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# Australian Standard 2170—1978

# MAGNETIC TAPE FOR INSTRUMENTATION APPLICATIONS—STANDARDIZATION OF ANALOGUE MODES OF RECORDING

STANDARDS ASSOCIATION OF AUSTRALIA
*Incorporated by Royal Charter*



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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL organizations and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Bankers Association

Australian Bureau of Statistics

Australian Computer Users Association

Australian Public Service Board

CSIRO, Division of Computing Research

Department of Defence

Life Offices Association for Australasia

Manufacturers of data processing equipment

National Library of Australia

Office Equipment Industry Association of Australia

Qantas Airways Limited

Telecom Australia

Universities and Colleges

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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 13 March 1978, and was published on 1 July 1978.

To keep abreast of progress in industry, Australian standards are regularly reviewed. Suggestions for improvements to published standards, addressed to the head office of the Association, are welcomed.

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AUSTRALIAN STANDARD

# MAGNETIC TAPE FOR INSTRUMENTATION APPLICATIONS— STANDARDIZATION OF ANALOGUE MODES OF RECORDING

## AS 2170—1978

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# PREFACE

This standard was prepared by the Association's Committee on Computers and Information Processing.

The standard specifies analogue modes of recording on magnetic tape for instrumentation applications. Direct, single-carrier FM and multiple-carrier FM modes are covered. Record and reproduce set-up procedures, together with requirements for tape speed control and flutter compensation, are specified. An appendix describes a method of test to establish that the record amplifier compensates for record head losses at high frequencies.

This standard is technically identical with ISO 3615, Magnetic Tape for Instrumentation Applications—Standardization of Analogue Modes of Recording.

STANDARDS ASSOCIATION OF AUSTRALIA

# Australian Standard Specification

# for

# MAGNETIC TAPE FOR INSTRUMENTATION APPLICATIONS—STANDARDIZATION OF ANALOGUE MODES OF RECORDING

**1 SCOPE.** This standard provides for the standardization of analogue modes of recording on magnetic tape for instrumentation applications (Direct, Single-carrier FM, and Multiple-carrier FM Modes). It includes standards for record and reproduce set-up procedures, tape speed control and flutter compensation.

NOTE: This standard covers most of the requirements for commonly used recording modes, but may not guarantee that all interchange requirements for telemetry systems will be met. A more comprehensive standard covering additional telemetry interchange requirements is under development.

## 2 DIRECT RECORDING.

### 2.1 Bandwidths.

**2.1.1** *Number of bandwidths.* For the purposes of this standard, four direct-recording bandwidths are designated, as follows:

(a) *Low band.* Signals having a minimum recorded wavelength on the tape of 15.2 $\mu$m.

(b) *Intermediate band.* Signals having a minimum recorded wavelength on the tape of 6.1 $\mu$m.

(c) *1.5 Wide band.* Signals having a minimum recorded wavelength on the tape of 2 $\mu$m.

(d) *2.0 Wide band.* Signals having a minimum recorded wavelength of 1.5 $\mu$m.

Interchange of recorded tapes between wide band machines and low or intermediate band machines is not recommended.

**2.1.2** *Direct-record parameters.* The frequency or pass-band of direct-recorded data as a function of tape speed is given in Table 1.

In measuring this response, signals throughout the specified pass-band are recorded at Normal Record Level (see Clause 2.3.1) and the ± 3 dB pass-band response is referenced to the reproduced output at the Record Level Set Frequency.

### 2.2 Bias.

**2.2.1** *Frequency.* The high frequency bias signal for low and intermediate band records shall have a wavelength on the tape less than 1.5 $\mu$m.

For wide band recorders the bias frequency shall be greater than 3.4 times the highest direct record frequency for which the system is designed.