



LXT974/975 Fast Ethernet 10/100 Quad Transceivers

Specification Update

March 2001

Notice: The LXT974 and LXT975 Four-Port Fast Ethernet PHY Transceivers 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.

Order Number: [249353-002](#)



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The LXT974 and LXT975 Four-Port Fast Ethernet PHY Transceivers 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.

Contact your local Intel sales office or your distributor to obtain the latest specifications and before placing your product order.

Copies of documents which have an ordering number and are referenced in this document, or other Intel literature may be obtained by calling 1-800-548-4725 or by visiting Intel's website at <http://www.intel.com>.

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Revision History

Date	Version	Page #	Description
March 20, 2001	002	10	Updated "Markings" table with Manufacturer's Revision Code information.
January 15, 2001	001	-	Converted to Intel format (no technical or material changes).
† Level One document version number. As of January 15, 2001, this document replaces the Level One document.			

Preface

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

Information types defined in Nomenclature are consolidated into the specification update and are no longer published in other documents.

This document may also contain information that was not previously published.

As a result of changes, Stepping 4 parts will be labeled LXT974B and LXT975B. Stepping 3 parts remain labeled LXT974A and LXT975A.

Affected Documents/Related Documents

Title	Order
LXT974/LXT975 Fast Ethernet 10/100 Quad Transceivers Datasheet	249274-001
LXT974A/LXT975A Design and Layout Guide Application Note	249012-001
LXD974A Demo Board for 10/100 Applications Developer Manual	249104-001
LXD975A Demo Board for 10/100 Applications Developer Manual	249105-001
Return Loss in Fast Ethernet Networks Application Note	249108-001
Fiber Optic Transceivers Connecting a PECL Interface Application Note	249015-001

Nomenclature

Errata are design defects or errors. These may cause the LXT974 and LXT975 Four-Port Fast Ethernet PHY Transceivers' behavior 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 any new release of the specification.

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 any new release of the specification.

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

Note: Errata remain in the specification update throughout the product's lifecycle, or until a particular stepping is no longer commercially available. Under these circumstances, errata removed from the specification update are archived and available upon request. Specification changes, specification clarifications and documentation changes are removed from the specification update when the appropriate changes are made to the appropriate product specification or user documentation (datasheets, manuals, etc.).



Summary Table of Changes

The following table indicates the errata, specification changes, specification clarifications, or documentation changes which apply to the LXT974 and LXT975 Four-Port Fast Ethernet PHY Transceivers product. Intel may fix some of the errata in a future stepping of the component, and account for the other outstanding issues through documentation or specification changes as noted. This table uses the following notations:

Codes Used in Summary Table

Stepping

- X: Errata exists in the stepping indicated. Specification Change or Specification Clarification applies to this stepping.
- (No mark) or (Blank box): This erratum is fixed in stepping indicated. Specification Change or Specification Clarification does not apply to this stepping.

Page

- (Page): Page location of item in this document.

Status

- Doc: Document change or update will be implemented.
- Fix: This erratum is intended to be fixed in a future step of the component.
- Fixed: This erratum has been previously fixed.
- NoFix: There are no plans to fix this erratum.
- Eval: Plans to fix this erratum are under evaluation.

Row



Change bar to left of table row indicates this erratum is either new or modified from the previous version of the document.

Errata

No.	Steppings			Page	Status	ERRATA
	#	#	#			
						None for this revision of this specification update.

Specification Changes

No.	Steppings			Page	Status	SPECIFICATION CHANGES
	#	#	#			
						None for this revision of this specification update.

Specification Clarifications

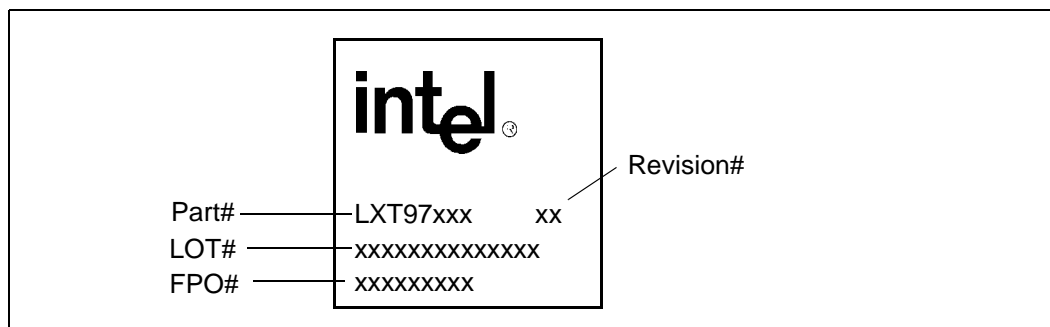
No.	Steppings			Page	Status	SPECIFICATION CLARIFICATIONS
	#	#	#			
						None for this revision of this specification update.

Documentation Changes

No.	Document Revision	Page	Status	DOCUMENTATION CHANGES
1	001	14	Doc	"LXT974/LXT975 Data Sheet Title Revision".

Identification Information

Markings

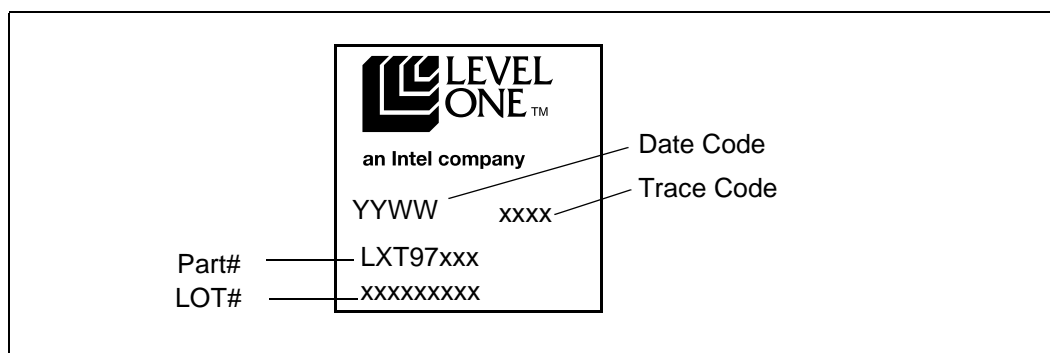


The silicon stepping in the LXT974/975 Data Sheet is referred to as “Manufacturer’s Revision Number.” The silicon stepping number may be read by software from Register 3, bits 3:0 in the LXT974/975 transceiver.

Note: Stepping 3 parts are labeled LXT974A and LXT975A. Stepping 4 parts are labeled LXT974B and LXT975B.

Stepping	Revision Number ¹	Trace Codes ²	Manufacturer’s Revision Number ³	Notes
3	A6	DxGx	0011	
4	A8	Dxlx	0100	

1. Revision numbers listed on the same line are the same product stepping, but are produced at different fabrication facilities.
 2. x indicates an insignificant variable.
 3. This value is from register bits 3.3:0. Please see the LXT974/LXT975 data sheet for more information.



Errata

There are no errata.

Specification Changes

There are no specification changes.

Specification Clarifications

There are no specification clarifications.

Documentation Changes

1. LXT974/LXT975 Data Sheet Title Revision

Issue: Because the Data Sheet for the LXT974 and LXT975 devices applies to all stepings of LXT974 and LXT975 including LXT974A, LXT975A, LXT974B, and LXT975B, it is incorrectly entitled: *LXT974A/LXT975A Fast Ethernet 10/100 Quad Transceivers Data Sheet*. It should be entitled: LXT974/LXT975 Fast Ethernet 10/100 Quad Transceivers Data Sheet.

Affected Docs: LXT974/LXT975 Fast Ethernet 10/100 Quad Transceivers Datasheet (public order number 249274-001)

Addenda

1. Tolerance to Cable Discharge Events (CDE)

Description: LXT974 and LXT975 transceivers were modified to provide a greater level of protection against Cable Discharge Events (CDE). The identified change should allow greater design flexibility; however, customers are advised that reliance on such out-of-margin performance is at their own risk.

Implication: A phenomenon known as a Cable Discharge Event (CDE) could occur when a charged, twisted-pair cable connects to an Ethernet port of lower potential, typically through an RJ-45 connector. When the charged cable is connected, the ensuing high-energy discharge may damage the RJ-45 connector, the transformer circuit, or the Ethernet transceiver. In catastrophic cases, the result can be electrical overstress (EOS) to the LXT974/975 transceiver caused by latch up.

A redesign of the twisted-pair port pads on Stepping 4 of LXT974/975 (LXT974B/975B) has yielded a 2X improvement in CDE tolerance over previous steppings of LXT974/975 (LXT974A/975A). The modification to LXT974/975 also resulted in a less than 2 dB return loss degradation. The LXT974/975 return loss is still within the limits of the IEEE Standard 802.3.

Workaround: There are several methods by which the effects of CDE can be reduced or prevented. In the field, CDE can be prevented by properly handling equipment and by properly discharging cables prior to connecting them to networking equipment. At the board level, designers should focus on diverting energy away from IC devices by using Transient Voltage Suppression (TVS) diodes, ESD capacitors, and efficient grounding.

Status: Implemented in Stepping 4.

Note: Stepping 4 parts are labeled LXT974B and LXT975B.

