COLORFUL®

C.B250A-BTC V20

User’s Manual

Motherboard

Colorful Technology Website:
http://www.colorful.cn

Thanks for purchasing our based on Intel B250 Chipset motherboard. The motherboard C.B250A-BTC V20 based on Intel B250 Express Chipset, support Intel LGA1151 CPUs, support dual channel DDR4 2400/2133MHZ memory, support PCI-E 3.0 standard。

The motherboard provides 1*HDMI port、1*VGA port、1*DVI port、2*DDR4 memory slots、5*SATA3.0、6*USB2.0、6*USB3.0 ports(including headers)、onboard 6-CH audio chipset、onboard 1000M LAN chipset,it’s a Cost-effective motherboard !

The motherboard provides 1*PCI Express x16 slot、5*PCI Express x1 slots、6*UPCIE slots,extension pattern is diversity and extension performance is strong.

1.1.Packing Contents

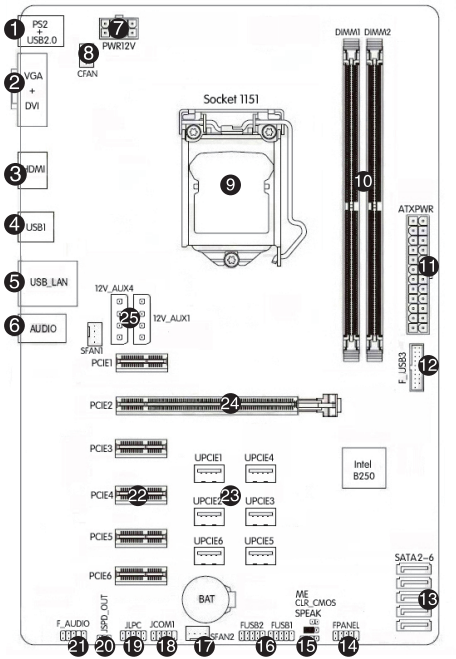
- 1*Colorful C.B250A-BTC V20 motherboard
- 2*SATA cables
- 1*Driver/Utility CD
- 1*User's Guide
- 1*I/O shield

1.2.MOTHERBOARD SPEC

CPU	· Support Intel LGA1151 CPUS	**Other Connectors**	· 2*USB2.0 headers（(F_USB20_1,FUSB20_/2/3） · 1*9-pin Front panel audio connector（F_AUDIO） · 1*System panel connector（F_PANEL） · 1*USB3.0 header（USB3F） · 3*FANs（1*CPU_FAN，2*SYS_FAN） · 1*PC speaker connector（SPEAK） · 1*debug header（JLPC） · 1*COM header（JCOM1） · 1*JSPD_OUT header（JSPD_OUT） · 1*ME header（ME） · 2*4-pin Power connector（12V_AUX1,12V_AUX4）
Chipset	· Intel B250		
Main Memory	· Dual-Channel DDR4 2400/2133MHZMHz support · Offer 2 DIMM slots		
Slots	· 1*PCI Express 3.0x16 slot · 5*PCI Express x1 slots · 6*UPCIE slots		
Storage	· 5*SATA3.0 6Gb/s ports		
USB	· 6*USB2.0+6*USB3.0		
Rear IO Connector	· 1*PS/2 Mouse/ Keyboard port · 1*LAN(RJ45) port · 2*USB 2.0 ports · 4*USB 3.0 ports · 6-Channel Audio I/O · 1*VGA+DVI Port · 1*HDMI Port	**High Definition Audio**	· 6-channel High Definition Audio Codec integrated · HD audio
		Onboard LAN	· Onboard 1000M LAN · Provides 10/100/1000Mb Ethernet

1.3.Motherboard Layout

1.PS/2 Mouse/ Keyboard port and USB2.0 ports
2.Connect to VGA+DVI monitor
3.Connect to HDMI monitor
4.Connect to USB3.0 devices
5.Connect to USB3.0 devices and LAN
6.Audio devices
7.8-pin ATX 12V Power connector
8.CPU Fan connector
9.Intel LGA1151 socket
10.DIMM slots
11.24-pin ATX Power connector
12.USB 3.0 header
13.SATA3.0 port
14.System panel connector
15.ME header/Clear CMOS jumper
/Speaker connector
16.USB 1.1/2.0 header
17.System FAN connector
18.COM header
19.JLPC header
20.JSPD_OUT header
21.Front panel audio connector
22.PCI Express x1 slot
23.UPCIE slot
24.PCI Express 3.0 x16 slot,for VGA Card
25.4-pin Power connector(auxiliary power supply)



2.Hardware Installation

This section will guide you through the installation of the motherboard. The topics covered in this section are:

- Preparing the motherboard
  - . Installing the CPU
  - . Installing the CPU fan
  - . Installing the memory
- Installing the motherboard
- Connecting cables and setting switches

2.1.Safety Instructions

To reduce the risk of fire, electric shock, and injury, always follow basic safety precautions.

Remember to remove power from your computer by disconnecting the AC main source before removing or installing any equipment from/to the computer chassis.

2.2.Preparing the Motherboard

The motherboard shipped in the box does not contain a CPU or memory. You need to purchase a CPU, a CPU fan assembly, and memory to complete this installation.

2.2.1.Installing the CPU

Be very careful when handling the CPU. Make sure not to bend or break any pins on the back. Hold the processor only by the edges and do not touch the bottom of the processor.

Use the following procedure to install the CPU onto the motherboard.

1.Unhook the socket lever by pushing down and away from the socket.

2.Lift the load plate. There is a protective socket cover on the load plate to protect the socket when there is no CPU installed.

3.Remove the protective socket cover from the load plate.

4.Remove the processor from its protective cover, making sure you hold it only by the edges.

It is a good idea to save the cover so that whenever you remove the CPU, you have a safe place to store it.

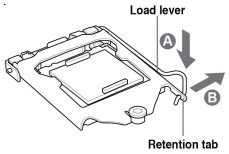
5.Align the notches in the processor with the notches on the socket.

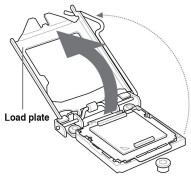
6.Lower the processor straight down into the socket with out tilting or sliding it into the socket.

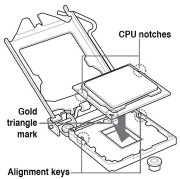
Make sure the CPU is fully seated and level in the socket.

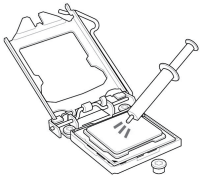
7.Close the load plate over the CPU and press down while you close and engage the socket lever.

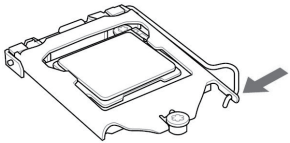
8.There are many different fan types that can be used with this motherboard. Follow the instruction that came with you fan assembly. Be sure that the fan orientation is correct for your chassis type and your fan assembly.

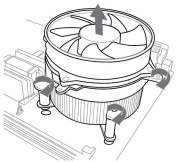












The CPU fits in only one correct orientation. DO NOT force the CPU into the socket to prevent bending the connectors on the socket and damaging the CPU!

2.3.Installing Memory DIMMs

Your new motherboard has 2 slots for DDR4 memory. They support dual channel DDR4 memory technology. There must be at least one memory bank populated to ensure normal operation. Use the following the recommendations for installing memory.

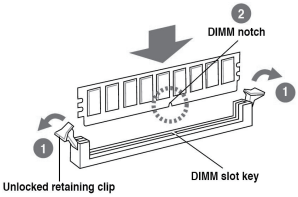
✓1 DIMM: Install into DIMM1. You can install the DIMM into any slot, however, slot 1 is preferred.

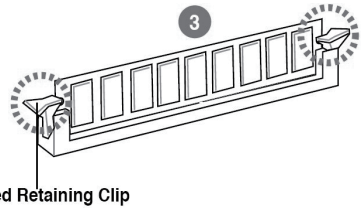
✓2 DIMMs:Install into DIMM1&DIMM2 slots, to build dual channel.

Use the following procedure to install memory DIMMs into the slots on the motherboard. Note that there is only one gap near the center of the DIMM slot. This slot matches the slot on the memory DIMM to ensure the component is installed properly.

✓Unlock a DIMM slot by pressing the module clips outward.

✓Align the memory module to the DIMM slot, and insert the module vertically into the DIMM slot. The plastic clips at both sides of the DIMM slot automatically lock the DIMM into the connector.





Locked Retaining Clip

2.4.Inslling the Motherboard

The sequence of installing the motherboard into the chassis depends on the chassis you are using and if you are replacing an existing motherboard or working with an empty chassis. Determine if it would be easier to make all the connections prior to this step or to secure the motherboard and then make all the connections. Use the following procedure to install the I/O shield and secure the motherboard into the chassis.

Be sure that the CPU fan assembly has enough clearance for the chassis covers to lock into place and for the expansion cards. Also make sure the CPU Fan assembly is aligned with the vents on the covers.

2.5.Installing the I/O Shield

The motherboard kit comes with an I/O shield that is used to block radio frequency transmissions, protects internal components from dust and foreign objects, and promotes correct airflow within the chassis.

Before installing the motherboard, install the I/O shield from the inside of the chassis. Press the I/O shield into place and make sure it fits securely. If the I/O shield does not fit into the chassis, you would need to obtain the proper size from the chassis supplier.

2.6.Securing the Motherboard into the Chassis

Most computer chassis have a base with mounting studs or spacers to allow the mother board to be secured to the chassis and help to prevent short circuits. If there are studs that do not align with a mounting hole on the motherboard, it is recommended that you remove that stud to prevent the possibility of a short circuit.

1.Carefully place the motherboard onto the studs/spacers located inside the chassis.

2.Align the mounting holes with the studs/spacers.

3.Align the connectors to the I/O shield.

4.Ensure that the fan assembly is aligned with the chassis vents according to the fan assembly instruction.

5.Secure the motherboard with a minimum of eight-to-ten screws.

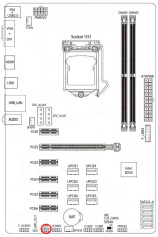
2.7.Connecting Cables and Setting Switches

This section takes you through all the connections and switch settings necessary on the motherboard. This will include:

- Power Connections
  - 24-pin ATX power
  - 8-pin ATX 12V power
- Internal Headers
  - Front panel
  - USB Headers
  - Audio
- Serial ATA III
- Chassis Fans
- Rear panel USB 2.0 Adapter
- Expansion slots

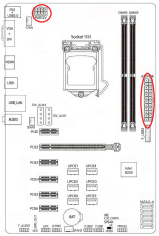
2.7.1.Debug header:JLPC

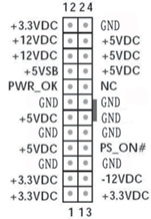
This Debug header is for Debug serial devices



2.7.2.ATX power connectors (24-pin ATXPWR, 8-pin ATX12V)

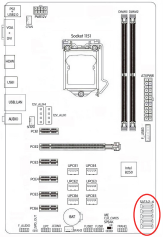
These connectors are for an ATX power supply. The plugs from the power supply are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.

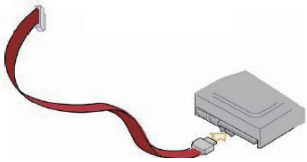




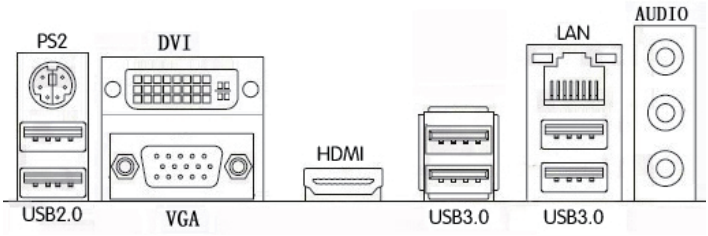
2.7.3.Serial ATA 3.0/6.0 Gb/s connectors (7-pin)

These connectors connect to Serial ATA 3.0/6.0 Gb/s hard disk drives and optical drives via Serial ATA 3.0/6.0 Gb/s signal cables.





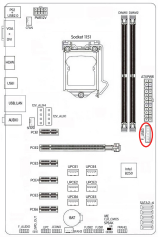
2.7.4.Back Panel IO Connector

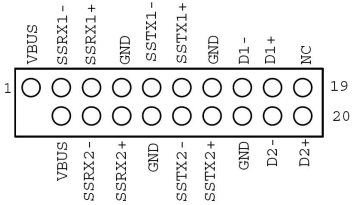


Parts	Use
PS/2 Mouse Connector	This connector is for a PS/2 mouse.
PS/2 Keyboard Connector	This connector is for a PS/2 keyboard.
LAN Jack	The standard RJ-45 jack is for connection to single Local Area Network (LAN). You can connect a network cable to it.
Lie-In(Blue)	Used for external CD player, tape player or other audio devices.
Line Out(Green)	This connector for speakers or headphones.
Side R/L(Gray)	Side surround speakers connector
VGA	Onboard VGA, connect to Monitor
DVI	Onboard DVI port, connect to DVI Monitor
HDMI	Onboard HDMI port, connect to HDMI Monitor
USB Ports	These connectors are for attaching USB devices such as keyboard, mouse, or other USB-compatible devices.

2.7.5.USB 3.0 connectors

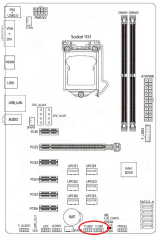
This connector is for USB 3.0 devices.

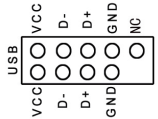




2.7.6.USB2.0 connectors

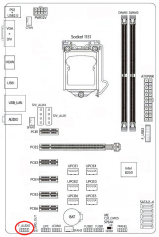
These connectors are for USB 2.0 ports. Connect the USB module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with the USB 2.0 specification that supports up to 480Mbps connection speed.

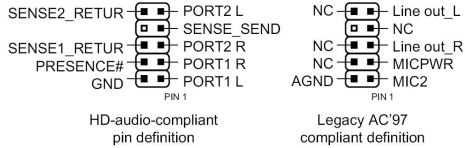




2.7.7.F_AUDIO(Front panel audio connector)

This connector is for a chassis-mounted front panel audio I/O module that supports either High Definition Audio or AC`97 audio standard. Connect one end of the front panel audio I/O module cable to this connector.



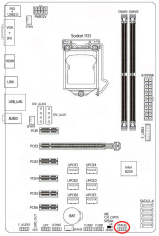


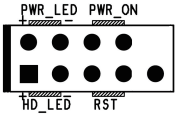
HD-audio-compliant pin definition

Legacy AC'97 compliant definition

2.7.8.System panel connector

This connector supports several chassis-mounted functions.





System power LED (2-pin PLED)

This 2-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.

Hard disk drive activity LED (2-pin IDE_LED)

This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.

System warning speaker (4-pin SPEAKER)

This 4-pin connector is for the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings.

ATX power button/soft-off button (2-pin PWRSW)

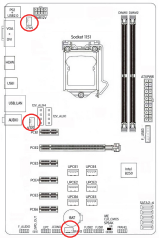
This 2-pin connector is for the system power button.

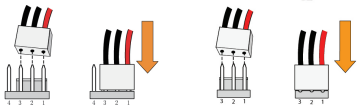
Reset button (2-pin RESET)

This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.

2.7.9.CPU, Chassis, and Power fan connectors (4-pin CPU_FAN, 3-pin PWR_FAN)

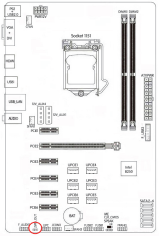
Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.





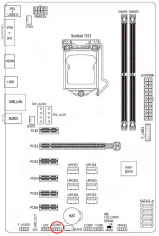
2.7.10.SPDIF header: JSPD_OUT

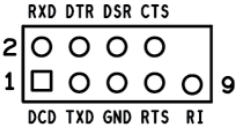
This SPDIF header is for SPDIF audio devices



2.7.11.COM header: JCOM1

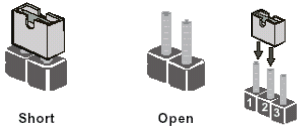
This COM header is for COM serial devices





2.7.12.Clear CMOS Jumper: CLR_CMOS

There is a CMOS RAM on board that has a power supply from external battery to keep the system configuration data. With the CMOS RAM, the system can automatically boot OS every time it is turned on. If you want to clear the system configuration, use the CLR_CMOS Jumper to clear data.



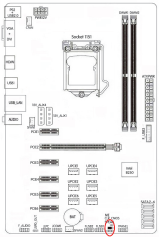
Clear CMOS PROCEDURE

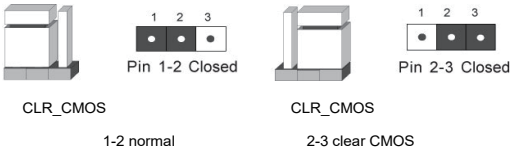
You can clear CMOS by shorting 1-2 pin. Before you clearing the CMOS, following next procedure:

1.Turn off the AC power supply and connect pins 1 and 2 together using the jumper cap.

2.Return the jumper setting to normal (pin 2 and 3) or Remove the jumper cap

3.Turn the AC power supply back on.



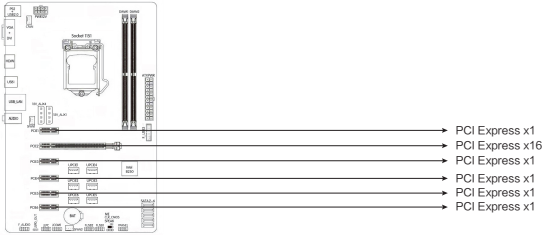


Clear CMOS settings

2.7.13.PCI Express x16 Slots

The PCI Express x16 slot is reserved for a graphics or video card. The bandwidth of the x16 slot is up to 8GB/sec.

When installing a PCI Express x16 card, be sure the retention clip snaps and locks the card into place. If the card is not seated properly, it could cause a short across the pins. Secure the card's metal bracket to the chassis back panel with the screw used to hold the blank cover.



Entering BIOS Setup

Power on the computer and the system will start the Power On Self Test (POST)process. When the message below appears on the screen, press <DEL> key to enter BIOS:

```
Press DEL to Run Setup,Press F2 to Load default values and continue
```

Boot Option Priorities (how to install operating system)

Boot device Priority Setting。If user will install operating system, please put “Boot Option #1” set to your CD-ROM or your USB device, After setting, press "F10" key to save and exit,, System boot from CD-ROM or U disk.

Copyright Notice

Technical Support

If a problem arises with your system and no solution can be obtained from the user's manual, please contact your place of purchase or local distributor. Or our engineer, send the follow information to us!

Customer name_____ Purchase date_____

Contacts _____ Contact phone_____

Contact address_____ Product model_____

Product SN _____ Dealer name_____

Dealer phone _____ Dealer address _____

Website: www.colorful.cn

Service hotline: +86400-678-5866