Intel AW80577GG0451MA

Intel PENTIUM Dual-CORE Mobile T4300 Instruction Manual

Model: AW80577GG0451MA

1. Overview

The Intel Pentium Dual-Core Mobile T4300 is a high-performance mobile processor designed for laptops and other portable computing devices. This CPU features a dual-core architecture, providing efficient multitasking capabilities and improved performance for everyday computing tasks. It operates at a frequency of 2.1 GHz with an 800 MHz Front Side Bus (FSB) and is designed for Socket P motherboards.

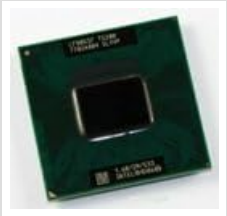


Image 1.1: The Intel Pentium Dual-Core Mobile T4300 processor. This image shows the top view of the CPU, highlighting its compact form factor and the integrated heat spreader.

Key Features:

- **Dual-Core Architecture:** Enables efficient handling of multiple applications simultaneously.
- **2.1 GHz Clock Speed:** Provides robust performance for general computing.
- **800 MHz Front Side Bus (FSB):** Facilitates fast data transfer between the CPU and other components.
- **Socket P Compatibility:** Designed for specific mobile motherboard platforms.
- **EM64T Technology:** Supports 64-bit computing environments.
- **Enhanced SpeedStep Technology:** Optimizes power consumption and heat generation.
- **Execute Disable Bit:** Enhances system security against certain types of malicious software.
- **Refurbished Condition:** This CPU is a refurbished working unit.

2. Setup & Installation

Installing a mobile processor requires careful handling and adherence to specific procedures. It is recommended that installation be performed by a qualified technician. Incorrect installation can damage the CPU, motherboard, or other components.

Installation Steps:

1. **Prepare the Work Area:** Ensure a clean, static-free environment. Use an anti-static wrist strap to prevent electrostatic discharge (ESD) damage.
2. **Access the CPU Socket:** Power off and unplug the laptop. Remove the necessary panels to access the motherboard and the CPU socket. Consult your laptop's service manual for specific instructions.
3. **Remove Old CPU (if applicable):** If replacing an existing CPU, carefully unlock the socket lever and gently lift the old processor straight up.
4. **Clean the Socket:** Ensure the CPU socket is free of dust or debris. Do not touch the pins inside the socket.
5. **Apply Thermal Paste:** Apply a small, pea-sized amount of high-quality thermal paste to the center of the new CPU's integrated heat spreader (IHS). This ensures efficient heat transfer to the cooler.
6. **Seat the New CPU:** Align the triangular marker on the CPU with the corresponding marker on the socket. Gently lower the CPU straight into the socket. Do not force it. If it does not seat easily, re-check alignment.
7. **Secure the CPU:** Once the CPU is properly seated, push down the socket lever to lock the processor in place.
8. **Install CPU Cooler:** Reinstall the CPU cooler (heatsink and fan assembly) according to your laptop's specifications. Ensure proper contact and secure all mounting screws.
9. **Reassemble Laptop:** Reconnect any disconnected cables and reattach the panels.
10. **Power On and Test:** Connect the power adapter and power on the laptop. Verify that the system boots correctly and recognizes the new CPU in the BIOS/UEFI settings.

3. Operating Principles

The Intel Pentium Dual-Core Mobile T4300 functions as the central processing unit (CPU) of your mobile computer. It executes instructions, performs calculations, and manages the flow of information within the system. Its dual-core design allows it to process two instruction streams simultaneously, significantly improving performance in multi-threaded applications and when running multiple programs concurrently.

Key operating characteristics include its clock speed (2.1 GHz), which dictates how many cycles per second the processor can perform, and its Front Side Bus (FSB) speed (800 MHz), which determines the speed of communication with the system memory and chipset. The integrated L2 cache (1 MB) provides fast access to frequently used data, reducing latency and improving overall responsiveness.

Enhanced SpeedStep Technology dynamically adjusts the processor's voltage and frequency based on workload, optimizing power consumption and reducing heat generation, which is crucial for mobile devices to extend battery life and maintain stable operation.

4. Maintenance

While the CPU itself requires no direct user maintenance, its optimal performance and longevity depend on maintaining proper thermal conditions within your laptop. Overheating can lead to system instability, reduced performance, and permanent damage to components.

Recommended Maintenance Practices:

- **Keep Vents Clear:** Ensure that the laptop's air intake and exhaust vents are not obstructed. Avoid using the laptop on soft surfaces like beds or couches that can block airflow.
- **Regular Dust Cleaning:** Periodically clean the laptop's cooling system (fans and heatsinks) using compressed air. This helps remove accumulated dust that can impede airflow and heat dissipation. This may require opening the laptop.
- **Thermal Paste Renewal:** Over time, thermal paste can dry out and become less effective. If you notice persistent overheating issues, consider having a qualified technician reapply fresh thermal paste to the CPU. This is typically recommended every few years or if the CPU cooler is removed.
- **Monitor Temperatures:** Use software utilities to monitor CPU temperatures, especially during demanding tasks. If temperatures consistently exceed safe operating limits (e.g., above 90°C under load), investigate the cause.

5. Troubleshooting

If you encounter issues after installing or while using your Intel Pentium Dual-Core Mobile T4300 processor, consider the following troubleshooting steps:

Common Issues and Solutions:

- **System Does Not Boot / No Display:**
  - **CPU Seating:** Ensure the CPU is correctly seated in its socket and the locking lever is fully engaged.
  - **Thermal Paste/Cooler:** Verify that the CPU cooler is properly installed and making good contact with the CPU. Insufficient thermal paste or poor cooler contact can cause immediate shutdown or prevent boot.
  - **Compatibility:** Confirm that your motherboard's chipset and BIOS version support the T4300 processor. Check the laptop manufacturer's website for CPU compatibility lists.
  - **RAM/Other Components:** Ensure RAM modules are properly seated. Try booting with one RAM stick if multiple are installed.
- **Overheating / System Shutdowns:**
  - **Thermal Paste:** Re-check thermal paste application. Ensure it's evenly spread and sufficient.
  - **Cooler Installation:** Verify the CPU cooler is securely mounted and its fan is spinning.
  - **Dust Buildup:** Clean dust from the heatsink fins and fan blades.

- **Ventilation:** Ensure laptop vents are unobstructed.

- **Poor Performance / Sluggishness:**
  - **Drivers:** Ensure all system drivers, especially chipset drivers, are up to date.
  - **Power Settings:** Check operating system power management settings to ensure the CPU is not being throttled.
  - **Background Processes:** Close unnecessary background applications that consume CPU resources.
  - **Malware Scan:** Run a comprehensive malware scan.

If issues persist after attempting these steps, it is advisable to consult a professional computer technician or refer to your laptop's specific service manual.

6. Technical Specifications

Specification	Value
Processor Type	Intel Pentium Dual-Core Mobile
Model Number	T4300 (AW80577GG0451MA)
Frequency	2.1 GHz
Bus Speed	800 MHz FSB
Socket Type	Socket P (478-pin Micro-FCPGA)
Number of Cores	2
L2 Cache Size	1 MB
Manufacturing Technology	45 nm (0.045 micron)
Core Stepping	R0
Thermal Design Power (TDP)	35 W
Case Temperature (T_{CASE})	105°C
Features	EM64T, Enhanced SpeedStep, Execute Disable Bit
Package Dimensions	8 x 5 x 2 inches (shipping package)

7. Warranty & Support

This Intel Pentium Dual-Core Mobile T4300 processor is sold as a refurbished working CPU. Please note the following important information regarding its condition and support:

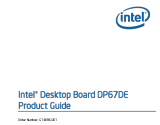
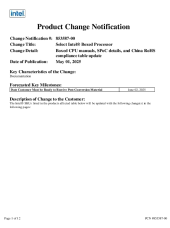
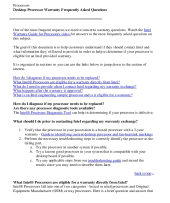
Legal Disclaimer:

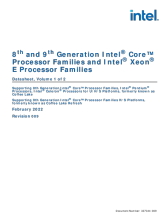
All products are sold in absolute good faith and condition exactly as described. By purchasing, the consumer, client, purchaser, including all associates in "natural and artificial persons/corporations/LLCs/trust companies", etc., and beneficiary hereinafter declares and undersigns that all merchandise purchased are acquired solely for beneficial and nondestructive purposes and uses or intentions. The beneficiary equally undersigns and waives all claims relating to health, to risks of handling, secondary and tertiary consequences from the handling of the item. The buyer waives any rights to lawsuits and claims of any order resulting from the use, handling, and third-party OEM disclosures and nondisclosures. Limitations of our lawsuits for deliberate item destruction all fall under One Million ($1,000,000) United States Dollars per product and not less than USD $300,000 per case/litigation. The buyer waives/disclaims/dis-owns any rights to non-information.

Technical Support:

For further technical assistance or inquiries regarding Intel products, please refer to the official Intel support website or contact their customer service. As this is a refurbished component, direct manufacturer warranty support may vary. Please consult the seller for specific return or exchange policies.
You can visit the official Intel Store for general product information:Intel Official Store on Amazon

Related Documents - AW80577GG0451MA

	Intel® Desktop Board DP67DE Product Guide | Features, Installation, and Specifications Comprehensive product guide for the Intel® Desktop Board DP67DE. Learn about its features, installation procedures for components like processors and memory, BIOS updates, and regulatory compliance information.
	Intel Product Change Notification 853587-00: Boxed Processor Updates Notification regarding updates to Intel Boxed Processor manuals, Single Point of Contact (SPoC) details, and China RoHS compliance tables, affecting various Intel Core and Xeon processors.
	Intel Desktop Processor Warranty FAQ: Eligibility, Exchange, and Troubleshooting Comprehensive FAQ guide on Intel desktop processor warranties. Covers eligibility for boxed vs. OEM processors, warranty exchange procedures, troubleshooting steps, and identification of engineering samples. Get answers to common warranty questions for Intel CPUs.

	[8th and 9th Generation Intel® Core™ and Xeon® E Processor Families Datasheet] Comprehensive datasheet detailing the architecture, features, technologies, power management, and specifications for Intel's 8th and 9th Generation Core™ and Xeon® E processor families. Covers performance, interfaces, and system integration aspects.
	[Intel® NUC NUC11TN Series Technical Product Specification] Detailed technical specifications for Intel® NUC Board, Kit, and Mini PC NUC11TN series, covering processors, memory, graphics, storage, and connectivity.
	[Edge Insights for Fleet: Developer Guide and Installation] Explore Intel's Edge Insights for Fleet with this developer guide, covering installation, configuration, and deployment for commercial vehicle fleet video analytics and edge computing.