

Australian Standard<sup>®</sup>

---

**INFORMATION PROCESSING  
IMPLEMENTATION OF THE  
7-BIT CODED CHARACTER SET  
AND ITS EXTENSIONS**

---

The following scientific, industrial and governmental organizations and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Banks Automation Committee  
Australian Bureau of Statistics  
Australian Computer Users Association  
Australian Public Service Board  
CSIRO, Division of Computing Research  
Department of Defence  
Life Insurance Federation of Australia  
Manufacturers of data processing equipment  
National Library of Australia  
Office Equipment Industry Association of Australia  
Public Service Board, New South Wales  
Qantas Airways Limited  
Telecom Australia  
Universities and Colleges

---

This standard, prepared by Committee MS/20, Computers and Information Processing, was approved on behalf of the Council of the Standards Association of Australia on 5 May 1980, and was published on 1 August 1980.

---

*Review of Australian Standards.* To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

Australian Standard<sup>®</sup>

---

**INFORMATION PROCESSING  
IMPLEMENTATION OF THE  
7-BIT CODED CHARACTER SET  
AND ITS EXTENSIONS**

---

Parts 1 to 3 first published (as AS 1061 - 1063) . . . . .	1971
Parts 1 to 4 published as AS 2356, Parts 1 to 4 . . . . .	1980

PUBLISHED BY STANDARDS AUSTRALIA  
(STANDARDS ASSOCIATION OF AUSTRALIA)  
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 1975 4

## PREFACE

This standard was prepared by the Association's Committee on Computers and Information Processing. It is identical with and has been reproduced from International standards ISO 962, 1113, 1679 and 3275, drawn up by ISO/TC 97, Computers and Information Processing. Parts 1, 2 and 3 constitute revisions of AS 1061, 1062 and 1063 respectively, and accordingly supersede those standards. The revisions take account of corresponding revisions of the International standards. Part 4 is a new standard and is identical with ISO 3275. AS 1060, which was grouped with AS 1061-1063, is concurrently withdrawn.

The purpose of this standard is to specify methods of implementation of the Australian standard 7-bit coded character set defined in AS 1776, on various recording media such as punched tape, magnetic tape, punched cards and magnetic tape cassettes.

Initially, four parts are included. It is intended that further parts will be issued in the future covering other recording media.

Numeric values in the SI system in this standard may have been rounded during conversion from imperial measurements, and are therefore consistent with, but not exactly equal to, the values in the original design which were given using the imperial system. In use, the two should be neither intermixed nor reconverted. However, following the practice in the International standard, imperial values have been given in parentheses.

For the purpose of this Australian standard, the text of the ISO standards used herein should be modified as follows:

- (a) *Terminology*: The words 'Australian Standard' should replace the words 'International Standard' wherever they appear.
- (b) *Decimal comma*: The decimal point should replace the decimal comma wherever it appears.
- (c) *Cross-references*: The references to International Standards should be replaced by references to Australian standards as follows:

<i>Reference to International Standard</i>	<i>Appropriate Australian Standard</i>
ISO 646, 7-bit coded character set for information processing interchange	AS 1776, Information processing—7-bit coded character set for information interchange
ISO 1001, Magnetic tape labelling and file structure for information interchange	AS 1068, Magnetic tape labelling and file structure for information interchange
ISO 1154, Information processing—Punched paper tape—Dimensions and location of punch holes and code holes	AS 1069, Dimensions for punched paper tape for data interchange
ISO 1681, Information processing—Unpunched paper cards—Specification	AS 1244, Unpunched paper cards for information interchange
ISO 1682, Information processing—80 columns punched paper cards—Dimensions and location of rectangular punched holes	AS 1245, Dimensions and location of rectangular punched holes in 80 columns punched paper cards
ISO 1729, Information processing—Unpunched paper tape—Specification	AS 1341, Information processing—Unpunched paper tape
ISO 1862, Information processing—9-track 12.7 mm (0.5 in) wide magnetic tape for information interchange recorded at 8 rpm (200 rpi)	AS 1008, 9-track 8 rpm (200 rpi) magnetic tape for information interchange
ISO 1863, Information processing—9-track 12.7 mm (0.5 in) wide magnetic tape for information interchange recorded at 32 rpm (800 rpi)	AS 1009, 9-track 32 rpm (800 rpi) magnetic tape for information interchange
ISO 1922, Code extension techniques for use with ISO 7-bit coded character set	AS 1953, Code extension techniques for use with standard 7-bit coded character set
ISO 3407, Information processing—3.81 mm (0.50 in) magnetic tape cassette for information interchange, 32 bpm (800 bpi), phase encoded	AS . . . *
ISO 3788, Information processing—9-track 12.7 mm (0.5 in) wide magnetic tape for information interchange recorded at 63 rpm (1 600 rpi) phase encoded.	AS 2241, 9-track, 12.7 mm (0.5 in) wide magnetic tape for information interchange recorded at 63 rpm (1 600 rpi) phase encoded

\* An Australian standard is in the course of preparation.

## CONTENTS

	<i>Page</i>
AS 2356, PART 1—IMPLEMENTATION OF THE 7-BIT CODED CHARACTER SET AND ITS 7-BIT AND 8-BIT EXTENSIONS ON 9-TRACK 12.7 mm (0.5in) MAGNETIC TAPE (CORRESPONDS TO ISO 962—1974) . . . . .	5
AS 2356, PART 2—REPRESENTATION OF THE 7-BIT CODED CHARACTER SET ON PUNCHED TAPE (CORRESPONDS TO ISO 1679—1973) . . . . .	8
AS 2356, PART 3—REPRESENTATION OF THE 7-BIT CODED CHARACTER SET ON 12-ROW PUNCHED CARDS (CORRESPONDS TO ISO 1679—1973) . . . . .	10
AS 2356, PART 4—IMPLEMENTATION OF THE 7-BIT CODED CHARACTER SET AND ITS 7-BIT AND 8-BIT EXTENSIONS ON 3.81 mm MAGNETIC TAPE CASSETTE FOR DATA INTERCHANGE (CORRESPONDS TO ISO 3275—1974) . . . . .	14

TABLE 4 IN THE HARD COPY IS BLANK)

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

# Information processing—Implementation of the 7-bit coded character set and its 7-bit and 8-bit extensions on 9-track 12,7 mm (0.5 in) magnetic tape

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the implementation of the 7-bit coded character set and its 7-bit and 8-bit extensions on 9-track 12,7 mm (0.5 in) magnetic tape.

## 2 REFERENCES

**2.1** This International Standard refers to the 7-bit coded character set which is the subject of ISO 646, *7-bit coded character set for information processing interchange*, and ISO 2022, *Code extension techniques for use with the ISO 7-bit coded character set*.

**2.2** The magnetic tape on which this character set is implemented is specified in the following ISO publications:

ISO/R 1862, *9-track 8 r/mm (200 rpi) magnetic tape for information interchange*;

ISO/R 1863, *9-track 32 r/mm (800 rpi) magnetic tape for information interchange*;

ISO 3788, *9-track 63 r/mm (1 600 rpi) phase-encoded magnetic tape for information interchange*.

**2.3** The magnetic labelling is the subject of ISO 1001, *Magnetic tape labelling and file structure for information interchange*.

## 3 DEFINITIONS

(The figure on page 7 illustrates the following definitions.)

**3.1 magnet tape:** A tape which will accept and

retain magnetic signals intended for input, output and storage purposes on computers and associated equipment.<sup>1)</sup>

**3.2 track:** A longitudinal area on the tape along which a series of magnetic signals may be recorded.<sup>1)</sup>

**3.3 reference edge:** The edge farthest from an observer, or nearest the top of the tape, when a tape is lying flat with the oxide side uppermost and the direction of movement for recording from left to right.<sup>1)</sup> (See figure.)

**3.4 row:** A transverse area on the tape along which magnetic signals of tracks are recorded.

**3.5 block:** A series of rows, limited by suitable marks, to be recorded and read as a group.

**3.6 gap:** A space left unused between blocks.

**3.7 8 position environment:** A set of eight positions, each available to record one bit.

## 4 SPECIFICATIONS

### 4.1 Track identification

There shall be 9 tracks on the tape and they shall be numbered consecutively from 1 to 9, with track 1 adjacent to the reference edge (see figure).

### 4.2 Data content

Each row contains one character only, with its parity check bit.

1) Definitions in accordance with ISO/R 1864, *Unrecorded magnetic tape for information interchange — 8 and 32 r/mm (200 and 800 rpi), NRZI, and 63 r/mm (1 600 rpi), phase-encoded*.