

Q170T

ASUS[®]

Motherboard

E11582
First Edition
April 2016

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Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Ensure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing the motherboard and adding components, carefully read all the manuals that came with the package.
- Before using the product, ensure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may be exposed to moisture.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

About this guide

This user guide contains the information you need when installing and configuring the motherboard.

How this guide is organized

This guide contains the following parts:

- **Chapter 1: Product introduction**
This chapter describes the features of the motherboard and the new technology it supports. It includes descriptions of the switches, jumpers, and connectors on the motherboard.
- **Chapter 2: BIOS information**
This chapter discusses changing system settings through the BIOS Setup menus. Detailed descriptions for the BIOS parameters are also provided.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. ASUS websites

The ASUS website provides updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. Optional documentation

Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

To ensure that you perform certain tasks properly, take note of the following symbols used throughout this manual.



DANGER/WARNING: Information to prevent injury to yourself when completing a task.



CAUTION: Information to prevent damage to the components when completing a task.



IMPORTANT: Instructions that you **MUST** follow to complete a task.



NOTE: Tips and additional information to help you complete a task.

Typography

Bold text

Indicates a menu or an item to select.

Italics

Used to emphasize a word or a phrase.

<Key>

Keys enclosed in the less-than and greater-than sign means that you must press the enclosed key.

Example: <Enter> means that you must press the Enter or Return key.

<Key1> + <Key2> + <Key3>

If you must press two or more keys simultaneously, the key names are linked with a plus sign (+).

Package contents

Check your motherboard package for the following items.

Motherboard	ASUS Q170T motherboard
Cables	2 x Serial ATA 6.0 Gb/s cables 1 x SATA power cable
Accessories	2 x I/O Shields (1 x mini-ITX, 1 x thin mini-ITX) 2 x M.2 screw packages
Application DVD	Support DVD
Documentation	User Guide



If any of the above items is damaged or missing, contact your retailer.

Q170T specifications summary

CPU	LGA1151 socket for 6th Generation Intel® Core™ i7/ i5/ i3/ Pentium®/ Celeron® processors* Supports 14nm CPU Supports Intel® Turbo Boost Technology 2.0* * The Intel® Turbo Boost Technology 2.0 support depends on the CPU types. ** Refer to www.asus.com for Intel® CPU support list.
Chipset	Intel® Q170 Chipset
Memory	2 x SO-DIMM, max. 32GB, DDR4 2133MHz, non-ECC, un-buffered memory Dual channel memory architecture Support Intel® Extreme Memory Profile (XMP) * Hyper DIMM support is subject to the physical characteristics of individual CPUs. Please refer to Memory QVL for details. ** Refer to www.asus.com for the latest Memory QVL (Qualified Vendors List).
Graphics	Integrated graphics processor Multi-VGA output support: DP/eDP/LVDS/HDMI ports - Supports DisplayPort with max. resolution of 4096 x 2304 @60Hz - Supports eDP with max. resolution of 4096 x 2304 @60Hz* - Supports HDMI with max. resolution of 4096 x 2160 @24Hz / 2560x1600@60Hz - Supports LVDS with max. resolution of 1920 x 1200 @60Hz Support up to three displays simultaneously Maximum shared memory of 1024 MB * LVDS and eDP share the same video output. An onboard header is available to switch output.
Expansion slots	1 x M.2 Socket 1 with E key, type 2230 Wi-Fi devices support 1 x M.2 Socket 3 with M Key, type 2242/2260/2280 storage devices support (both SATA & PCIE mode)
Storage	Intel® Q170 Chipset: - 4 x Serial ATA 6.0 Gb/s connectors (gray) - 1 x M.2 Socket 3 with M Key, type 2242/2260/2280 storage devices support (both SATA & PCIE mode)

(continued on the next page)

Q170T specifications summary

LAN	Dual LAN support <ul style="list-style-type: none"> - Intel® I219LM Gigabit LAN controller - Realtek® 8111H Gigabit LAN controller
Audio	Realtek ALC887-VD 4+4 channels High Definition Audio CODEC <ul style="list-style-type: none"> - Supports Jack-Detection, Multi-streaming, Anti-pop Function, and Front Panel Retasking
USB	6 x USB 3.0 ports (2 ports at mid-board, 4 ports at back panel) 5 x USB 2.0 ports (5 ports at mid-board, 2 x 2-port header, 1 x 1-port header)
ASUS unique features	Dependable stability: ASUS 5X PROTECTION II: <ul style="list-style-type: none"> - ASUS LANGuard - Surge-protected networking - ASUS Overvoltage Protection - World-class circuit-protecting power design - ASUS DIGI+ VRM- 3+1+1 Phase digital power design - ASUS DRAM Overcurrent Protection - Enhanced DRAM overcurrent protection - ASUS Stainless Steel Back I/O - 3X more durable Superb performance: UEFI BIOS: <ul style="list-style-type: none"> - Most advanced options with fast response time Easy PC DIY: Q-Design <ul style="list-style-type: none"> - ASUS Q-DIMM - ASUS Q-Slot UEFI BIOS EZ Mode - featuring friendly graphics user interface <ul style="list-style-type: none"> - ASUS CrashFree BIOS 3 - ASUS EZ Flash 3 Optimized Cooling <ul style="list-style-type: none"> - ASUS Fan Xpert One Stop Control AI Suite 3 Push Notice <ul style="list-style-type: none"> - Monitor your PC status with smart devices in real time PC Cleaner <ul style="list-style-type: none"> - Fast and easy way to get rid of unnecessary junk files Mobo Connect <ul style="list-style-type: none"> - All-in-one control between your PC and smart devices Media Streamer <ul style="list-style-type: none"> - Pipe music or movies from your PC to a smart TV - Media Streamer app for portable smartphone/tablet, supporting iOS7 and Android 4.0 system Ai Charger

(continued on the next page)

Q170T specifications summary

Rear panel I/O ports	<ul style="list-style-type: none"> 1 x DC power connector* 1 x HDMI port 1 x DisplayPort 2 x LAN (RJ-45) ports 4 x USB 3.0/2.0 ports 2 x Audio jacks <p>* Connector dimension: 7.4 x 5.1mm, support both 19V and 12V DC input</p>
Internal connectors/ switches/ buttons	<ul style="list-style-type: none"> 1 x USB 3.0/2.0 connector supports additional 2 USB 3.0/2.0 ports 2 x USB 2.0/1.1 2-port connectors support additional 4 USB 2.0/1.1 ports 1 x USB 2.0/1.1 1-port connector 1 x eDP connector 1 x LVDS connector 1 x eDP/LVDS switch jumper 1 x COM connector 1 x Chassis intrusion header 1 x SATA power connector 4 x SATA 6.0 Gb/s connector 1 x CPU fan connector 1 x Chassis fan connector 1 x Front panel audio connector (AAFP) 1 x System panel connector 1 x Speaker connector 1 x DIS ME jumper 1 x Clear CMOS header <p>Connectors for AIO System</p> <ul style="list-style-type: none"> 1 x 2-pin internal DC power connector 1 x Stereo speaker connector 1 x DMIC header 1 x Custom solutions header <p>Connectors for Flat Panel Display</p> <ul style="list-style-type: none"> 1 x Backlight inverter voltage selection header 1 x Flat panel display brightness header 1 x Panel voltage selection header 1 x Panel off header <p>TPM 2.0 IC Onboard</p>
BIOS features	<p>128 Mb Flash ROM, UEFI AMI BIOS, PnP, DMI3.0, WfM2.0, SM BIOS 3.0, ACPI 5.1, Multi-language BIOS, ASUS EZ Flash 3, CrashFree BIOS 3, F3 My Favorites, Quick Note, Last Modified log, F12 PrintScreen, and ASUS DRAM SPD (Serial Presence Detect) memory information, F6 Qfan Control</p>
Manageability	<p>WfM 2.0, DMI 3.0, WOL by PME, WOR by PME, PXE</p>
Support DVD	<ul style="list-style-type: none"> Drivers ASUS utilities ASUS Update Anti-virus software (OEM version)

(continued on the next page)

Q170T specifications summary

Operating systems	Windows® 10 (64-bit) Windows® 8.1 (64-bit) Windows® 7 (64-bit/32-bit) * Please refer to ASUS official website to download Windows® 7 installation Guide and EZ Installer to install Windows® 7. ** Warning: Before Windows® 7 64-bit installation, select other OS item under the Boot menu from Advanced Mode > Boot > Secure Boot > Other OS.
Form factor	Thin Mini-ITX form factor: 6.7" x 6.7" (17.0cm x 17.0cm)



Specifications are subject to change without notice.

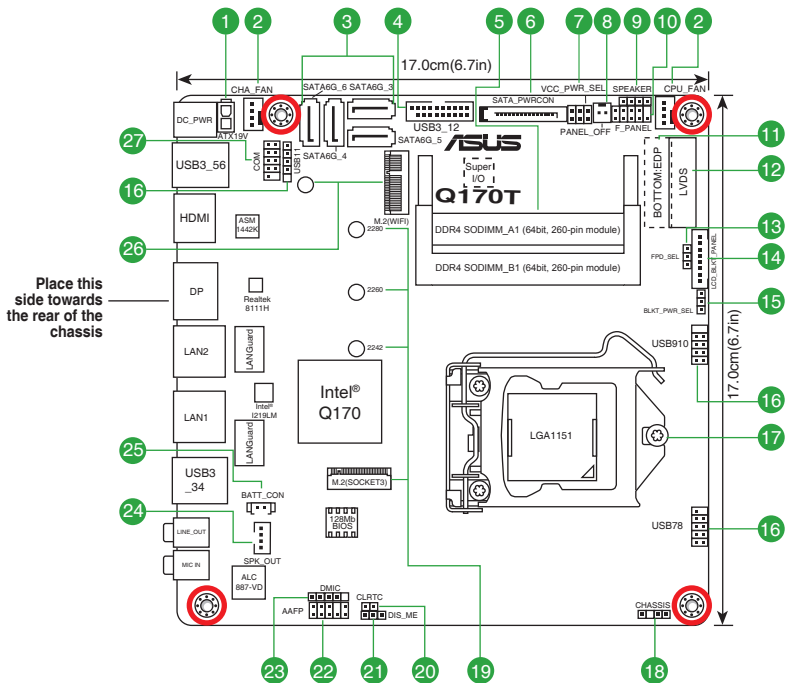
Product introduction

1

Motherboard overview



- Unplug the power cord from the wall socket before touching any component.
- Before handling components, use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, to avoid damaging them due to static electricity.
- Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, or components.
- Unplug the power cord before installing or removing the motherboard. Failure to do so can cause you physical injury and damage to motherboard components.



Scan the QR code to get the detailed pin definitions.



1 Internal DC power connector (2-pin ATX19V/12V)

This connector is for an ATX power supply. The plug from the power supply is designed to fit this connector in only one orientation. Find the proper orientation and push down firmly until the connector completely fits.



2 CPU and chassis fan connectors (4-pin CPU_FAN, 4-pin CHA_FAN)

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



Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan connectors! The CPU_FAN connector supports a CPU fan of maximum 1A (12 W) fan power.

3 Serial ATA 6.0Gb/s connectors (SATA6G_3-6)

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

4 USB 3.0 connector (20-1 pin USB3_12)

Connect a USB 3.0 module to this connector for additional USB 3.0 front or rear panel ports. This connector complies with USB 3.0 specifications and provides faster data transfer speeds of up to 5 Gbps, faster charging time for USB-chargeable devices, optimized power efficiency, and backward compatibility with USB 2.0.

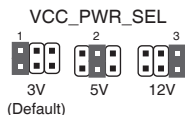
5 DDR4 SO-DIMM slots

Install 2 GB, 4 GB, 8 GB, and 16 GB non-ECC un-buffered DDR4 SO-DIMMs into these DIMM sockets.

6 SATA power connector (15-pin SATA_PWRCON)

This connector is for the SATA power cable. The power cable plug is designed to fit this connector in only one orientation. Find the proper orientation and push down firmly until the connector completely fit. To provide power to your SATA device, connect the SATA power cable to this connector

7 Panel voltage selection header (VCC_PWR_SEL)



Pins	Setting
1 (Default)	3V
2	5V
3	12V

8 Panel off header (2-pin PANEL_OFF)

This 2-pin header is for connecting a monitor switch that can turn off the LCD panel display backlight.

9 Speaker connector (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.

10 System panel connector (10-1 pin PANEL)

This connector supports several chassis-mounted functions.

11 Embedded DisplayPort (40-pin EDP)

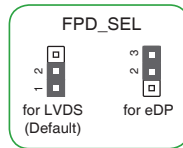
This connector is for an internal embedded DisplayPort connection.

12 LVDS connector (40-pin LVDS)

This connector is for an LCD monitor that supports Low-voltage Differential Signaling (LVDS) interface.

13 LVDS panel/eDP selector (3-pin FPD_SEL)

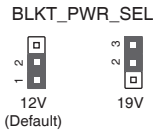
Pins	Setting
1-2 (Default)	LVDS
2-3	eDP



14 LCD panel backlight header (8-pin LCD_BLK_PANEL)

This connector is for the LCD panel backlight and brightness controls. It enables the LCD panel backlight, provides backlight control signals, and provides brightness control signals for the brightness button on the front panel.

15 Backlight inverter voltage selection header (3-pin BLKT_PWR_SEL)



Pins	Setting
1-2 (Default)	12V
2-3	19V

16 USB 2.0 connectors (10-1 pin USB78, 10-2 pin USB910; 5-1 pin USB11)

Connect the USB module cable to these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specifications and support up to 480Mbps connection speed.

17 Intel® LGA1151 CPU socket

Install Intel® LGA1151 CPU into this surface mount LGA1151 socket, which is designed for 6th Generation Intel® Core™ i7 / i5 / i3, Pentium®, and Celeron® processors



For more details, refer to **Central Processing Unit (CPU)**.

18 Chassis intrusion header (4-1 pin CHASSIS)

This connector is for a chassis-mounted intrusion detection sensor or switch. Connect one end of the chassis intrusion sensor or switch cable to this connector. The chassis intrusion sensor or switch sends a high-level signal to this connector when a chassis component is removed or replaced. The signal is then generated as a chassis intrusion event.



The chassis intrusion detection feature is disabled by default. To enable it, set the **Chassis Intrude Detect Support** item in the BIOS to **[On]**.

19

M.2 socket 3

This socket allows you to install an M.2 (NGFF) SSD module. Use the bundled screw 13020-0181000 to secure your M.2 device.



This socket supports M Key and 2242/2260/2280 storage devices.

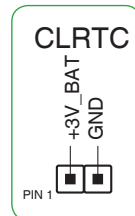
20

Clear RTC RAM (2-pin CLRTC)

This header allows you to clear the CMOS RTC RAM data of the system setup information such as date, time, and system passwords.

To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Use a metal object such as a screwdriver to short the two pins.
3. Plug the power cord and turn ON the computer.
4. Hold down the key during the boot process and enter BIOS setup to re-enter data.



If the steps above do not help, remove the onboard battery and short the two pins again to clear the CMOS RTC RAM data. After clearing the CMOS, reinstall the battery.

21

Intel® ME jumper (3-pin DIS_ME)

This jumper allows you to enable or disable the Intel® ME function. Set this jumper to pins 1-2 to enable (default) the Intel® ME function and to pins 2-3 to disable it.



Disable the Intel® ME function before updating it.

22

Front panel audio connector (10-1 pin AAFP)

This connector is for a chassis-mounted front panel audio I/O module that supports HD Audio. Connect one end of the front panel audio I/O module cable to this connector.



We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability

23

DMIC connector (5-1 pin DMIC)

The DMIC connector is for connecting the digital microphone module used in All-in-One chassis.

24

Internal stereo speaker header (4-pin SPK_OUT)

The internal mono speaker header allows connection to an internal, low-power speaker for basic system sound capability. The subsystem is capable of driving a speaker load of 4 Ohms at 3 Watts (rms).

25 RTC Battery header (2-pin BATT_CON)

This connector is for the lithium CMOS battery.

26 M.2 WIFI

This socket connects to an M.2 WI-FI device. Use the bundled screw 3020-01810100 to secure your M.2 device.

27 Serial port connector (10-1 pin COM)

Connect the serial port module cable to this connector, then install the module to a slot opening at the back of the system chassis.

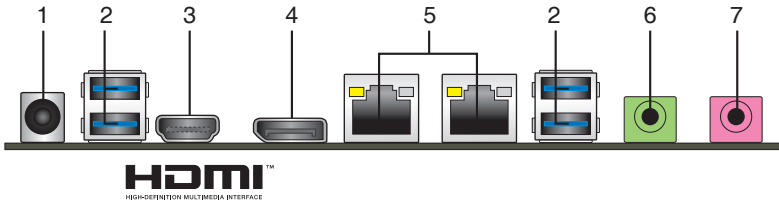
IRQ assignments for this motherboard

	A	B	C	D	E	F	G	H
HD Audio controller	shared	-	-	-	-	-	-	-
XHCI	shared	-	-	-	-	-	-	-
SATA controller	shared	-	-	-	-	-	-	-
Realtek LAN controller	-	shared	-	-	-	-	-	-
Intel LAN controller	shared	-	-	-	-	-	-	-
M.2	shared	-	-	-	-	-	-	-
IGD	shared	-	-	-	-	-	-	-
WLAN	-	-	-	shared	-	-	-	-



When using PCI cards on shared slots, ensure that the drivers support "Share IRQ" or that the cards do not need IRQ assignments. Otherwise, conflicts will arise between the two PCI groups, making the system unstable and the card inoperable.

Rear panel connectors



1. **DC power connector.** Insert the power adapter into this port.



- It supports both 19V and 12V DC input.
- The power adapter is purchased separately.



- Use the appropriate DC power adapter for the following scenarios:
 - Use a 90W adapter when a 35W CPU is installed on the system.
 - Use a 120W adapter when using your system with an LVDS panel.
 - Use a high-rated adapter (above 90W) when a high-rated CPU (45W or higher CPU) is installed on the system.

2. **USB 3.0 ports.** These 9-pin Universal Serial Bus (USB) ports are for USB 3.0 / 2.0 devices.

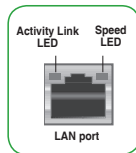


- USB 3.0 devices can only be used for data storage.
- We strongly recommend that you connect USB 3.0 devices to USB 3.0 ports for faster and better performance from your USB 3.0 devices.
- Due to the design of the Intel® 100 series chipset, all USB devices connected to the USB 2.0 and USB 3.0 ports are controlled by the xHCI controller. Some legacy USB devices must update their firmware for better compatibility.

3. **HDMI port.** This port is for a High-Definition Multimedia Interface (HDMI) connector, and is HDCP compliant allowing playback of HD DVD, Blu-Ray, and other protected content.

4. **DisplayPort.** This port is for DisplayPort-compatible devices.

5. **LAN (RJ-45) ports.** These ports allow Gigabit connection to a Local Area Network (LAN) through a network hub.



LAN port LED indications

Activity/Link LED		Speed LED	
Status	Description	Status	Description
Off	No link	OFF	10Mbps connection
Orange	Linked	ORANGE	100Mbps connection
Orange (Blinking)	Data activity	GREEN	1Gbps connection
Orange (Blinking then steady)	Ready to wake up from S5 mode	–	–

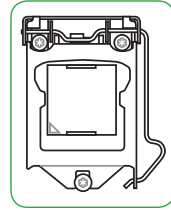
6. **Line Out port (lime).** This port connects to a headphone or a speaker.
7. **Microphone port (pink).** This port connects to a microphone.

Audio 2.1, 4.1, 5.1, or 7.1-channel configuration

Port	Headset 2.1-channel	4.1-channel	5.1-channel	7.1-channel
Line Out (Rear panel)	Front Speaker Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
MIC(Rear panel)	MIC	Rear Speaker Out	Rear Speaker Out	Rear Speaker Out
Headphone (Front panel)	Headphone	Headphone	Center/Subwoofer Speaker Out	Center/Subwoofer Speaker Out
MIC (Front panel)	MIC	MIC	MIC	Side Speaker Out

Central Processing Unit (CPU)

This motherboard comes with a surface mount LGA1151 socket designed for 6th Generation Intel® Core™ i7 / i5 / i3, Pentium®, and Celeron® processors

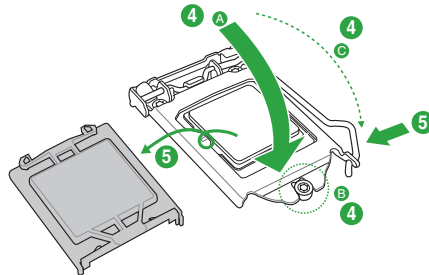
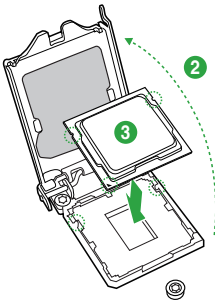
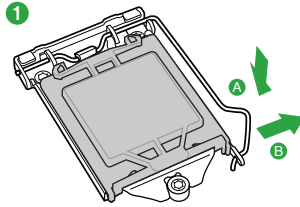
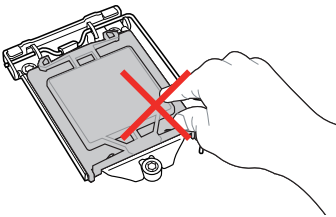


Unplug all power cables before installing the CPU.



- Ensure that you install the correct CPU designed for the LGA1151 socket only. DO NOT install a CPU designed for LGA1150, LGA1155 and LGA1156 sockets on the LGA1151 socket.
- Upon purchase of the motherboard, ensure that the PnP cap is on the socket and the socket contacts are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket contacts/motherboard components.
- Keep the cap after installing the motherboard. ASUS will process Return Merchandise Authorization (RMA) requests only if the motherboard comes with the cap on the LGA1151 socket.
- The product warranty does not cover damage to the socket contacts resulting from incorrect CPU installation/removal, or misplacement/loss/incorrect removal of the PnP cap.

Installing the CPU

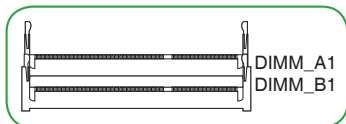


Apply the Thermal Interface Material to the CPU heatsink and CPU before you install the heatsink and fan if necessary.

System memory

Overview

This motherboard comes with two Double Data Rate 4 (DDR4) Small Outline Dual Inline Memory Module (SO-DIMM) sockets. The figure illustrates the location of the DDR4 SO-DIMM sockets:



Channel	Sockets
Channel A	DIMM_A1
Channel B	DIMM_B1



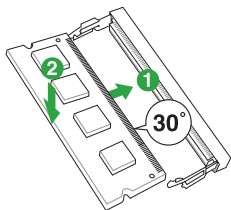
- You may install varying memory sizes in Channel A and Channel B. The system maps the total size of the lower-sized channel for the dual-channel configuration. Any excess memory from the higher-sized channel is then mapped for single-channel operation.
- Always install the DIMMS with the same CAS Latency. For an optimum compatibility, we recommend that you install memory modules of the same version or data code (D/C) from the same vendor. Check with the vendor to get the correct memory modules.
- When you install only one memory module, install it to DIMM_A1 slot for the motherboard to work properly.
- This motherboard supports 1.2V DDR4 DIMMs.
- Due to the memory address limitation on 32-bit Windows® OS, when you install 4GB or more memory on the motherboard, the actual usable memory for the OS can be about 3GB or less. For effective use of memory, we recommend that you do any of the following:
 - Use a maximum of 3 GB system memory if you are using a 32-bit Windows® OS.
 - Install a 64-bit Windows® OS if you want to install 4GB or more on the motherboard.
 - For more details, refer to the Microsoft® support site at <http://support.microsoft.com/kb/929605/en-us>.



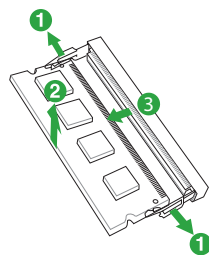
Visit the ASUS website at www.asus.com for the latest QVL.

Installing a DIMM

To install a DIMM



To remove a DIMM



BIOS information

2



- Scan the QR code to view the BIOS update guide.
- Before using the ASUS CrashFree BIOS 3 utility, rename the BIOS file in the removable device into **Q170T.CAP**.



BIOS setup program

Use the BIOS Setup program to update the BIOS or configure its parameters. The BIOS screens include navigation keys and brief online help to guide you in using the BIOS Setup program.

Entering BIOS Setup at startup

To enter BIOS Setup at startup:

Press <Delete> or <F2> during the Power-On Self Test (POST). If you do not press <Delete> or <F2>, POST continues with its routines.

Entering BIOS Setup after POST

To enter BIOS Setup after POST:

- Press <Ctrl>+<Alt>+ simultaneously.
- Press the reset button on the system chassis.
- Press the power button to turn the system off then back on. Do this option only if you failed to enter BIOS Setup using the first two options.



Using the power button, reset button, or the <Ctrl>+<Alt>+ keys to force reset from a running operating system can cause damage to your data or system. We recommend you always shut down the system properly from the operating system.



- The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the ASUS website at www.asus.com to download the latest BIOS file for this motherboard.
- If the system becomes unstable after changing any BIOS setting, load the default settings to ensure system compatibility and stability. Select the **Load Optimized Defaults** item under the Exit menu or press hotkey F5.
- If the system fails to boot after changing any BIOS setting, try to clear the CMOS and reset the motherboard to the default value. See section **Motherboard overview** for information on how to erase the RTC RAM.

BIOS menu screen

The BIOS setup program can be used under two modes: **EZ Mode** and **Advanced Mode**. Press <F7> to change between the two modes.

EZ Mode

By default, the EZ Mode screen appears when you enter the BIOS setup program. The EZ Mode provides you an overview of the basic system information, and allows you to select the display language, system performance mode, fan profile and boot device priority. To access the Advanced Mode, click **Advanced Mode(F7)** or press <F7>.



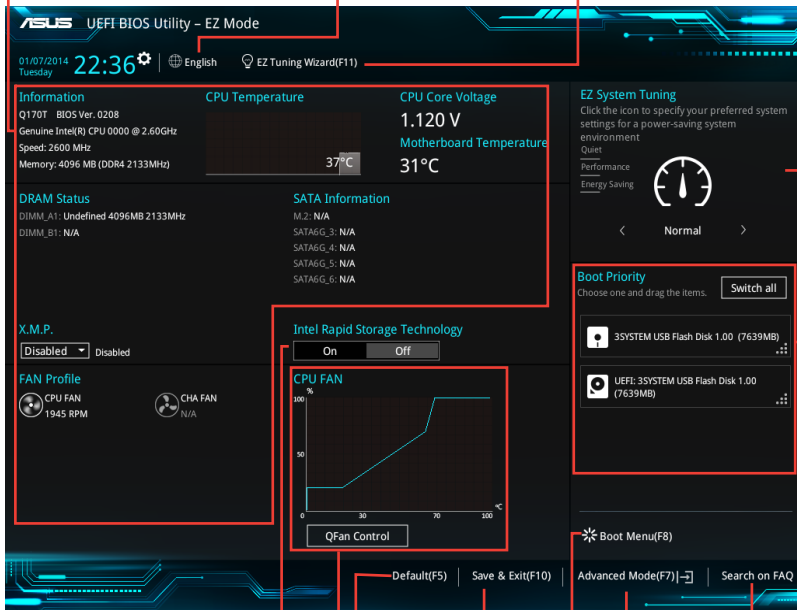
The default screen for entering the BIOS setup program can be changed. Refer to the **Setup Mode** item in **Boot menu** for details.

Displays the CPU/motherboard temperature, CPU voltage output, CPU/chassis fan speed, and SATA information

Selects the display language of the BIOS setup program

Displays the system properties of the selected mode. Click < or > to switch EZ System Tuning modes

Creates storage RAID and configures system overlocking



Enables or disables the Intel Rapid Storage Technology

Displays the CPU Fan's speed. Click the button to manually tune the fans

Loads optimized default settings

Saves the changes and resets the system

Shows the bootable devices

Displays the Advanced mode menus

Searches FAQ

Selects the boot device priority



The boot device options vary depending on the devices you installed to the system.

Advanced Mode

The Advanced Mode provides advanced options for experienced end-users to configure the BIOS settings. The figure below shows an example of the **Advanced Mode**. Refer to the following sections for the detailed configurations.



To access the EZ Mode, click **EzMode(F7)** or press <F7>.

The screenshot shows the ASUS UEFI BIOS Utility in Advanced Mode. The interface is dark-themed with blue and white text. At the top, there is a menu bar with options like Language, MyFavorite, Q-Fan control, EZ Tuning Wizard, Quick Note, and Hot Keys. Below the menu bar, there are tabs for My Favorites, Main, Ai Tweaker, Advanced, Monitor, Boot, Tool, and Exit. The main area contains various configuration fields such as CPU Core Ratio, BCLK Frequency, DRAM Frequency, and EPU Power Saving Mode. On the right side, there is a Hardware Monitor section displaying CPU and Memory status. At the bottom, there is a footer with version information and a search bar for the FAQ.

Labels in the image point to the following components:

- Menu bar**: Points to the top navigation bar.
- Language**: Points to the Language option in the menu bar.
- MyFavorite**: Points to the MyFavorite option in the menu bar.
- Q-Fan control**: Points to the Q-Fan control option in the menu bar.
- EZ Tuning Wizard**: Points to the EZ Tuning Wizard option in the menu bar.
- Quick Note**: Points to the Quick Note option in the menu bar.
- Hot Keys**: Points to the Hot Keys option in the menu bar.
- Sub-menu item**: Points to the Ai Tweaker tab.
- Menu items**: Points to the My Favorites, Main, Ai Tweaker, Advanced, Monitor, Boot, Tool, and Exit tabs.
- General help**: Points to the information icon (i) in the bottom left.
- Configuration fields**: Points to the CPU Core Ratio and BCLK Frequency settings.
- Pop-up window**: Points to the dropdown menu for CPU Core Ratio.
- Scroll bar**: Points to the scroll bar for the CPU Core Ratio dropdown.
- Last modified settings**: Points to the Last Modified button in the bottom right.
- Searches FAQ**: Points to the Search on FAQ button in the bottom right.
- Goes back to EZ Mode**: Points to the EzMode(F7) button in the bottom right.
- Displays the CPU/motherboard temperature, CPU and memory voltage output**: Points to the Hardware Monitor section on the right.

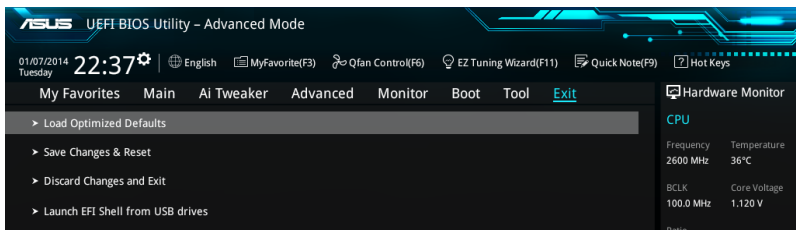
Search on FAQ

Move your mouse over this button to show a QR code. Scan this QR code with your mobile device to connect to the ASUS BIOS FAQ web page. You can also scan the QR code below.



Exit menu

The Exit menu items allow you to load the optimal default values for the BIOS items, and save or discard your changes to the BIOS items.



Load Optimized Defaults

This option allows you to load the default values for each of the parameters on the Setup menus. When you select this option or if you press <F5>, a confirmation window appears. Select Yes to load the default values.

Save Changes & Reset

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved. When you select this option or if you press <F10>, a confirmation window appears. Select OK to save changes and exit.

Discard Changes and Exit

This option allows you to exit the Setup program without saving your changes. When you select this option or if you press <Esc>, a confirmation window appears. Select OK to discard changes and exit.

Launch EFI Shell from USB drives

This option allows you to attempt to launch the EFI Shell application (shellx64.efi) from one of the available USB devices.

Appendix

Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IC: Canadian Compliance Statement

Complies with the Canadian ICES-003 Class B specifications. This device complies with RSS 210 of Industry Canada. This Class B device meets all the requirements of the Canadian interference-causing equipment regulations.

This device complies with Industry Canada license exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada. Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Cet appareil est conforme aux normes CNR exemptes de licence d'Industrie Canada. Le fonctionnement est soumis aux deux conditions suivantes :

- (1) cet appareil ne doit pas provoquer d'interférences et
- (2) cet appareil doit accepter toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité de l'appareil.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

VCCI: Japan Compliance Statement

Class B ITE

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

V C C I - B

KC: Korea Warning Statement

B급 기기 (가정용 방송통신기자재)

이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

REACH

Complying with the REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) regulatory framework, we published the chemical substances in our products at ASUS REACH website at <http://csr.asus.com/english/REACH.htm>.



DO NOT throw the motherboard in municipal waste. This product has been designed to enable proper reuse of parts and recycling. This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.



DO NOT throw the mercury-containing button cell battery in municipal waste. This symbol of the crossed out wheeled bin indicates that the battery should not be placed in municipal waste.

ASUS Recycling/Takeback Services

ASUS recycling and takeback programs come from our commitment to the highest standards for protecting our environment. We believe in providing solutions for you to be able to responsibly recycle our products, batteries, other components as well as the packaging materials. Please go to <http://csr.asus.com/english/Takeback.htm> for detailed recycling information in different regions.

Regional notice for California

WARNING! This product may contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

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English ASUSTek Computer Inc. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of related Directives. Full text of EU declaration of conformity available at: www.asus.com/support

Français AsusTek Computer Inc. déclare par la présente que cet appareil est conforme aux critères essentiels et autres clauses pertinentes des directives concernées. La déclaration de conformité de l'UE peut être téléchargée à partir du site Internet suivant: www.asus.com/support.

Deutsch ASUSTek Computer Inc. erklärt hiermit, dass dieses Gerät mit den wesentlichen Anforderungen und anderen relevanten Bestimmungen der zugehörigen Richtlinien übereinstimmt. Der gesamte Text der EU-Konformitätserklärung ist verfügbar unter: www.asus.com/support

Italiano ASUSTek Computer Inc. con la presente dichiara che questo dispositivo è conforme ai requisiti essenziali e alle altre disposizioni pertinenti con le direttive correlate. Il testo completo della dichiarazione di conformità UE è disponibile all'indirizzo: www.asus.com/support

Русский Компания ASUS заявляет, что это устройство соответствует основным требованиям и другим соответствующим условиям соответствующих директив. Подробную информацию, пожалуйста, смотрите на www.asus.com/support

Български С настоящото ASUSTek Computer Inc. декларира, че това устройство е в съответствие със съществените изисквания и другите приложими постановления на свързаните директиви. Пълният текст на декларацията за съответствие на ЕС е достъпен на адрес: www.asus.com/support

Hrvatski ASUSTek Computer Inc. ovim izjavljuje da je ovaj uređaj skladan s bitnim zahtjevima i ostalim odgovarajućim odredbama vezanih direktiva. Cijeli tekst EU izjave o skladnosti dostupan je na: www.asus.com/support

Čeština Společnost ASUSTek Computer Inc. tímto prohlašuje, že toto zařízení splňuje základní požadavky a další příslušná ustanovení souvisejících směrnic. Plné znění prohlášení o shodě EU je k dispozici na adrese: www.asus.com/support

Dansk ASUSTek Computer Inc. erklærer hermed, at denne enhed er i overensstemmelse med hovedkravene og andre relevante bestemmelser i de relaterede direktiver. Hele EU-overensstemmelseserklæringen kan findes på: www.asus.com/support

Nederlands ASUSTek Computer Inc. verklaart hierbij dat dit apparaat voldoet aan de essentiële vereisten en andere relevante bepalingen van de verwante richtlijnen. De volledige tekst van de EU-verklaring van conformiteit is beschikbaar op: www.asus.com/support

Eesti Käesolevaga kinnitab ASUSTek Computer Inc, et see seade vastab asjakohaste direktiivide olulistele nõuetele ja teistele asjassepuutuvatele sätetele. El vastavusdeklaratsiooni täielik tekst on saadaval järgmisel aadressil: www.asus.com/support

Suomi ASUSTek Computer Inc. ilmoittaa täten, että tämä laite on asiaankuuluvien direktiivien olennaisten vaatimusten ja muiden tätä koskevien säädösten mukainen. EU-yhdenmukaisuusilmoituksen koko teksti on luettavissa osoitteessa: www.asus.com/support

Ελληνικά Με το παρόν, η ASUStek Computer Inc. δηλώνει ότι αυτή η συσκευή συμμορφώνεται με τις θεμελιώδεις απαιτήσεις και άλλες σχετικές διατάξεις των Οδηγιών της ΕΕ. Το πλήρες κείμενο της δήλωσης συμμόρφωσης είναι διαθέσιμο στη διεύθυνση: www.asus.com/support

Magyar Az ASUSTek Computer Inc. ezennel kijelenti, hogy ez az eszköz megfelel a kapcsolódó irányelvek lényeges követelményeinek és egyéb vonatkozó rendelkezéseinek. Az EU megfélelősegi nyilatkozat teljes szövege innen letölthető: www.asus.com/support

Latviski ASUSTek Computer Inc. ar šo paziņo, ka šī ierīce atbilst saistošo Direktīvu būtiskajām prasībām un citiem citiem saistošajiem nosacījumiem. Pilns ES atbilstības paziņojuma teksts pieejams šeit: www.asus.com/support

Lietuvių „ASUSTek Computer Inc.“ šiuo tvirtina, kad šis įrenginys atitinka pagrindinius reikalavimus ir kitas svarbias susijusių direktyvų nuostatas. Visą ES atitikties deklaracijos tekstą galima rasti: www.asus.com/support

Norsk ASUSTek Computer Inc. erklærer herved at denne enheten er i samsvar med hovedsaklige krav og andre relevante forskrifter i relaterte direktiver. Fullstendig tekst for EU-samsvarserklæringen finnes på: www.asus.com/support

Polski Firma ASUSTek Computer Inc. niniejszym oświadcza, że urządzenie to jest zgodne z zasadniczymi wymogami i innymi właściwymi postanowieniami powiązanych dyrektyw. Pełny tekst deklaracji zgodności UE jest dostępny pod adresem: www.asus.com/support

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Srpski ASUSTek Computer Inc. ovim izjavljuje da je ovaj uređaj u saglasnosti sa osnovnim zahtevima i drugim relevantnim odredbama povezanih Direktiva. Pun tekst EU deklaracije o usaglasjenosti je dostupan da adres: www.asus.com/support

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Slovenščina ASUSTek Computer Inc. izjavlja, da je ta naprava skladna z bistvenimi zahtevami in drugimi ustreznimi določbami povezanih direktiv. Celotno besedilo EU-izjave o skladnosti je na voljo na spletnem mestu: www.asus.com/support

Español Por la presente, ASUSTek Computer Inc. declara que este dispositivo cumple los requisitos básicos y otras disposiciones pertinentes de las directivas relacionadas. El texto completo de la declaración de la UE de conformidad está disponible en: www.asus.com/support

Svenska ASUSTek Computer Inc. förklarar härmed att denna enhet överensstämmer med de grundläggande kraven och andra relevanta föreskrifter i relaterade direktiv. Fulltext av EU-försäkran om överensstämmelse finns på: www.asus.com/support

Українська ASUSTek Computer Inc. заявляє, що цей пристрій відповідає основним вимогам та іншим відповідним положенням відповідних Директив. Повний текст декларації відповідності стандартам ЄС доступний на: www.asus.com/support

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ASUS contact information

ASUSTeK COMPUTER INC.

Address 4F, No. 150, Li-Te Road, Peitou, Taipei 112, Taiwan
Telephone +886-2-2894-3447
Fax +886-2-2890-7798
Web site www.asus.com

Technical Support

Telephone +86-21-38429911
Fax +86-21-5866-8722, ext. 9101#
Online support <http://qr.asus.com/techserv>

ASUS COMPUTER INTERNATIONAL (America)

Address 800 Corporate Way, Fremont, CA 94539, USA
Telephone +1-510-739-3777
Fax +1-510-608-4555
Web site <http://www.asus.com/us/>

Technical Support

Support fax +1-812-284-0883
Telephone +1-812-282-2787
Online support <http://qr.asus.com/techserv>

ASUS COMPUTER GmbH (Germany and Austria)

Address Harkort Str. 21-23, 40880 Ratingen, Germany
Fax +49-2102-959931
Web site <http://www.asus.com/de>
Online contact <http://eu-rma.asus.com/sales>

Technical Support

Telephone +49-2102-5789555
Support Fax +49-2102-959911
Online support <http://qr.asus.com/techserv>

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2. 1077(a)



Responsible Party Name: Asus Computer International

Address: 800 Corporate Way, Fremont, CA 94539.

Phone/Fax No: (510)739-3777/(510)608-4555

hereby declares that the product

Product Name : Motherboard

Model Number : Q170T

Conforms to the following specifications:

FCC Part 15, Subpart B, Unintentional Radiators

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Representative Person's Name : Steve Chang / President

A handwritten signature in blue ink that reads "Steve Chang".

Signature :

Date : Apr. 26, 2016

Ver. 140331

* Full text of EU declaration of conformity available at: www.asus.com/support