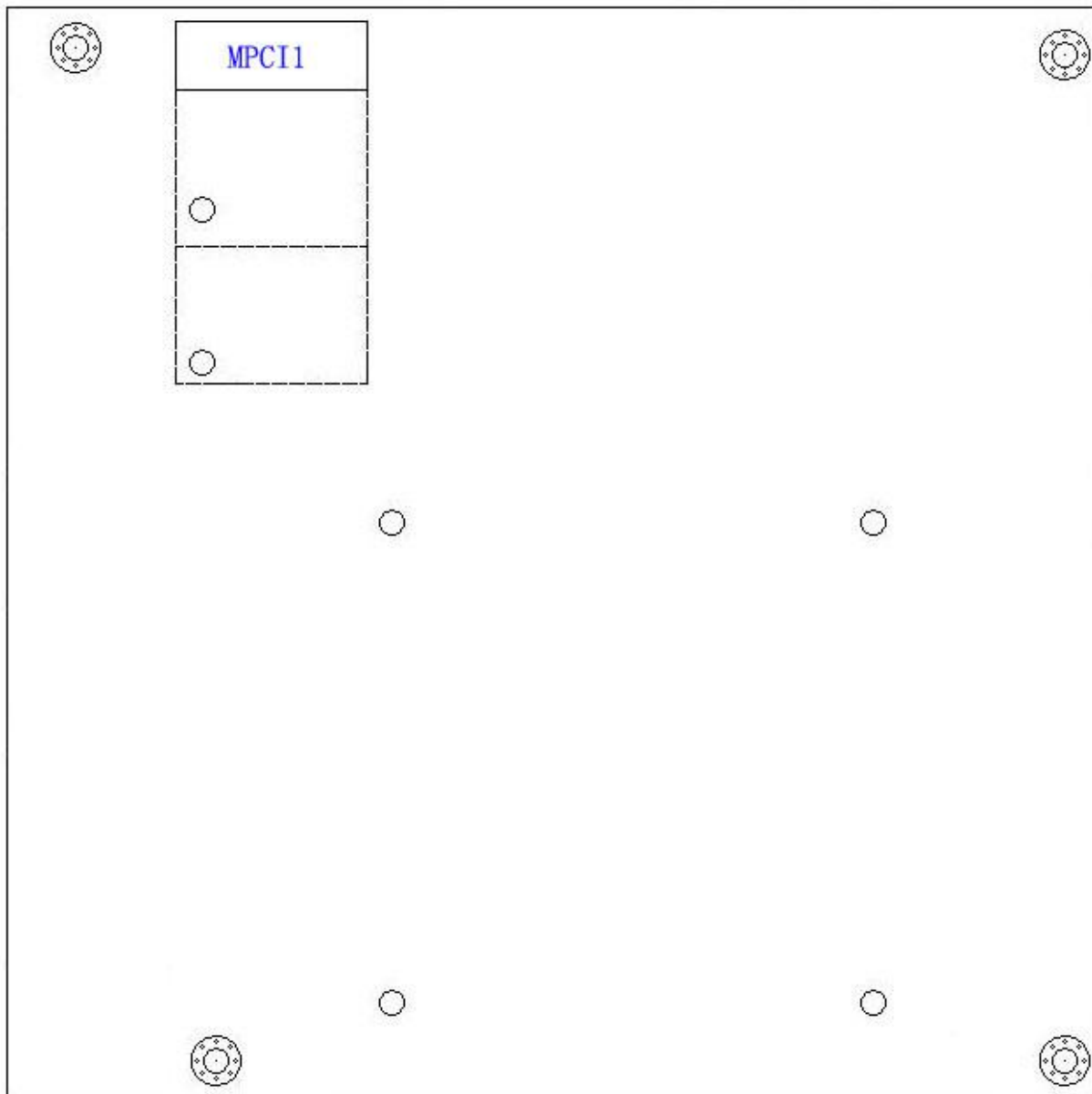
standard Mini-PCIE socket, Support wireless WIFI module. suit for full-size card. The half-size card Mini-PCIE card, must be fixed with a extended card.

2.20 DIMM1 和 DIMM2

Is two groups 204 pin SODIMM-DDR3 ram socket.support DDR3 1 600(I vy)/1 3 33/1066 M H z ram,SO-DIMM socket,maximum up to 16GB

3 Rear Side Interface Layout

Mainboard rear side layout as below:



3.1 MPCIE2

Standard Mini-PCIE socket,support Mini-SATA memory card.