



Intel[®] E7210 Chipset

Specification Update

Intel[®] E7210 Memory Controller Hub (MCH)

February 2004

Notice: The Intel[®] E7210 MCH may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are documented in this Specification Update.

Document Number: 300971-001

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The Intel® E7210 chipset MCH may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

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Revision History

Rev.	Draft/Changes	Date
-001	• Initial Release.	February 2004

Preface

This public document is an update to the specifications contained in the documents listed in the following Affected Documents/Related Documents table. It is a compilation of device and document errata and specification clarifications and changes, and is intended for hardware system manufacturers and for software developers of applications, operating system, and tools.

Information types defined in the Nomenclature section of this document are consolidated into this update document and are no longer published in other documents.

Affected Documents/Related Documents

Document Title	Document Number
Intel® E7210 Chipset Datasheet:	300798-001EN

Nomenclature

Errata are design defects or errors. Errata may cause the behavior of the Intel E7210 MCH to deviate from published specifications. Hardware and software designed to be used with any given stepping must assume that all errata documented for that stepping are present on all devices.

Specification Changes are modifications to the current published specifications. These changes will be incorporated in the next release of the specifications.

Specification Clarifications describe a specification in greater detail or further highlight a specification's impact to a complex design situation. These clarifications will be incorporated in the next release of the specifications.

Documentation Changes include typos, errors, or omissions from the current published specifications. These changes will be incorporated in the next release of the specifications.

Component Identification via Programming Interface

The E7210 MCH may be identified by the following register contents:

Stepping	Vendor ID ¹	Device ID ²	Revision Number ³
A2	8086h	2578h	02h

NOTES:

1. The Vendor ID corresponds to bits 15:0 of the Vendor ID Register located at offset 00–01h in the PCI function 0 configuration space.
2. The Device ID corresponds to bits 15:0 of the Device ID Register located at offset 02–03h in the PCI function 0 configuration space.
3. The Revision Number corresponds to bits 7:0 of the Revision ID Register located at offset 08h in the PCI function 0 configuration space.

Component Marking Information

The E7210 MCH may be identified by the following component markings:

Stepping	Q-Spec	S-Spec	Top Marking	Notes
A2	QE60	SL744W	RGE7210MC	

Summary Table of Changes

The following table indicates the Specification Changes, Errata, Specification Clarifications or Documentation Changes that apply to the listed E7210 MCH steppings. Intel may intend to fix some of the errata in a future stepping of the component and to account for the other outstanding issues through documentation or Specification Changes as noted. This table uses the following notations:

Codes Used in Summary Table

- X: Errata that applies to this stepping.
- Doc: Document change or update that will be implemented.
- PlanFix: This erratum may be fixed in a future stepping of the product.
- Fixed: This erratum has been previously fixed.
- NoFix: There are no plans to fix this erratum.
- (No mark) or (Blank Box): This erratum is fixed in listed stepping or specification change does not apply to listed stepping.

Shaded: This item is either new or modified from the previous version of the document

NO.	A2	PLANS	ERRATA
1	X	NoFix	FSB800 / DDR333 Running at 320 MHz Refresh Timing

NO.	SPECIFICATION CHANGES
	There are no specification changes in this Specification Update revision.

NO.	SPECIFICATION CLARIFICATIONS
	There are no specification clarifications in this Specification Update revision.

NO.	DOCUMENTATION CHANGES
	There are no documentation changes in this Specification Update revision.

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Errata

1. FSB800 / DDR333 Running at 320 MHz Refresh Timing Erratum

Problem: When a system is configured with an 800 MHz FSB process and DDR333 DIMM(s), the chipset's memory interface operates at 320 MHz. At this specific memory frequency, the chipset issues refresh cycles at a slower rate than the DDR333 JEDEC specification documents.

Chipset, with memory frequency at 320 MHz, issues refresh cycles every:
8.1 μ s with 256-Mb and 512-Mb memory technology
16.2 μ s with 64-Mb and 128-Mb memory technology

JEDEC spec for DDR333 devices is:
7.8 μ s with 256-Mb and 512-Mb memory technology
15.6 μ s with 64-Mb and 128-Mb memory technology

Implication: None

Workaround: None

Status: No silicon fix planned. Intel has contacted the major memory suppliers about this issue and has modified the DDR validation specification that Intel uses to test memory. Feedback from memory suppliers is that they can meet Intel's updated DDR validation specification.

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Specification Changes

There are no Specification Changes in this Specification Update revision.

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Specification Clarifications

There are no Specification Clarifications in this Specification Update revision.

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Documentation Changes

There are no documentation changes in this Specification Update revision.