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**Information processing — Data interchange on 90 mm  
(3.5 in) flexible disk cartridges using modified  
frequency modulation recording at 7 958 ftprad on  
80 tracks on each side —**

**Part 2 :  
Track format**

*Traitement de l'information — Échange de données sur cartouches à disquette de 90 mm  
(3,5 in) utilisant un enregistrement à modulation de fréquence modifiée (MFM) à 7 958 ftprad  
sur 80 pistes sur chaque face —*

*Partie 2 : Schéma de piste*

Reference number  
ISO 8860-2:1987 (E)

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8860-2 was prepared by Technical Committee ISO/TC 97, *Information processing systems*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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# Information processing — Data interchange on 90 mm (3.5 in) flexible disk cartridges using modified frequency modulation recording at 7 958 ftprad on 80 tracks on each side —

## Part 2 : Track format

### 0 Introduction

ISO 8860 specifies the characteristics of 90 mm (3.5 in) flexible disk cartridges recorded at 7 958 ftprad using Modified Frequency Modulation (MFM) recording on 80 tracks on each side.

ISO 8860-1 specifies the mechanical, physical and magnetic characteristics of the cartridge, so as to provide physical interchangeability between data processing systems.

ISO 8860-1 and ISO 8860-2, together with the labelling scheme specified in ISO 9293, provide for full data interchange between data processing systems.

### 1 Scope and field of application

This part of ISO 8860 specifies the track layout, the track format and the characteristics of recorded signals.

NOTE — Numeric values in the SI and/or Imperial measurement system in this part of ISO 8860 may have been rounded off and therefore are consistent with, but not exactly equal to, each other. Either system may be used, but the two should be neither intermixed nor re-converted. The original design was made using SI units.

### 2 Conformance

A 90 mm (3.5 in) flexible disk cartridge shall be in conformance with this part of ISO 8860 if it meets all mandatory requirements contained herein.

A prerequisite for conformance with this part of ISO 8860 is conformance with ISO 8860-1.

### 3 References

ISO 646, *Information processing — ISO 7-bit coded character set for information interchange*.

ISO 2022, *Information processing — ISO 7-bit and 8-bit coded character sets — Code extension techniques*.

ISO 4873, *Information processing — ISO 8-bit code for information interchange — Structure and rules for implementation*.

ISO 8860-1, *Information processing — Data interchange on 90 mm (3.5 in) flexible disk cartridges using modified frequency modulation recording at 7 958 ftprad on 80 tracks on each side — Part 1 : Dimensional, physical and magnetic characteristics*.

ISO 9293, *Information processing — Volume and file structure of flexible disk cartridges for information interchange*.

### 4 General requirements

#### 4.1 Mode of recording

The mode of recording shall be Modified Frequency Modulation (MFM) for which the conditions are

- a) a flux transition shall be written at the centre of each bit cell containing a ONE;
- b) a flux transition shall be written at each cell boundary between consecutive bit cells containing ZEROs.

Exceptions to this are defined in 4.12.

#### 4.2 Track location tolerance of the recorded flexible disk cartridge

The centrelines of the recorded tracks shall be within  $\pm 0,028$  mm ( $\pm 0,001$  1 in) of the nominal positions and over the range of operating environment specified in ISO 8860-1.

#### 4.3 Recording offset angle (see figure 1)

At the instant of writing or reading a magnetic transition, the transition shall have an angle of

$$\theta = \arcsin \left( \frac{d}{R_n} \right) \pm 18'$$

where  $R_n$  is the radius through that transition (see ISO 8860-1).