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ISO/IEC 17760-105

Information technology — AT Attachment —

Part 105: ATA Command Set - 5 (ACS-5)

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This document was prepared by INCITS (as INCITS 558-2021, ATA Command Set – 5) and drafted in accordance with its editorial rules. It was assigned to Joint Technical Committee ISO/IEC JTC 1, *Information technology*, and adopted under the "fast-track procedure".

A list of all parts in the ISO/IEC 17760 series can be found on the ISO and IEC websites.

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Foreword (This foreword is not part of American National Standard INCITS 558-2021.)

This standard is designed to maintain a high degree of compatibility with the ACS-4 standard.

Requests for interpretation, suggestions for improvement and addenda, or defect reports are welcome. They should be sent to the INCITS Secretariat, ITI, 700 K Street NW, Suite 600, Washington, DC 20001.

This standard was processed and approved for submittal to ANSI by the InterNational Committee for Information Technology Standards (INCITS). Committee approval of the standard does not necessarily imply that all committee members voted for its approval. At the time of it approved this standard, INCITS had the following members:

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Introduction

This standard encompasses the following:

Clause 1 describes the scope.
Clause 2 provides normative references for the entire standard.
Clause 3 provides definitions, abbreviations, and conventions used within the entire standard.
Clause 4 describes the feature set definitions.
Clause 5 describes the ATA protocols used by the commands in this standard.
Clause 6 describes Normal and Error Output fields.
Clause 7 describes commands.
Clause 8 describes the SCT Command Transport.
Clause 9 describes logs.
Clause 10 describes command normal and error outputs.

Annex A provides command summaries.
Annex B provides a tutorial on how to use SCT.
Annex C provides implementation guidelines for 1 024/4 096 byte sectors.
Annex D provides a tutorial on how to use the DATA SET MANAGEMENT command with Trim.
Annex E provides a tutorial on how to use repurposing depopulation.
Annex F, Bibliography, is the bibliography for this standard.

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AMERICAN NATIONAL STANDARD **INCITS 558-2021**

American National Standard
for Information Technology –

ATA Command Set - 5 (ACS-5)

1 Scope

The set of AT Attachment standards consists of this standard and the ATA implementation standards described in AT Attachment - 8 ATA/ATAPI Architecture Model (ATA8-AAM). This standard specifies the command set that host systems use to access storage devices. This standard provides a common command set for systems manufacturers, system integrators, software suppliers, and suppliers of intelligent storage devices. Figure 1 shows the relationship of this standard to other ATA standards as well as related device and host standards and specifications (e.g., SCSI standards and SATA-IO specifications).

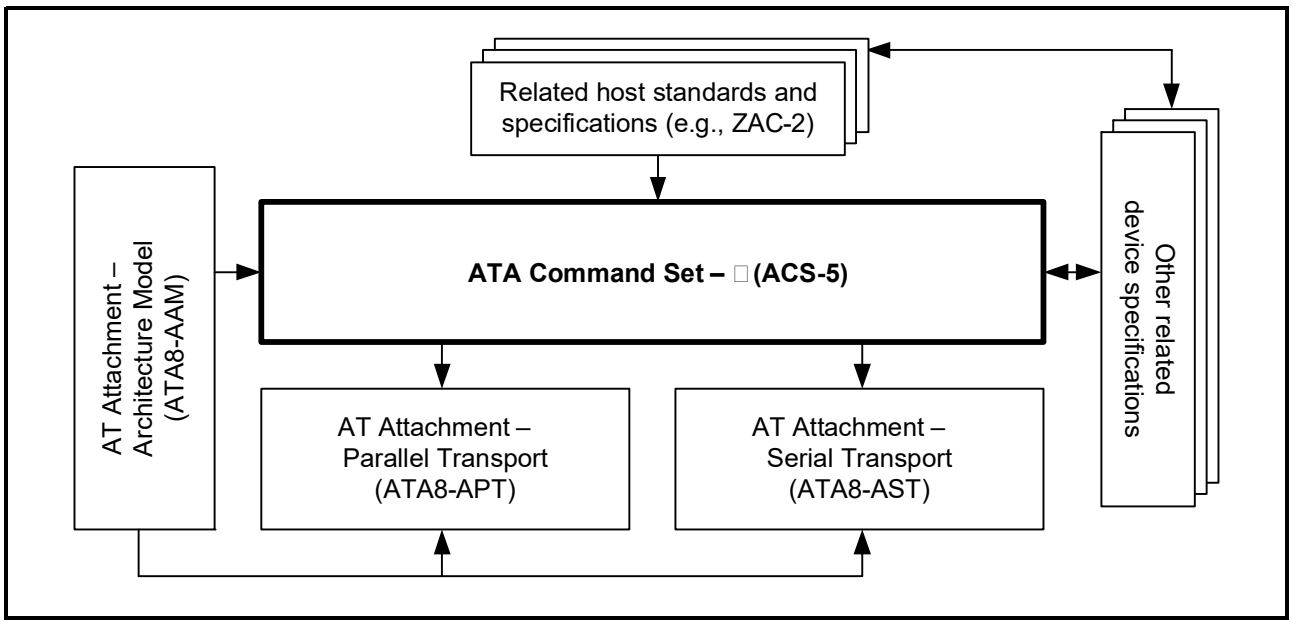

Figure 1 — ATA document relationships

This standard maintains compatibility with the ACS-4 standard, INCITS 529-2018, while providing additional functions.

INCITS 558-2021

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

INCITS 4-1986 (R2012), *Information Systems – Coded Character Sets – 7-Bit American National Standard Code for Information Interchange (7-Bit ASCII)*

ISO 7779:1999, *Acoustics – Measurement of airborne noise emitted by information technology and telecommunications equipment*

INCITS 451-2008, *AT Attachment-8 – ATA/ATAPI Architecture Model (ATA8-AAM)*

INCITS 493-2012, *AT Attachment-8 – Serial Transport (ATA8-AST)*

INCITS 502-2019, SCSI Primary Commands – 5 (SPC-5)

T10/INCITS BSR 506, *SCSI Block Commands – 4 (SBC-4)* (under consideration)

INCITS 524-2016, *AT Attachment-8 – Parallel Transport (ATA8-APT)*

T13/INCITS BSR 549, *Zoned-device ATA Command Set - 2 (ZAC-2)* (under consideration)

Serial ATA revision 3.5 (SATA 3.5) [1]

RFC 3280, *Internet X.509 Public Key Infrastructure: Certificate and Certificate Revocation List (CRL) Profile, IETF, 2002* [2]

RFC 3281, *An Internet Attribute Certificate: Profile for Authorization, IETF, 2002* [2]

FIPS PUB 140-2, *Security Requirements For Cryptographic Modules, May 25, 2001* [3]

FIPS PUB 140-3, *Security Requirements for Cryptographic Modules, March 23, 2019* [3]

SFF-8447 LBA Count for Disk Drives [4]

SFF-8609 Specification for Management Interface for Drive Conditions, Rev 1.0, July 07, 2017 [4]

1. For more information on Serial ATA international Organization, see http://www.sata-io.org/.
2. For more information on IETF publications, see http://www.ietf.org/.
3. For more information on National Institute of Standards and Technology publications, see http://www.nist.gov/.
4. For more information on SFF specifications contact the SFF committee at http://www.snia.org/sff/specifications.