Australian Standard®

INFORMATION INTERCHANGE ON 3.81 mm (0.150 in) MAGNETIC TAPE CASSETTE AT 4 cpmm (100 cpi), PHASE ENCODED AT 63 ftpmm (1 600 ftpi)

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

Australian Banks Payment Systems 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 10 October 1980, and was published on 31 December 1980.

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PREFACE

This standard was prepared under the authority of the Association's Committee on Computers and Information Processing. It is identical with and has been reproduced from International Standard ISO 3407, drawn up by ISO/TC 97, Computers and Information Processing.

This standard specifies the essential characteristics of 3.81 magnetic tape cassettes to enable such cassettes to be interchanged between systems using the 7-bit coded character set. The recording system specified uses the 63 flux transitions per mm phase encoded method.

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 ISO 3407 given 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:

Reference to International Standard	*Appropriate Australian Standard*
ISO 646, 7-bit coded character set for information processing interchange	AS 1776, Information processing—7-bit coded character set for information interchange
ISO 2022, Code extension techniques for use with the ISO 7-bit coded character set	AS 1953, Code extension techniques for use with the standard 7-bit coded character set

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

Information interchange on 3.81 mm (0.150 in) magnetic tape cassette at 4 cpmm (100 cpi), phase encoded at 63 ftpmm (1 600 ftpi)

NOTE — Numeric values in the SI and/or Imperial measurement system in this International Standard may have been rounded, and are therefore consistent with, but not exactly equal to each other. Either system may be used, but the two should be neither intermixed nor converted. The original design was made using the metric measurement system.

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the characteristics of a 3,81 mm (0.150 in) magnetic tape cassette to provide data interchange and physical interchangeability between information processing systems utilizing the ISO 7-bit coded character set (ISO 646) and, where required, its extensions (ISO 2022). The cassette is of the twin hub coplanar type, loaded with a 3,81 mm (0.150 in) wide magnetic tape for digital recording using the 31,5 bits per mm (800 bpi) phase encoding method. The direction of magnetization is in the longitudinal direction of the tape.

NOTE — Throughout the remainder of this International Standard for the sake of simplicity the recording density is stated as 32 bpmm, (800 bpi) nominal.

This International Standard applies to cassettes and data used for interchange. Where it applies for testing only, this is specifically stated.

2 DEFINITIONS

For the purpose of this International Standard the following definitions apply:

2.1 magnetic tape: Tape which will accept and retain the magnetic signals intended for input, output and storage purposes on computers and associated equipment.

2.2 reference tape cassette: A tape cassette which has been selected for given properties for use in calibration.

2.3 secondary reference tape cassette: A tape cassette intended for routine calibrating purposes, whose performance is known and stated in relation to that of the reference tape cassette.

2.4 reference field: For the specified packing density (see 4.2), the minimum field applied to the signal amplitude reference tape cassette which causes an output signal equal to 95 % of the maximum output.

2.5 test recording current: A recording current between 145 % and 155 % of the current required to produce the reference field.

2.6 signal amplitude reference tape cassette: A reference tape cassette selected as a standard for signal amplitude.

NOTE — A master standard (computer amplitude reference), based on reference tape cassettes and heads, has been established as the result of work by national standardization organizations and national laboratories, coordinated by the U.S. National Bureau of Standards (NBS).

Secondary signal amplitude reference tape cassettes, certified by the National Bureau of Standards, Gaithersburg, Maryland, U.S.A., and the Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany, are available.

NBS certified cassettes are available directly from NBS under the general number SRM 1600. PTB certified cassettes are available through the European Computer Manufacturers Association (ECMA), 114, rue du Rhône, CH-1204 Geneva, Switzerland.

The calibration devices are correlated between NBS and PTB.

2.7 standard reference amplitude: The average peak-to-peak signal amplitude derived from the signal amplitude reference tape cassette, at the density of 63 ftpmm (1 600 ftpi) using the test recording current (see 2.5). The signal amplitude shall be averaged over 4 000 flux transitions.

2.8 average signal amplitude: The average peak-to-peak value of the signal output measured over at least 4 000 flux transitions.

2.9 in contact: An operating condition in which the magnetic surface of a tape is in contact with a magnetic head.

2.10 track: A longitudinal area on the tape along which a series of magnetic signals may be recorded.

2.11 bit density: The number of bit flux transitions per unit length of track.

2.12 position of flux transitions: That point which exhibits the maximum free-space flux density normal to the tape surface.

2.13 leader: Non-magnetic transparent tapes joined to each end of the magnetic tape.