
Technical Report: Information Technology - Method to Disable Data Transfer after Error Detection for ATA Devices

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Disable Data Transfer after Error Detection (DDT)

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Abstract

The Disable Data Transfer after Error Detection technical report describes a method for an ATA host to specify to an ATA device that command completion is to occur for a data transfer command after an error occurs and that no more data is to be transferred for the command.

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Foreword

This technical report describes the Method to Disable Data Transfer after Error Detection for ATA Devices and Allocation of Identify Device Words.

This technical report was developed by T13 during 2005. The approval process started in 2005. This document is not an American National Standard and the material contained herein is not normative in nature. Comments on the content of this document should be sent to the INCITS Secretariat, Information Technology Industry Council, 1250 Eye Street, NW (Suite 200), Washington, DC 20005.

(This technical report was processed and approved for submittal to ANSI by Accredited Standards Committee on Information Processing Systems, INCITS. Committee approval of the technical report does not necessarily imply that all committee members voted for approval. At the time it approved this technical report, the INCITS Committee had the following members:)

Dan Colegrove, Chairman
Jim Hatfield, Vice-Chairman
Mark Overby, Secretary

Organization Represented Name of Representative

Technical Committee T13 on ATA Interfaces, that reviewed this standard, had the following members:

Technical Committee T13 on ATA Interfaces, that developed this standard, had the following additional participants:

Introduction

The Disable Data Transfer after Error Detection technical report is divided into the following clauses:

Clause 1 describes the scope.

Clause 2 enumerates the normative references that apply to this technical report..

Clause 3 describes the definitions, abbreviations, and conventions used in this technical report..

Clause 4 describes the Disable Data Transfer after Error Detection feature set.

**InterNational Committee for Information Technology Standards
(INCITS)
Technical Report —**

**Method to Disable Data Transfer after Error Detection for
ATA Devices**

1 Scope

The Disable Data Transfer after Error Detection feature set provides a method for an ATA host to specify to an ATA device that the device is to signal command completion for a data transfer command after an error occurs and that no more data is to be transferred for the command.

This method provides support for hosts and other device types that do not support data transfer after an error occurs.

This feature set is optional for devices not implementing the PACKET Command feature set and prohibited for devices implementing the PACKET Command feature set.

2 Normative references

The following standards contain provisions that, through reference in the text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below.

Copies of the following documents can be obtained from ANSI: Approved ANSI standards, approved and draft international and regional standards (ISO, IEC, CEN/CENELEC, ITUT), and approved and draft foreign standards (including BSI, JIS, and DIN). For further information, contact ANSI Customer Service Department at 212-642-4900 (phone), 212-302-1286 (fax), or via the World Wide Web at <http://www.ansi.org>.

Additional availability contact information is provided below as needed.

AT Attachment with Packet Interface (ATA/ATAPI-7), [ANSI INCITS.397-2005]

3 Definitions, abbreviations, and conventions

3.1 Definitions and abbreviations

Any terms or abbreviations used in this technical report that do not have their Standard English meaning are defined in the ATA/ATAPI-7 standard.

3.2 Conventions

The conventions used in this technical report are defined in the ATA/ATAPI-7 standard.

4 The Disable Data Transfer after Error Detection feature set

4.1 The Disable Data Transfer after Error Detection feature set overview

The Disable Data Transfer after Error Detection feature set is enabled using a SET FEATURES subcommand (see 4.2). Support for the feature set and whether the feature set is enabled or disabled is reported in IDENTIFY DEVICE data (see 4.3).

When the feature set is supported and enabled and an error occurs during a data transfer command, the device sets the DRQ bit to zero and the ERR bit to one in the Status register and no more data is transferred for that command.

4.2 SET FEATURES subcommand codes

Table 1 defines the subcommand codes to be used for the Disable Data Transfer after Error Detection feature set.

Table 1 - SET FEATURES register definitions

Value (See note)	
5Fh	Enable Feature set "Disable Data Transfer After Error Detection".
DFh	Disable Feature set "Disable Data Transfer After Error Detection".

Subcommand codes 5Fh and DFh enable and disable the clearing of the DRQ Status Register bit to zero when the ERR bit is set to one for a data transfer command.

4.2.1 Parallel Device Behavior

Parallel ATA devices disable the feature at power-on or after a hardware reset. These devices preserve the feature setting over a software reset.

Enabling the feature set shall cause IDENTIFY DEVICE word 120, bit 0 to be set to one.

Disabling the feature set shall cause IDENTIFY DEVICE word 120, bit 0 to be cleared to zero.

4.2.2 Serial Device Behavior

If a Serial ATA device supports this feature, then the feature is always enabled and subcommand codes 5Fh and DFh are accepted by the device without changing its behavior.

IDENTIFY DEVICE word 120, bit 0 is not changeable on a Serial SATA device.

4.3 IDENTIFY DEVICE data

4.3.1 IDENTIFY DEVICE data overview

Table 2 defines the IDENTIFY DEVICE data to be used for the Disable Data Transfer after Error Detection feature set.

Table 2 - IDENTIFY DEVICE information

Word	O/M	F/V	Description
86		F	15 Words 119-120 are valid
119		F	15-1 See ATA/ATAPI standards
		F	0 1 = Feature set "Disable Data Transfer After Error Detection" is supported
120		F	15-1 See ATA/ATAPI standards
		V	0 1= Feature set "Disable Data Transfer After Error Detection" is enabled 0= Feature set "Disable Data Transfer After Error Detection" is disabled

4.3.2 Words (86): Features/command sets enabled

If bit 15 is set to one, then words 119:120 are valid.

4.3.3 Word (119) Features/command sets supported

If bit 0 is set to one, the optional Disable Data Transfer after Error Detection feature is supported.

4.3.4 Word (120) Features/command sets supported

If bit 0 is set to one, the optional Disable Data Transfer after Error Detection feature is enabled.