

1: Chapter 6 Motherboards Test - ProProfs Quiz

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On-die Full core The problem originally forcing the L2 cache to run at less than the processor core speed was simple: Intel built its own high-speed cache memory chips for the Xeon processors, but it also made them very expensive. A breakthrough occurred in the second-generation Celeron, where Intel built both the L1 and L2 caches directly on the processor die, where they both ran at the full-core speed of the chip. In fact virtually all future processors from Intel and AMD have adopted or will adopt on-die L2 cache as it is the only cost-effective way to include the L2 and bring the speed up. The external L2 cache in those processors contains an additional Note in Table 3. Processor Speed Ratings A common misunderstanding about processors is their different speed ratings. This section covers processor speed in general, and then provides more specific information about Intel processors. A crystal oscillator controls clock speeds using a sliver of quartz sometimes contained in what looks like a small tin container. Newer systems include the oscillator circuitry in the motherboard chipset, so it might not be a visible separate component on newer boards. As voltage is applied to the quartz, it begins to vibrate oscillate at a harmonic rate dictated by the shape and size of the crystal sliver. The oscillations emanate from the crystal in the form of a current that alternates at the harmonic rate of the crystal. This alternating current is the clock signal that forms the time base on which the computer operates. A typical computer system runs millions of these cycles per second, so speed is measured in megahertz. One hertz is equal to one cycle per second. An alternating current signal is like a sine wave, with the time between the peaks of each wave defining the frequency see Figure 3. In , Hertz confirmed the electromagnetic theory, which states that light is a form of electromagnetic radiation and is propagated as waves. A single cycle is the smallest element of time for the processor. Every action requires at least one cycle and usually multiple cycles. To transfer data to and from memory, for example, a modern processor such as the Pentium II needs a minimum of three cycles to set up the first memory transfer and then only a single cycle per transfer for the next three to six consecutive transfers. The extra cycles on the first transfer are normally called wait states. A wait state is a clock tick in which nothing happens.

2: Processor Specifications | Microprocessor Types and Specifications | InformIT

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Introduction to Hardware Concepts Chapter 3: Form Factors and Power Supplies Objectives: This chapter introduces the student to computer case, motherboard, and power concepts. The objectives important to this chapter are: The chapter begins with a discussion of form factors for cases, power supplies, and motherboards. A form factor is defined as a size, shape, and set of features. The author observes that, when building a computer, you should pick a form factor for the motherboard first, which will limit or determine your choices for the case and the power supply. Consider these basic requirements: They have two main connectors for power: AT boards are larger than the other styles listed here. It may be recognized by its size, and the placement of the processor in front of the expansion bus slots, which puts it in the way of longer cards. AT power supplies blow air into the system. The board is 13 inches by 8. The processor is still in the way of the expansion slots. A problem with this design is that devices mounted in the case often have to string cables all the way across the motherboard to connect to it. ATX system boards have one main connector for power: The originals had 20 pins, but later models have In between, there were models that had a separate 12 volt connector just for the processor. This was incorporated into the 24 pin design. The processor on an ATX board is beside the expansion slots, not in front of them. Newer models of processors typically use less power. ATX power supplies blow air out of the system. ATX boards have a soft switch. Operating systems such as Windows 98, , and XP can turn the power off when shutting down. BTX system boards have one main connector for power, a 24 pin P1. BTX power supplied blow air out of the system. NLX system boards have only one expansion slot. It is used for a riser card, which may contain other expansion slots, and connectors for floppy or hard drives. NLX boards will have video circuits included on the board. LPX boards are low end boards, unsuited for newer processors due to heat and size. LPX boards are frequently changed by a manufacturer to make them proprietary. This means that parts can only be obtained from that manufacturer. Backplane Systems A backplane is not a motherboard. It typically only holds expansion slots, one of which will be used for a mothercard. Active backplanes have some slots, buffers, and driver circuits. Passive backplanes have no circuits, just a slot for the mothercard. These systems are not for personal computers, but are used in rack systems. Three varieties of case types are listed: Desktop - typically have four drive bays, about six expansion slots, and were meant to sit horizontally on a desk. The text puts compact cases low profile cases in this category. They are typically smaller, and meant for low cost, less powerful computers. Tower - typically sits vertically on a desk or on the floor bad idea: These come in a variety of sizes, the larger ones generally for more powerful computers and servers. These vary in thickness and weight, number of slots and ports, and processor power. The size of the case may require that the power supply be external, and in some cases that peripheral devices are external as well. The chapter continues with a discussion of how electricity works. It introduces some basic electrical terms that are used in the text such as: For instance, in order to feel a discharge of static electricity, there must be a difference of or more volts between you and some object. V ampere - a measure of electrical current. Also called an amp, it is a measure of how much electricity is flowing through a system. Amps are given by the formula volts divided by ohms. A ohm - a unit of electrical resistance. Wires are rated as by their electrical resistance. For instance, coaxial cable used in networking is usually required to be 50 ohm cable. Power supplies are rated as being able to supply a certain number of watts. W Your text uses these terms in a general way. While we are at it, Mr. The text explains that Alternating Current AC travels one way through a circuit, then changes to flowing the other way. In the United States, this oscillation takes place about 60 times per second. Direct Current DC does not oscillate. Power supplies are meant to produce direct current DC power for most components. Since they are meant to be plugged into a source of alternating current AC , the power supply must include one or more rectifiers which are AC to DC converters. The power supply also includes a transformer, which changes the voltage from or to several voltages needed by the computer: Voltages and other standards vary from country to

country. The text explains some common electrical standards for wiring, relating to the color of the insulation on the wire. These standards may vary. Common Wiring Standards in Homes and Buildings Green or non-insulated wires are often used for ground. Black wires are often used for hot power from source in and volt circuits. White wires are often used for neutral return to source in and volt circuits. Red wires are often used as the second hot line in volt circuits. Wiring in Computers Inside computers, black wires are often used for ground. Inside computers, red wires are often used as the only hot line. The text offers more terminology. You should be aware of the meaning of the following terms: Made of three layers of different kinds of semiconductors. It is meant to serve as a buffer for circuits that need an even flow of current. Diodes are used to construct a rectifier, which converts AC to DC. The text offers a list of safety advice about working on computer. Some items in the list are to keep you from damaging the equipment, some to keep you from damaging yourself. Every day I am amazed by another professional who did not make any notes about what he did, and who cannot undo a mistake or tell anyone what troubleshooting steps he has tried. Cellophane, packing tape, plastic foam, and other items hold static electricity. Remove them from your work area as soon as you open the packages that they come in. Keep components away from hair and clothing. Hair and clothing can carry electric charge, can snag on equipment and cause malfunctions, and worst case, can pull you into contact with hot, sharp, or crushing devices. Keep screws, spacers, and small parts where you can find them. The book suggests a tray, or other container. An empty egg carton can work, if you can find the paper kind. No plastic foam around the work area, remember? Do not stack boards, cards, or other devices, because you can break pieces off when you move them. Regarding cards and motherboards: Hold them by the edges. The main thing is avoiding static discharge from you to the component. Do not touch chips with magnetic tools. In general, do not work on computers with magnetic tools. Do not use graphite pencils to change DIP switches. Graphite conducts electricity, and it can break or rub off in the switch. If you need something to perform this task, the orangewood sticks sold in any cosmetics department are ideal. They are strong, hold a point, and they do not conduct electricity. In a classroom, have your work checked by your instructor before closing the case or applying power.

3: Chapter Motherboards, Processors, and Adapter Cards - CompTIA A+ Cert Guide [Book]

Motherboards, Processors, and Adapter Cards This chapter covers the following subjects: " Motherboards and Their Components " This section talks about the foundation of the computer, form factors, integrated ports and interfaces, memory slots, and expansion slots, and demonstrates how to install and troubleshoot motherboards.

4: Chapter 7 - Motherboards

At one time, external cache memory was only on the motherboard, but today's processors usually have L2 cache installed on the same chip as the processor, but electronically separated from the inner workings of the process.

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6: Chapter 3: Form Factors and Power Supplies

Chapter 3 Personal Computer Components: Motherboards and Processors. CERTIFICATION OBJECTIVES Given a scenario, configure settings and use BIOS/UEFI tools on a PC.

Microprocessor microcontroller and programming basics Hypnography Volume I The Lutheran Handbook on Marriage The books of ember Growing Up With Television Baby clothes patterns Readings in the psychology of childhood and adolescence. American casino guide 2014 The Parables of the Judgement Practice strategies 6 Researching others: feminist methodology and the A Quick Reference to Essay Writing Bilateral and multilateral factors in Sri Lankas foreign policy The Digital Sublime European Collections (Library of Congress) Kingdom of the Blind (Large Print Edition) The story of the thirteenth treasure T. A. Barron Saunders nclx study guide What are stocks really worth? Vikings (Creative History Activity Packs) XX. In Nat. Sanctorum Petri et Marcellini 174 Inspirational Sayings for Kids Are all religions true? 15. Boy-Friendly Territory Famous Actresses Of The Day In America Tally 7.2 manual 1st year physics numericals Contemporary security studies 3rd edition Agricultural Research, Extension, and Education Reauthorization Reform Act of 1997 Ltr 450 service manual Difference between planned and emergent change The st martins handbook The tenth century : The new litmus test for the Bibles historical relevance Jeremiah 34-52, Lamentations National Ski Patrol System recognition act of 1979, S. 43 The Old Farmers Almanac 2005 Every Day Calendar Seven Soldiers of Victory (Seven Soldiers of Victory Archives) Explain literature review in research Americas Black founders Robbins pathology international edition