

Specification for

# Paper tape for data processing —

**Part 3: Representation of codes on  
paper tape**

## Co-operating organizations

The Data Processing Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

|                                                                                                        |                                                                      |
|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Aslib                                                                                                  | Engineering Equipment Users' Association*                            |
| British Computer Society*                                                                              | Government Communications Headquarters*                              |
| British Electrical and Allied Manufacturers' Association                                               | Institute of Chartered Accountants in England and Wales              |
| British Federation of Master Printers                                                                  | Institute of Cost and Works Accountants                              |
| British Paper and Board Makers' Association                                                            | Institute of Municipal Treasurers and Accountants (Incorporated)*    |
| British Telecommunications Research Limited                                                            | Institution of Electrical Engineers*                                 |
| Business Equipment Trade Association*                                                                  | Institution of Mechanical Engineers                                  |
| Civil Service Department                                                                               | London Transport Executive                                           |
| Committee of London Clearing Bankers                                                                   | Ministry of Aviation Supply                                          |
| Data-Processing Management Association*                                                                | National Coal Board*                                                 |
| Department of Trade and Industry — National Physical Laboratory                                        | National Computing Centre Limited*                                   |
| Department of Trade and Industry — Computer Advisory Service Technical Support Unit*                   | National Research Development Corporation                            |
| Electricity Council, the Central Electricity Generating Board and the Area Boards in England and Wales | Post Office*                                                         |
| Electronic Engineering Association*                                                                    | Society of British Aerospace Companies                               |
|                                                                                                        | Technical Section of the British Paper and Board Makers' Association |
|                                                                                                        | Telecommunication Engineering and Manufacturing Association          |

The Government departments and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

|                                                                    |                                                          |
|--------------------------------------------------------------------|----------------------------------------------------------|
| British Railways Board                                             | Radio and Electronic Component Manufacturers' Federation |
| Department of Trade and Industry — National Engineering Laboratory | Stock Exchange                                           |
| Newspaper Society                                                  |                                                          |

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## Foreword

This standard makes reference to the following British Standards and ISO Standards:

BS 3880, *Paper tape for data processing — Part 1: Unpunched paper tape — Part 2: Dimensions and location of punched holes in paper tape — Part 4: General requirements for data interchange on punched paper tape* (in course of preparation).

BS 4730, *The United Kingdom 7-bit data code (ISO-7-UK)*.

BS 4731, *Derivatives of the United Kingdom 7-bit data code — Part 1: Rules for the derivation of 4-bit coded character sets*.

BS 4953, *Code extension techniques for use with the United Kingdom 7-bit code*.

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

ISO 1113, *Representation of 6 and 7-bit coded character sets on punched tape*.

ISO 2022, *Code extension techniques for use with the ISO 7-bit coded character set*.

This Part of this British Standard has been prepared under the authority of the Data Processing Industry Standards Committee and is based on, and fully in conformity with, ISO 1113, prepared by the International Organization for Standardization (ISO).

Paper tape is one of the main media for input and output in connection with computer installations and for the recording and storage of data. The British Standards relating to this medium have been grouped under the heading BS 3880, “*Paper tape for data processing*”, which is issued in parts, as follows:

- 1) Part 1, “*Unpunched paper tape*”, specifies the properties of the material, the methods of testing the material for those properties, the dimensions of the unpunched tape and the method of coiling the virgin tape.
- 2) Part 2, “*Dimensions and location of punched holes in paper tape*”, specifies the dimensions and location at the time of punching of the data holes and the feed holes, i.e. the patterns of punched holes which represent characters.
- 3) This Part, Part 3, “*Representation of codes on paper tape*”, specifies the correspondence between the patterns of punched holes and the bit patterns by which characters are encoded.
- 4) Part 4, “*General requirements for data interchange on punched paper tape*”, specifies the handling and storage requirements to effect satisfactory interchange of data on punched paper tape.

This Part of this standard is particularly concerned with the representation on one inch paper tape of the ISO 7-bit coded character set or the United Kingdom 7-bit data code. This tape and this code are fully defined in international and national standards; for the tape see Parts 1 and 2 of this standard and for the code see BS 4730, “*The United Kingdom 7-bit data code (ISO-7-UK)*”. This code is not particular to paper tape but is common to paper tape, punched cards, magnetic media and data transmission and is therefore not published as a part of this standard.

Extensions of ISO 7 and of ISO-7-UK employing either 7-bit or 8-bit bytes, which permit a larger repertoire of characters, are defined in ISO 2022 and in BS 4953. Such sets may also be represented on punched tape in accordance with this standard.

A secondary purpose of this Part of this standard is to illustrate the representation on paper tape of International Telegraph Alphabet No. 2 (the Telex code) and to specify the representation on paper tape of 4-bit codes. The internationally agreed code for the general interchange of data in data processing is the 7-bit code specified in ISO 646, and in BS 4730. Nevertheless, although it is not specified in any ISO Recommendation, ITA No. 2 is used for Telex and private telegraph purposes and is commonly represented on paper tape; a 4-bit code may have useful applications where the 7-bit code is not necessary and would be uneconomical (see BS 4731-1).

This British Standard supersedes BS 3480, “*Data processing codes for punched tape*”. The representation on tape of ITA No. 2 and of 4-bit codes specified in that standard have been retained (see the preceding paragraph) but its 6-track, 7-track and 8-track codes (which were respectively a 6-bit code without parity, a 6-bit code with row parity, and a 7-bit code with row parity) have been superseded by the representation specified in this Part of this standard of the 7-bit coded character set of ISO 646, this being equivalent to the United Kingdom 7-bit data code (see BS 4730). The “5-track shift code” of BS 3480 (a 5-bit code without row parity) has been eliminated as being no longer required.

This British Standard also supersedes BS 3967 “*Representation on one inch punched tape of 6 and 7 bit coded character sets for data interchange*”, but those parts of its contents appropriate to this Part of this standard have been retained unchanged.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

**Compliance with a British Standard does not of itself confer immunity from legal obligations.**

### Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 12, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

